1. Simultaneous measurement of temperature and strain based on long-period fiber grating and sagnac interferometer spectrum

Shao, Min (1); Qiao, Xue-Guang (2); Zhao, Xue (3); Fu, Hai-Wei (3); Jia, Zhen-An (3); Feng, De-Quan (3)
Source: *Guang Pu Xue Yu Guang Pu Fen Xi/Spectroscopy and Spectral Analysis*, v 32, n 9, p 2318-2321, September 2012; **Language:** Chinese; **ISSN:** 10000593; **DOI:** 10.3964/j.issn.1000-0593(2012)09-2318-04; **Publisher:** Science Press
Author affiliation: (1) Shaanxi Key Laboratory of Optical Information Technology, School of Science, Northwestern Polytechnical University, Xi'an 710072, China (2) Physics Department, Northwest University, Xi'an 710069, China (3) Ministry of Education Key Laboratory on Photoelectric Oil-Gas Logging and Detecting, School of Science, Xi'an Shiyou University, Xi'an 710065, China
Abstract: A simultaneous measurement system of temperature and strain is proposed and fabricated, which has advantages of low cost and easy structure. The system is formed by combining a long period fiber grating with a polarization-maintaining fiber Sagnac loop. The transmission spectrum of the fiber Sagnac interferometer is modulated by LPFG. The simultaneous measurement of temperature and strain can be realized. The experimental results show that the wavelength of the dip is varied with temperature changing and applied strain on polarization-maintaining fiber, and the intensity of the dip is changed with applied strain on LPFG. The temperature sensitivity of the system is 0.18181 nm·°C-1, the strain sensitivity of LPFG is 0.005283 dB·μ#-1, and the strain sensitivity of polarization-maintaining fiber Sagnac loop is 0.01572 nm·μ#-1. The experimental system indicates that the proposal is feasible and has an application prospect. (13 refs)
Main heading: Polarization-maintaining fiber
Controlled terms: Light polarization - Diffraction gratings - Fiber optic sensors - Interferometers
Uncontrolled terms: Fiber Sagnac interferometers - Long period fiber grating - Simultaneous measurement - Simultaneous measurement systems - Strain sensing - Temperature sensing - Temperature sensitivity - Transmission spectrums
Classification Code: 741.1 Light/Optics - 741.1.2 Fiber Optics - 741.3 Optical Devices and Systems - 941.3 Optical Instruments
Database: Compendex
Data Provider: Engineering Village
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2. Simultaneous measurement of temperature and refractive index based on LPFG and Sagnac loop

Shao, Min (1); Qiao, Xue-Guang (2); Fu, Hai-Wei (3); Zhao, Xue (3); Gao, Hong (3); Liu, Qin-Peng (3)
Source: *Guangdianzi Jiguang/Journal of Optoelectronics Laser*, v 23, n 8, p 1442-1446, August 2012; **Language:** Chinese; **ISSN:** 10050086; **Publisher:** Board of Optronics Lasers
Author affiliation: (1) Shaanxi Key Laboratory of Optical Information Technology, School of Science, Northwestern Polytechnical University, Xi'an 710072, China (2) Physics Department, Northwest University, Xi'an 710069, China (3) Key Laboratory on Photoelectric Oil-Gas Logging and Detecting of Ministry of Education, School of Science, Xi'an Shiyou University, Xi'an 710065, China
Abstract: A simultaneous measurement system for temperature and refractive index is proposed using a long period fiber grating (LPFG) and a polarization-maintaining fiber (PMF) Sagnac loop, based on which the transmission spectrum of the fiber Sagnac interferometer is modulated by the LPFG. Through measuring the wavelength shifts and the intensity changes of a resonance dip of the system, the wavelength and the intensity response sensitivities to temperature and refractive index are obtained, and the sensitivity coefficient matrix is constructed. The experimental results show that the wavelength of the dip varies with temperature and the intensity of the dip changes with refractive index. The temperature sensitivity of the system is 0.12857 nm/°C, and the refractive index sensitivity of LPFG is 49.380 32 dB/RIU. The experimental system is small and easy to set up, whose cost is relatively low and it has good application prospect. (18 refs)
Main heading: Refractive index
Controlled terms: Fiber optic sensors - Refractometers - Polarization-maintaining fiber - Light polarization - Diffraction gratings
Uncontrolled terms: Application prospect - Experimental system - Fiber Sagnac interferometers - Intensity change - Long period fiber grating - Refractive index sensitivity - Refractive index sensor - Response sensitivity - Sagnac loop - Sensitivity coefficient - Simultaneous measurement - Temperature sensitivity - Transmission spectrums - Wavelength shift
Classification Code: 741.1 Light/Optics - 741.1.2 Fiber Optics - 741.3 Optical Devices and Systems - 941.3 Optical Instruments
Database: Compendex
Data Provider: Engineering Village

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3. Laboratory studies of high-temperature-compound steam drive on heavy oil

Huang, Hai (1); Zheng, Weishi (2); Chen, Bo (3); Liu, Yifei (1)
Source: *Advanced Materials Research*, v 524-527, p 1185-1189, 2012, *Natural Resources and Sustainable Development II*; **ISSN:** 10226680; **ISBN-13:** 9783037854174; **DOI:** 10.4028/www.scientific.net/AMR.524-527.1185; **Conference:** 1st International Conference on Energy and Environmental Protection, ICEEP 2012, June 23, 2012 - June 24, 2012; **Publisher:** Trans Tech Publications
Author affiliation: (1) Department of Petroleum Engineering, Xi'an Shiyou University, 18# Electronic Two Road, Xi'an City, 710065, China (2) Engineering Technology Research Institute, Chuanqing Drilling and Exploration Co., Fengcheng Four Road, Xi'an City 710061, China (3) Fifth Oil Production Factory of Chanqing Oil Field, Fengcheng Two Road, Xi'an City, 710061, China
Abstract: This paper presents experimental work on the research of the mechanism of oil displacement of steam drive and high-temperature-compound steam drive, which in order to improve the conventional steam drive technology and increase the recovery of heavy oil. Many experiments were done with the sand-packed model under the formation condition. The results show that: (a) the high-temperature-compound steam drive could extend the water breakthrough time, increase the permeability of oil phase, reduce the residual oil saturation; (b) reducing the viscosity by CO2dissolution, maintaining the pressure, improving the oil flow ratio, dissolved gas drive, Improving oil displacement efficiency, all of above were the increase production mechanism of high-temperature-compound steam drive. © (2012) Trans Tech Publications. (5 refs)
Main heading: Crude oil
Controlled terms: Heavy oil production - Steam
Uncontrolled terms: Dissolved gas - Formation condition - Heavy oil - Laboratory studies - Oil displacement - Oil flow - Oil phase - Oil-displacement efficiency - Production mechanisms - Residual oil saturation - Water breakthrough
Classification Code: 511.1 Oil Field Production Operations - 512.1 Petroleum Deposits
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

4. Features of gravity anomaly and its geological significance of Bohai Sea, China (*Open Access*)

Zhang, Chunguan (1); Zhang, Guoli (2); Tong, Qingjia (3)
Source: *Energy Procedia*, v 14, p 26-31, 2012, *2011 2nd International Conference on Advances in Energy Engineering, ICAEE 2011*; **ISSN:** 18766102; **DOI:** 10.1016/j.egypro.2011.12.892; **Conference:** 2011 2nd International Conference on Advances in Energy Engineering, ICAEE 2011, December 27, 2011 - December 28, 2011; **Sponsor:** Asia Pacific Human-Computer Interaction Research Center; **Publisher:** Elsevier Ltd
Author affiliation: (1) No.18 East Section, School of Petroleum Resources, Xi'an Shiyou University, Xi'an Dianzi 2 Road, Xi'an, 710065, China (2) Tianjin Institute of Geology and Mineral Resources, No. 4, 8th Road, Dazhigu, Tianjin, 300170, China (3) BGP Geophysical Research Institute, Changqing Division, CNPC, Weiyang Building, Chaotan Town, Xi'an, 710021, China
Abstract: Gravity data was interpreted in Bohai Sea of China in order to study structural features and find out the distribution rules of oil and gas in this area. This paper, through data processing and synthetic interpretation of the gravity data in Bohai Sea, discusses characteristics of the gravity field and their geological significance, determines the fault system, divides structure unites and analyses the relationship between the features of local gravity anomaly and the distribution of oil and gas fields. The results show that Tanlu fault controlled the regional tectonic evolution and the boundary of the structure units of Bohai Sea in Bohai bay basin. Structurally, this area can be divided into seven units, including Huanghua sag, Chenning uplift, Bozhong sag, Jiyang sag, Liaohe sag, Yanshan fold belt and Jiaoliao uplift. In these sag, a lot of local structures and fault developed, and then many favorable traps and systems of migration and hydrocarbon reservoirs formed. There is a close relationship between the distribution of oil and gas fields and the local gravity highs. The relief areas surrounded by these petroleum generative depressions are the most favorable potential targets for the oil and gas exploration, and the intermediate zones between the depressions and the reliefs are also the significant areas in Bohai Sea. © 2011 Published by Elsevier Ltd. (19 refs)
Main heading: Gravitation
Controlled terms: Data handling - Petroleum prospecting - Gas industry - Faulting - Offshore gas fields - Gases - Hydrocarbons - Petroleum reservoirs
Uncontrolled terms: Bohai Sea - Geological significance - Gravity anomalies - Oil and gas distributions - Structure unit

Classification Code: 484.1 Earthquake Measurements and Analysis - 512.1.1 Oil Fields - 512.1.2 Petroleum Deposits : Development Operations - 512.2.1 Natural Gas Fields - 522 Gas Fuels - 723.2 Data Processing and Image Processing - 804.1 Organic Compounds - 931.5 Gravitation, Relativity and String Theory
Open Access type(s): All Open Access, Gold
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

5. Self-rotation of optical polarization in rubidium vapor (*Open Access*)

Qiu, Shuwei (1); Guo, Wenge (1); Cao, Mingtao (2); Liu, Tao (2); Han, Liang (2); Liu, Hao (2); Zhang, Pei (2); Zhang, Shougang (3); Gao, Hong (2); Li, Fuli (2)
Source: *Chinese Optics Letters*, v 10, n 5, May 2012; **ISSN:** 16717694; **DOI:** 10.3788/COL201210.052701; **Article number:** 052701; **Publisher:** Science Press
Author affiliation: (1) MOE Key Laboratory for Electricity Gas and Oil Logging, Xi'an Shiyou University, Xi'an 710065, China (2) MOE Key Laboratory for Nonequilibrium Synthesis and Modulation of Condensed Matter, Xi'an Jiaotong University, Xi'an 710049, China (3) CAS Key Lab. Time and Frequency Primary Standard, National Time Service Center, Xi'an 710600, China
Abstract: We present an experimental and theoretical study of self-rotation of optical polarization in a rubidium vapor. The atomic vapor is placed in a magnetic shielding cavity to suppress the Faraday rotation effect. In our experiment, Doppler-free spectroscopy configuration is used, and F=2 $\rightarrow$ F'=3 transition of 87Rb D2 line is chosen. We observe self-rotation of optical polarization effect at different pump light ellipticities. A theoretical analysis is then provided based on the experimental conditions. Theoretical simulation and experimental results are in good agreement. © 2012 Chinese Optics Letters. (11 refs)
Main heading: Light polarization
Controlled terms: Rubidium - Rotation
Uncontrolled terms: Atomic vapor - Doppler-free spectroscopy - Experimental conditions - Faraday rotation effect - Rubidium vapor - Self rotations - Theoretical simulation - Theoretical study
Classification Code: 549.1 Alkali Metals - 741.1 Light/Optics - 931.1 Mechanics
Open Access type(s): All Open Access, Bronze
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

6. The study of drilling safe monitoring system based on multi agent group

Gao, Fei (1); Zhao, Xionghu (1); Liu, Hongshan (2); Liu, Zhikun (1, 3); Yang, Junzheng (4)
Source: *Advanced Materials Research*, v 512-515, p 2565-2569, 2012, *Renewable and Sustainable Energy II*; **ISSN:** 10226680; **ISBN-13:** 9783037854143; **DOI:** 10.4028/www.scientific.net/AMR.512-515.2565; **Conference:** 1st International Conference on Energy and Environmental Protection, ICEEP 2012, June 23, 2012 - June 24, 2012; **Publisher:** Trans Tech Publications
Author affiliation: (1) State Key Laboratory of Petroleum Resources and Prospecting, China University of Petroleum, Changping, Beijing 102249, China (2) China Petroleum Pipeline Telecom and Electricity Engineering Corp, Hebei Langfang 065000, China (3) Institute of Petroleum Engineering, Xi'an Shiyou University, Shannxi Xi'an 710065, China (4) Research Institute of Petroleum Exploration and Development-Langfang, Hebei Langfang 065000, China
Abstract: Lots of complexity and uncertainties are existed in drilling process. Further more, one of the possible ways to solve on-site drilling safety accidents is the early-warning through real-time monitoring. Based on the analysis of main hazards during drilling process, considering that most of the hazards are observable and controllable, by using multi agent group (MAG) technology of distributed artificial intelligence (DAI), this paper puts forward a functional schematic model with drilling hazards monitoring multi agent group, which includes real-time monitoring agent, feature extraction agent warning analysis agent, communication agent and user interaction agent. Considering the features of drilling engineering hazard monitoring, a distributed drilling safety monitoring system including the two levels, site-level and base-level, is built. © (2012) Trans Tech Publications, Switzerland. (7 refs)
Main heading: Hazards
Controlled terms: Multi agent systems - Monitoring
Uncontrolled terms: Communication agents - Distributed Artificial Intelligence - Drilling engineering - Drilling hazards - Drilling process - Early warning - Multi agent - Real time monitoring - Real-time warning - Safe monitoring - Safety monitoring - Safety monitoring system - User interaction
Classification Code: 914.1 Accidents and Accident Prevention
Database: Compendex

Data Provider: Engineering Village
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7. Preparation of machinable B4C/BN composites and their Oxidation resistances at high temperature

Jiang, Tao (1); Jin, Zhihao (2); Jin, Haiyun (3)
Source: *Kuei Suan Jen Hsueh Pao/Journal of the Chinese Ceramic Society*, v 40, n 9, p 1235-1241, September 2012; **Language:** Chinese; **ISSN:** 04545648; **Publisher:** Chinese Ceramic Society
Author affiliation: (1) School of Materials Science and Engineering, Xi'an Shiyou University, Xi'an 710065, China (2) State Key Laboratory for Mechanical Behavior of Materials, School of Materials Science and Engineering, Xi'an Jiaotong University, Xi'an 710049, China (3) State Key Laboratory of Electrical Insulation and Power Equipment, School of Electrical Engineering, Xi'an Jiaotong University, Xi'an 710049, China
Abstract: The B4C monolith, B4C/BN microcomposites and B4C/BN nanocomposites were fabricated by hot-pressing process. Oxidation resistance of the hot-pressed specimens at 1000-1300°C were investigated. The phase composition and microstructure of the sample's surface after oxidation process were analyzed. The oxidation mechanism of specimens was discussed. The results showed that the oxidation resistances of B4C monolith, B4C/BN microcomposites and B4C/BN nanocomposites at high temperature decreased gradually with the increase of oxidation temperature and oxidation time. The mass-loss of composites samples became remarkably. The oxidation resistance curve of specimens obtained from different oxidation temperatures was analyzed by linear regressive methods. The specimens exhibited excellent oxidation resistance at 1000°C, but the oxidation resistance of specimens decreased remarkably at 1300°C. The X-ray diffraction patterns showed that there existed the B4C phase and h-BN phase on surface of the oxidized specimens, and low content of B2O3 phase and Al4B2O9 or Al18B4O33 phase also existed on surface of the oxidized specimens. There existed an oxidized layer with the thickness of about 100μm on the surface of oxidized specimens. The microstructure showed that there existed some small pores and glass phase on the surface of the oxidized specimens. The specimen's mass decreased gradually with the increase of oxidation temperature and oxidation time due to the evaporation of the produced B2O3 during the high temperature oxidation process. (24 refs)
Main heading: Oxidation resistance
Controlled terms: Thermooxidation - Ceramic materials - Composite materials - Microstructure - Boron carbide - III-V semiconductors - Nanocomposites - Hot pressing - X ray diffraction - Aluminum compounds - Boron nitride
Uncontrolled terms: Composite ceramic - High temperature - Hot-pressing process - Isothermal oxidation process - Micro-composites - Oxidation mechanisms - Oxidation process - Oxidation temperature
Classification Code: 539.1 Metals Corrosion - 712.1 Semiconducting Materials - 761 Nanotechnology - 802.2 Chemical Reactions - 804.2 Inorganic Compounds - 812.1 Ceramics - 933 Solid State Physics - 951 Materials Science
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

8. Optical properties of Ti-doped ZnO films synthesized via magnetron sputtering

Chen, Haixia (1); Ding, Jijun (2); Shi, Feng (3); Li, Yingfeng (4); Guo, Wenge (1)
Source: *Journal of Alloys and Compounds*, v 534, p 59-63, September 5, 2012; **ISSN:** 09258388; **DOI:** 10.1016/j.jallcom.2012.04.064; **Publisher:** Elsevier Ltd
Author affiliation: (1) School of Science, Xi'An Shiyou University, Xi'an, Shaanxi 710065, China (2) Electronic Materials Research Laboratory, Key Laboratory of Ministry of Education, Xi'An Jiaotong University, Xi'an, Shaanxi 710049, China (3) Department of Renewable Energy Engineering, Oregon Institute of Technology, Klamath Falls, OR 97601, United States (4) Department of Electrical and Computer Engineering, Texas AandM University, College Station, TX 77843, United States
Abstract: Undoped and Ti-doped ZnO films were deposited using magnetron sputtering at various sputtering power. The crystal structures, surface morphology and optical properties in ZnO films were systematically investigated via X-ray diffraction (XRD), atomic force microscopy (AFM), Jasco V-570 UV/VIS/NIR and ultraviolet visible (UV-Vis) spectrophotometer. The results indicated that Ti-doped ZnO polycrystalline films with a hexagonal wurzite structure formed. Ti-doped ZnO films show more uniform and denser columnar structures with the increase of sputtering power, and a metallic conduction behavior was observed when sputtering powers is increased to 150 and 200 W. One main blue emission peak located at 445 nm was observed. However, blue emission centered at 445 nm continually blue shifted to 438 nm as sputtering power further increased. The shift mechanism of blue emission at different deposited conditions is discussed in detail. © 2012 Elsevier B.V. All rights reserved. (21 refs)
Main heading: Optical properties
Controlled terms: II-VI semiconductors - Metallic films - X ray diffraction - Atomic force microscopy - Crystal atomic structure - Titanium compounds - Magnetron sputtering - Zinc oxide - Optical films

Uncontrolled terms: Blue emission - Blue-shifted - Columnar structures - Metallic conduction - Polycrystalline film - Shift mechanism - Sputtering power - Ti-doped ZnO films
Classification Code: 712.1 Semiconducting Materials - 741.1 Light/Optics - 741.3 Optical Devices and Systems - 804.2 Inorganic Compounds - 931.3 Atomic and Molecular Physics - 933.1.1 Crystal Lattice
Funding Details: Number: YS29031223, Acronym: -, Sponsor: -; Number: YS29030801, Acronym: -, Sponsor: -; Number: 11074198, Acronym: -, Sponsor: -; Number: 12JK0426, Acronym: -, Sponsor: -;
Funding text: This work was supported by the National Natural Science Foundations of China (Grants 11074198), Special Program for Scientific Research of Shaanxi Educational Committee (Grants 12JK0426), Innovation Fund of Xi'an Shiyou University (Grants YS29030801) and the Doctoral Scientific Research Startup Foundation of Xi'an Shiyou University (Grants YS29031223).
Database: Compendex
Data Provider: Engineering Village
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9. Violet-blue-green emission and shift in Mg-doped ZnO films with different ratios of oxygen to argon gas flow

Chen, Haixia (1); Ding, Jijun (2); Guo, Wenge (1); Shi, Feng (3); Li, Yingfeng (4)
Source: *Applied Surface Science*, v 258, n 24, p 9913-9917, October 1, 2012; **ISSN:** 01694332; **DOI:** 10.1016/j.apsusc.2012.06.050; **Publisher:** Elsevier B.V.
Author affiliation: (1) School of Science, Xi'An Shiyou University, Xi'an, Shaanxi 710065, China (2) Electronic Materials Research Laboratory, Key Laboratory of Ministry of Education, Xi'An Jiaotong University, Xi'an, Shaanxi 710049, China (3) Department of Renewable Energy Engineering, Oregon Institute of Technology, Klamath Falls, OR 97601, United States (4) Department of Electrical and Computer Engineering, Texas A and M University, College Station, TX 77843, United States
Abstract: Mg-doped ZnO films were deposited using radio frequency reactive magnetron sputtering at different ratios of oxygen to argon gas flow. The crystal structures, surface morphology and optical properties of Mg-doped ZnO thin films were analyzed. The results indicated that three main emission peaks located at 400, 440 and 483 nm were observed in Mg-doped ZnO films. Violet peak at 400 nm and blue peak centered at 440 nm shifted to 392 nm and 422 nm, respectively, as the ratio of oxygen to argon gas flow is increased. The spectra shift mechanism was discussed, which would be caused by small amount of Zn nanoparticles in Mg-doped ZnO films. The electrons on the Zn conduction band will go across the interface for energy equilibration, and then transition to Zn vacancies and the top of the valence band, which may cause spectra shift. (24 refs)
Main heading: Flow of gases
Controlled terms: Optical properties - Optical films - Oxygen - Zinc - Argon - Magnetron sputtering - Surface morphology - Thin films - II-VI semiconductors - Zinc oxide - Magnesium - Magnesium compounds - Metallic films
Uncontrolled terms: Blue-green emissions - Emission peaks - Mg-doped ZnO - Radio frequency reactive magnetron sputtering - Spectra shift - Spectral shift - Zn nanoparticles - Zn vacancies
Classification Code: 542.2 Magnesium and Alloys - 546.3 Zinc and Alloys - 549.2 Alkaline Earth Metals - 631.1.2 Gas Dynamics - 712.1 Semiconducting Materials - 741.1 Light/Optics - 741.3 Optical Devices and Systems - 804 Chemical Products Generally - 804.2 Inorganic Compounds
Funding Details: Number: YS29031223, Acronym: -, Sponsor: -; Number: 12JK0426, Acronym: -, Sponsor: Education Department of Shaanxi Province; Number: 11074198, Acronym: -, Sponsor: -;
Funding text: This work was supported by the National Nature Science Foundations of China (Grants 11074198), Scientific Research Program funded by Shaanxi Provincial Education Department (Grants 12JK0426) and the Doctoral Scientific Research Startup Foundation of Xi'an Shiyou University (Grants YS29031223).
Database: Compendex
Data Provider: Engineering Village
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10. Reserch on three-dimension sedimentary facies model building of the reservoir Chang2 member, Yanchang formation In Zhifang Area, Erdos basin

Qiang, Kun-Sheng (1, 2); Wang, Jian-Min (3); Tian, Xin-Wen (4); Lü, Xiu-Xiang (1, 2); Tian, Lei (1, 2)
Source: *Applied Mechanics and Materials*, v 466-467, p 303-307, 2012, *Intelligent System and Applied Material*; **ISSN:** 16609336, **E-ISSN:** 16627482; **ISBN-13:** 9783037853689; **DOI:** 10.4028/www.scientific.net/AMR.466-467.303; **Conference:** 2012 International Conference on Intelligent System and Applied Material, GSAM 2012, January 13, 2012 - January 15, 2012; **Publisher:** Trans Tech Publications
Author affiliation: (1) State Key Laboratory of Petroleum Resources and Prospecting, Beijing 102249, China (2) College of Geosciences, China University of Petroleum, Beijing 102249, China (3) School of Oil and Gas Resources,

Xi'An Petroleum University, Xian ShaanXi, 710065, China (4) Yongning Oil Production Plant, Yanchang Petroleum, Zhidan ShaanXi, 717500, China
Abstract: Through the Ordos basin sample with Triassic Yanchang formation Chang 2 member sedimentary facies research and analysis, the use of deterministic modeling and the theory of stochastic modeling, using PETREL software, the establishment of a three-dimensional visualization of the study area Chang 2 member geological reservoir facies model, the model and geological interpretation in the whole match, a true reflection of the sedimentary characteristics of the study area, the numerical simulation for the latter part of remaining oil and provide a geological basis. Sand distribution model based on a clear understanding of sand microfacies characteristics distribution in the plane and space, the combination of relations, proved in the study area is mainly sand flat on the NE - SW band distribution, the distributary channel facies under control the trend of the sand body, in the same succession of small rivers within the good level, migration is not swinging, with micro-facies stability.Chang2 member channel development, is the favorable oil and gas accumulation zones. © (2012) Trans Tech Publications. (5 refs)
Main heading: Stochastic systems
Controlled terms: Three dimensional computer graphics - Sedimentology - Computer software - Metamorphic rocks - Sand - Stochastic models - Sustainable development
Uncontrolled terms: Ordos Basin - Sedimentary micro-facies - Three-dimensional modeling - Western China - Zhifang area
Classification Code: 481.1 Geology - 483.1 Soils and Soil Mechanics - 723 Computer Software, Data Handling and Applications - 723.2 Data Processing and Image Processing - 723.5 Computer Applications - 731.1 Control Systems - 922.1 Probability Theory - 961 Systems Science
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

11. Reserch on three-dimension sedimentary facies model building of the reservoir Chang2 member, Yanchang formation In Zhifang Area, Erdos basin

Qiang, Kun-Sheng (1, 2); Wang, Jian-Min (3); Tian, Xin-Wen (4); Lü, Xiu-Xiang (1, 2); Tian, Lei (1, 2)
Source: *Advanced Materials Research*, v 466-467, p 303-307, 2012, *Intelligent System and Applied Material*; **ISSN:** 10226680; **ISBN-13:** 9783037853689; **Conference:** 2012 International Conference on Intelligent System and Applied Material, GSAM 2012, January 13, 2012 - January 15, 2012; **Publisher:** Trans Tech Publications
Author affiliation: (1) State Key Laboratory of Petroleum Resources and Prospecting, Beijing 102249, China (2) College of Geosciences, China University of Petroleum, Beijing 102249, China (3) School of Oil and Gas Resources, Xi'An Petroleum University, Xian ShaanXi, 710065, China (4) Yongning Oil Production Plant, Yanchang Petroleum, Zhidan ShaanXi, 717500, China
Abstract: Through the Ordos basin sample with Triassic Yanchang formation Chang 2 member sedimentary facies research and analysis, the use of deterministic modeling and the theory of stochastic modeling, using PETREL software, the establishment of a three-dimensional visualization of the study area Chang 2 member geological reservoir facies model, the model and geological interpretation in the whole match, a true reflection of the sedimentary characteristics of the study area, the numerical simulation for the latter part of remaining oil and provide a geological basis. Sand distribution model based on a clear understanding of sand microfacies characteristics distribution in the plane and space, the combination of relations, proved in the study area is mainly sand flat on the NE - SW band distribution, the distributary channel facies under control the trend of the sand body, in the same succession of small rivers within the good level, migration is not swinging, with micro-facies stability.Chang2 member channel development, is the favorable oil and gas accumulation zones. © (2012) Trans Tech Publications. (5 refs)
Main heading: Stochastic systems
Controlled terms: Three dimensional computer graphics - Sand - Stochastic models - Sustainable development - Computer software - Metamorphic rocks - Sedimentology
Uncontrolled terms: Ordos Basin - Sedimentary micro-facies - Three-dimensional modeling - Western China - Zhifang area
Classification Code: 481.1 Geology - 483.1 Soils and Soil Mechanics - 723 Computer Software, Data Handling and Applications - 723.2 Data Processing and Image Processing - 723.5 Computer Applications - 731.1 Control Systems - 922.1 Probability Theory - 961 Systems Science
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

12. Reserach on characteristics and three-dimension geologic model building of the Chang2 Reservoir,Yanchang formation In Zhifang Area, Zhidan Oilfield

Qiang, Kun-Sheng (1, 2); Wang, Jian-Min (3); Tian, Xin-Wen (4); Lü, Xiu-Xiang (1, 2); Wang, Li (1, 2)
Source: *Advanced Materials Research*, v 466-467, p 287-292, 2012, *Intelligent System and Applied Material*; **ISSN:** 10226680; **ISBN-13:** 9783037853689; **Conference:** 2012 International Conference on Intelligent System and Applied Material, GSAM 2012, January 13, 2012 - January 15, 2012; **Publisher:** Trans Tech Publications
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Abstract: Through the reservoir of Chang 2 member in Zhifang area, Zhidan oilfield is typical of low porosity and low permeability reservoir rocks, using casting thin sections, scanning electron microscopy and physical analysis, etc., starting with the reservoir characteristics of Chang2 member, we have understood its causes and characteristics of low permeability. Using sequential indicator simulation and based on the target body method, we established the head of the construction of the reservoir model in Chang 2 member, using the sequential Gaussian simulation method combined with phase control principle, a model of reservoir properties in this area was established, Getting a high quality reservoir and field development and deployment of later development and further adjustments to tap the potential pratical guidance. © (2012) Trans Tech Publications. (7 refs)
Main heading: Petroleum reservoir engineering
Controlled terms: Oil well flooding - Quality control - Taps - Geologic models - Low permeability reservoirs - Scanning electron microscopy
Uncontrolled terms: Ordos Basin - Three-dimensional modeling - Western china - Yanchang Formation - Zhifang area
Classification Code: 481.1 Geology - 511.1 Oil Field Production Operations - 512.1 Petroleum Deposits - 512.1.2 Petroleum Deposits : Development Operations - 605.2 Small Tools, Unpowered - 913.3 Quality Assurance and Control
Database: Compendex
Data Provider: Engineering Village
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13. Reserach on characteristics and three-dimension geologic model building of the Chang2 Reservoir,Yanchang formation In Zhifang Area, Zhidan Oilfield

Qiang, Kun-Sheng (1, 2); Wang, Jian-Min (3); Tian, Xin-Wen (4); Lü, Xiu-Xiang (1, 2); Wang, Li (1, 2)
Source: *Applied Mechanics and Materials*, v 466-467, p 287-292, 2012, *Intelligent System and Applied Material*; **ISSN:** 16609336, **E-ISSN:** 16627482; **ISBN-13:** 9783037853689; **DOI:** 10.4028/www.scientific.net/AMR.466-467.287; **Conference:** 2012 International Conference on Intelligent System and Applied Material, GSAM 2012, January 13, 2012 - January 15, 2012; **Publisher:** Trans Tech Publications
Author affiliation: (1) State Key Laboratory of Petroleum Resources and Prospecting, China University of Petroleum, Beijing 102249, China (2) College of Geosciences, China University of Petroleum, Beijing 102249, China (3) School of Oil and Gas Resources, Xi'An Petroleum University, Xian ShaanXi, 710065, China (4) Yongning Oil Production Plant, Yanchang Petroleum, Zhidan ShaanXi, 717500, China
Abstract: Through the reservoir of Chang 2 member in Zhifang area, Zhidan oilfield is typical of low porosity and low permeability reservoir rocks, using casting thin sections, scanning electron microscopy and physical analysis, etc., starting with the reservoir characteristics of Chang2 member, we have understood its causes and characteristics of low permeability. Using sequential indicator simulation and based on the target body method, we established the head of the construction of the reservoir model in Chang 2 member, using the sequential Gaussian simulation method combined with phase control principle, a model of reservoir properties in this area was established, Getting a high quality reservoir and field development and deployment of later development and further adjustments to tap the potential pratical guidance. © (2012) Trans Tech Publications. (7 refs)
Main heading: Petroleum reservoir engineering
Controlled terms: Geologic models - Low permeability reservoirs - Oil well flooding - Taps - Scanning electron microscopy - Quality control
Uncontrolled terms: Ordos Basin - Three-dimensional modeling - Western China - Yanchang Formation - Zhifang area
Classification Code: 481.1 Geology - 511.1 Oil Field Production Operations - 512.1 Petroleum Deposits - 512.1.2 Petroleum Deposits : Development Operations - 605.2 Small Tools, Unpowered - 913.3 Quality Assurance and Control
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

14. A simple flow-injection chemiluminescence method for the determination of trace pentavalent vanadium in water samples

Zhang, Gai (1, 2); Meng, Zuchao (3); Ma, Hairui (4)
Source: *International Journal of Environmental Analytical Chemistry*, v 92, n 3, p 366-372, March 2012; **ISSN:** 03067319, **E-ISSN:** 10290397; **DOI:** 10.1080/03067311003628604; **Publisher:** Taylor and Francis Ltd.
Author affiliation: (1) Shaanxi Key Laboratory of Physico-Inorganic Chemistry, College of Chemistry and Materials Science, Northwest University, Xi'an 710069, China (2) School of Materials and Chemical Engineering, Xi'an Technological University, Xi'an 710032, China (3) College of Chemistry and Chemical Engineering, Xi'an Petroleum University, Xi'an 710065, China (4) The Eleventh Research Institute of the Sixth Academy of CASC, P.O. Box 15-11, Xi'an 710100, China
Abstract: A simple method for rapid determination of trace pentavalent vanadium in natural water was presented by flow-injection chemiluminescence (CL). Through water injection, luminol and potassium permanganate were eluted from the anion exchange column to generate the CL, which was enhanced in the presence of V(V). Under the optimum conditions, the increased CL intensity was linear with V(V) concentration in the range from 0.1 to 100 ng mL-1. The limit of detection was 50 pg mL-1 (3σ) and the relative standard deviation (RSD) was 2.24% (n = 5) for a 1.0 ng mL-1 V(V). At a flow rate of 2.0 mL min-1, one cycle of analysis could be performed in 0.5 min with a RSD of less than 3.0%. The proposed method was successfully applied to the determination of vanadium in natural water. © 2012 Copyright Taylor and Francis Group, LLC. (16 refs)
Main heading: Water injection
Controlled terms: Chemiluminescence - Trace analysis - Oil well flooding - Potash
Uncontrolled terms: Anion exchange columns - environmental - Flow injection chemiluminescence - Flow injection chemiluminescence methods - Limit of detection - On-line analysis - Potassium permanganate - Relative standard deviations
Classification Code: 511.1 Oil Field Production Operations - 612.1 Internal Combustion Engines, General - 741.1 Light/Optics - 801 Chemistry - 802.2 Chemical Reactions - 804.2 Inorganic Compounds
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

15. Research and improvement of unstructured P2P super-peer topology and search technique

Wang, Xue-Long (1, 2); Zhang, Jing (1); Yang, Huai-Zhou (2)
Source: *Information Technology Journal*, v 11, n 10, p 1400-1408, 2012; **ISSN:** 18125638, **E-ISSN:** 18125646; **DOI:** 10.3923/itj.2012.1400.1408; **Publisher:** Asian Network for Scientific Information
Author affiliation: (1) School of Computer Science and Engineering, Xi'an University of Technology, Xi'an 710048, China (2) School of Computer Science, Xi'an Shiyou University, Xi'an, 710065, China
Abstract: The study analyzed the current popular unstructured super-peer topology and the search technique. In order to avoid the high expense of topology construction, the huge cost of topology repair and the low efficiency of search, a kind of novel construction method of orderly layered super-peer topology guided by the safety peer (OLST) is presented and the search function is realized in this study. After the leaf peers being transferred and layered, the new coming peer will be joined by an assigned safety super-peer. An idea of among friends with similar interests is used to improve the search efficiency of the topology. The experimental results indicate that the method can effectively balance the super-peer load and significantly decrease the construction and repair cost of the topology. Furthermore, the search efficiency is also increased. © 2012 Asian Network for Scientific Information. (23 refs)
Main heading: Topology
Controlled terms: Efficiency - Repair
Uncontrolled terms: Interest cluster - Search technique - Super-peer - Topology construction - Unstructured peer-to-peer
Classification Code: 913.1 Production Engineering - 913.5 Maintenance - 921.4 Combinatorial Mathematics, Includes Graph Theory, Set Theory
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

16. Simulation analysis of influence factors in dynamic hysteresis model based on magneto-elastic effect

Tang, Dedong (1); Mou, Julan (2); Zhou, Pengchao (3); Peng, Jun (1)

Source: *Proceedings of the 11th IEEE International Conference on Cognitive Informatics and Cognitive Computing, ICCI*CC 2012*, p 456-459, 2012, *Proceedings of the 11th IEEE International Conference on Cognitive Informatics and Cognitive Computing, ICCI*CC 2012*; **ISBN-13:** 9781467327930; **DOI:** 10.1109/ICCI-CC.2012.6311192; **Article number:** 6311192; **Conference:** 11th IEEE International Conference on Cognitive Informatics and Cognitive Computing, ICCI*CC 2012, August 22, 2012 - August 24, 2012; **Sponsor:** Int. Inst. Cognitive Informatics Cognitive Comput. (ICIC); et al.; IEEE; IEEE Computational Intelligence Society; IEEE Computer Society; Microsoft Research; **Publisher:** IEEE Computer Society
Author affiliation: (1) College of Electrical and Information Engineering, Chongqing University of Science and Technology, Chongqing, China (2) Department of Experimental Equipment, Chongqing University of Science and Technology, Chongqing, China (3) College of Electric Engineering, Xian Shiyou University, Xian, China
Abstract: Ferromagnetic materials have magneto-elastic effect when the materials was be magnetized. This characteristics using in cable tension measurement, which has a lot of merits contrasted with the method of vibration frequency and strain gages, its frequency of dynamic response is high, its life-span is long and its capacity of protecting over-loading is strong etc. so it is the most ideal methods. But the theory and model of magneto-elastic effect is not perfect, there are some problems to be researched and overcome. Such as dynamic hysteretic model, influence factors of magneto-elastic effect and so on. In this article, the dynamic hysteretic model is established based on energy conservation, analyze the main influence factors of model, which include bias magnetic field and excitation mode, excitation frequency, temperature influence. And simulate the results of that influence parameter, and it indicates that those influences are greatness, we must select rational excitation mode and frequency, and must overcome the temperature influence, the magneto-elastic effect will be widely using in cable tension measurement of bridge. © 2012 IEEE. (6 refs)
Main heading: Hysteresis
Controlled terms: Ferromagnetic materials - Cables - Hysteresis loops - Factor analysis
Uncontrolled terms: Bias magnetic field - Dynamic hysteresis modeling - Excitation frequency - Influence factors - Magnetoelastic effects - Simulation analysis - Temperature influence - Theory and modeling
Classification Code: 708.4 Magnetic Materials - 921 Mathematics - 922.2 Mathematical Statistics - 961 Systems Science
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

17. Access control security model based on dual identity authentication in cloud computing environment

Ning, Yumei (1); Ding, Zhenguo (1); Zeng, Ping (1, 2); Wang, Chen (1)
Source: *Huazhong Keji Daxue Xuebao (Ziran Kexue Ban)/Journal of Huazhong University of Science and Technology (Natural Science Edition)*, v 40, n SUPPL.1, p 288-292, December 2012; **Language:** Chinese; **ISSN:** 16714512; **Publisher:** Huazhong University of Science and Technology
Author affiliation: (1) School of Computer Science and Technology, Xidian University, Xi'an 710071, China (2) Department of Computer Science and Technology, Xi'an Shiyou University, Xi'an 710065, China
Abstract: An access control security model based on twofold user authentication was put forward for user's access security issues in cloud computing environment. Based on the characteristics of one-way hash function, using the uniqueness of the user's fingerprint and the host MAC, an access control policy was established according to the type of user authentication. And a mutual authentication relationship between users and cloud servers was established to ensure the both legal status and to guarantee the cloud computing environment information privacy and integrity. (12 refs)
Main heading: Cloud computing
Controlled terms: Hash functions - Authentication
Uncontrolled terms: Access control policies - Cloud computing environments - Encipherment - Fingerprint - Identity authentication - One way hash functions - Unique - User authentication
Classification Code: 722.4 Digital Computers and Systems - 723 Computer Software, Data Handling and Applications
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

18. Study and application on layered polymer injection with concentric string

He, Yawei (1); Liu, Licai (2)
Source: *Advanced Materials Research*, v 535-537, p 1135-1141, 2012, *Advanced Engineering Materials II*; **ISSN:** 10226680; **ISBN-13:** 9783037854464; **DOI:** 10.4028/www.scientific.net/AMR.535-537.1135; **Conference:** 2nd

International Conference on Advanced Engineering Materials and Technology, AEMT 2012, July 6, 2012 - July 8, 2012; **Publisher:** Trans Tech Publications
Author affiliation: (1) College of Energy and Environmental Engineering, Yanan University, Yanan, Shaanxi, 716000, China (2) College of Petroleum Engineering, Xi'an Shiyou University, Xi'an, Shaanxi, 710065, China
Abstract: At present, the domestic pipe string on layered polymer injection is mainly focused on the layered polymer injection technology with the hollow single pipe string, but it's limited by facts such as complicated operating and retrieving, subjecting to plugging, and single injection fluid system for each and every zones in a well. This paper starts with the idea of concentric string, directing at the construction about the profile controlling on the injection well which has 2-section or 3-section, the layered injection technique of 2-section with tubing-casing and 3-section with concentric string is investigated separately. Based on the actual formation section properties, relatively independent injecting channels are established from wellbore, and its technical proposal and corresponding tools are preceded. Now the technique has been successfully performed on 15 wells, meeting the requirements of the layered profile controlling by injecting different fluid system and displacement as well as different concentration to different layers. © (2012) Trans Tech Publications, Switzerland. (4 refs)
Main heading: Polymers
Controlled terms: Injection (oil wells) - Tubing - Wells
Uncontrolled terms: Fluid systems - Injection fluids - Injection techniques - Injection wells - Layered polymers - Lower shear - Pipe string - Polymer injection - Separate injection through tubing and casing - Study and applications - Technical proposals - Wellbore
Classification Code: 511.1 Oil Field Production Operations - 512.2 Natural Gas Deposits - 619.1 Pipe, Piping and Pipelines - 815.1 Polymeric Materials
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

19. The design of virtual signal generator

Min, Wei (1); Yan, Xie (1); Yu, Jia (2)
Source: *CSAE 2012 - Proceedings, 2012 IEEE International Conference on Computer Science and Automation Engineering*, v 1, p 7-9, 2012, *CSAE 2012 - Proceedings, 2012 IEEE International Conference on Computer Science and Automation Engineering*; **ISBN-13:** 9781467300865; **DOI:** 10.1109/CSAE.2012.6272537; **Article number:** 6272537; **Conference:** 2012 IEEE International Conference on Computer Science and Automation Engineering, CSAE 2012, May 25, 2012 - May 27, 2012; **Sponsor:** Central South University; et al.; Hunan University of Humanities, Science and Technology; IEEE Beijing Section; Tongji University; Xiamen University; **Publisher:** IEEE Computer Society
Author affiliation: (1) Xi'an Shiyou University, Key Laboratory of Photoelectric Logging and Detecting of Oil and Gas, Ministry of Education, Xi'an, China (2) Xi'an Micromotor Research Institute, Xi'an, China
Abstract: The traditional signal generator has the disadvantages of complex circuit structure, huge volume, poor stability and accuracy due to employ analog circuit technology. Compared with the traditional instruments, virtual instrument have no instrument panel. What's more PC powerful graphical environment and processing ability are used to establish graphical virtual instrument panel, which can complete instrument control, signal generation, data acquisition, data analysis and data display etc. In this paper, a virtual signal generator, which uses PC sound card instead of commercial data card, is designed based on virtual instrument special-purpose language LabVIEW. The signal generator, including signal produce module and sound output module, can produce sine wave, square wave, triangle wave and sawtooth wave. Frequency, amplitude and phase can be changed in a certain range according to necessary, and the sound card can also be used to output waveforms. © 2012 IEEE. (3 refs)
Main heading: Signal generators
Controlled terms: Signal analysis - Data acquisition - Digital instruments
Uncontrolled terms: Circuit technology - Graphical environments - Instrument control - LabViEW - Processing ability - Sound cards - Virtual instrument - Virtual instrument panel
Classification Code: 716.1 Information Theory and Signal Processing - 723.2 Data Processing and Image Processing
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

20. Design and implementation of university arrangement system based on the genetic algorithm

Min, Wei (1); Yan, Xie (1); Yu, Jia (2)

Source: *CSAE 2012 - Proceedings, 2012 IEEE International Conference on Computer Science and Automation Engineering*, v 3, p 591-594, 2012, *CSAE 2012 - Proceedings, 2012 IEEE International Conference on Computer Science and Automation Engineering*; **ISBN-13:** 9781467300865; **DOI:** 10.1109/CSAE.2012.6273022; **Article number:** 6273022; **Conference:** 2012 IEEE International Conference on Computer Science and Automation Engineering, CSAE 2012, May 25, 2012 - May 27, 2012; **Sponsor:** Central South University; et al.; Hunan University of Humanities, Science and Technology; IEEE Beijing Section; Tongji University; Xiamen University; **Publisher:** IEEE Computer Society
Author affiliation: (1) Xi'an Shiyou University, Key Laboratory of Photoelectric Logging and Detecting of Oil and Gas, Ministry of Education, Xi'an, China (2) Xi'an Micromotor Research Institute, Xi'an, China
Abstract: The university curriculum arrangement system, which includes teachers, classrooms, class, curriculum, time and many other factors, is both complex and key link in the universities educational management. The essence of the class arrangement system is that courses, teachers and students in the right time assign in the suitable classroom, which is a multi-objective scheduling, and complicated the combinatorial optimization problem involved many factors. In order to make sure that the course of classes can be arranged in the right time and right place, the university curriculum arrangement system is designed based on the genetic algorithm in this paper. The design scheme is presented in detail. It shows by practice that the genetic algorithm, which is of intelligence of search process, parallelism, and easy operation, could solve the class arrangement system effectively. © 2012 IEEE. (3 refs)
Main heading: Genetic algorithms
Controlled terms: Students - Curricula - Combinatorial optimization - Teaching
Uncontrolled terms: Arrangement System - Combinatorial optimization problems - Design and implementations - Design scheme - Educational management - Multi-objective scheduling - Search process - University curricula
Classification Code: 901.2 Education - 921.4 Combinatorial Mathematics, Includes Graph Theory, Set Theory - 921.5 Optimization Techniques
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

21. Clean synthesis of 2-arylideneindan-1,3-diones in water

Yang, Peng Hui (1); Zhang, Qun Zheng (1); Sun, Wei (2)
Source: *Research on Chemical Intermediates*, v 38, n 3-5, p 1063-1068, March 2012; **ISSN:** 09226168, **E-ISSN:** 15685675; **DOI:** 10.1007/s11164-011-0442-4; **Publisher:** Kluwer Academic Publishers
Author affiliation: (1) College of Chemistry and Chemical Engineering, Xi'An Shiyou University, Xi'an 710065, China (2) College of Chemistry and Chemical Materials, Northwest University, Xi'an 710069, China
Abstract: A high-yield synthesis of 2-arylideneindan-1,3-diones in water was achieved by the Knoevenagel condensation of indan-1,3-dione with aromatic aldehydes at ambient temperature avoiding the addition of any catalyst. The procedure is simple, efficient, as well as environmentally friendly. © Springer Science+Business Media B.V. 2011. (14 refs)
Main heading: Catalysts
Controlled terms: Synthesis (chemical)
Uncontrolled terms: Aromatic aldehyde - Arylideneindan-1,3-diones - Catalyst-free - Clean synthesis - High yield synthesis - Knoevenagel condensation
Classification Code: 802.2 Chemical Reactions - 803 Chemical Agents and Basic Industrial Chemicals - 804 Chemical Products Generally
Funding Details: Number: Z08012, Acronym: -, Sponsor: -; Number: 2010JK782, Acronym: -, Sponsor: Natural Science Foundation of Shaanxi Province;
Funding text: Acknowledgments This study was supported by the Natural Science Foundation of Education Bureau of Shaanxi Province, China (2010JK782) and Foundation of Xi’an Shiyou University (Z08012).
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

22. Experimental study of the factors influencing filtrate loss of the high-density brine drilling fluid

Zhang, Ming (1, 2); Li, Tiantai (2); Zhang, Xifeng (2)
Source: *Advanced Materials Research*, v 361-363, p 461-464, 2012, *Natural Resources and Sustainable Development*; **ISSN:** 10226680; **ISBN-13:** 9783037852682; **DOI:** 10.4028/www.scientific.net/AMR.361-363.461; **Conference:** 2011 International Conference on Energy, Environment and Sustainable Development, ICEESD 2011, October 21, 2011 - October 23, 2011; **Publisher:** Trans Tech Publications

Author affiliation: (1) College of Petroleum Engineering, China University of Petroleum, Changping, Beijing, 102249, China (2) College of Petroleum Engineering, Xi'an Shiyou University, Xi'an, Shaanxi, 710065, China
Abstract: High density brine drilling fluid has been widely applied in the high pressure and complex oil and gas fields. Effectively controlling high density brine drilling fluid loss is an important factor for reducing the reservoir damage and keeping well stability. Base on general drilling fluid formulations, the affecting factors of filtrate loss of high density brine drilling fluid were analysed through mass laboratory experiments. The results show that the main fctor was the content of caustic soda and bentonite, secondly the density and the shape of adding product. The combination of adding product is one of effective method to control the filtration property of high density brine drilling fluid. The results will provide reliable foundation for successful field application. © (2012) Trans Tech Publications, Switzerland. (8 refs)
Main heading: Drilling fluids
Controlled terms: Oil fields - Sodium hydroxide - Gas industry - Sustainable development - Natural gas fields
Uncontrolled terms: Affecting factors - Drilling fluid loss - Experimental studies - Field application - High density - High pressure - Laboratory experiments - Oil and gas fields - Reservoir damage
Classification Code: 512.1.1 Oil Fields - 512.2.1 Natural Gas Fields - 522 Gas Fuels - 804.2 Inorganic Compounds
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

23. Test study and application of fracturing stimulation technologies with liquid powder for low-permeability oil reservoir in FY block of Daqing Oilfield

Wu, Jinjun (1, 2); Chu, Xiaosan (1); Zhao, Guohua (1); Liu, Licai (1)
Source: *Advanced Materials Research*, v 361-363, p 499-504, 2012, *Natural Resources and Sustainable Development*; **ISSN:** 10226680; **ISBN-13:** 9783037852682; **DOI:** 10.4028/www.scientific.net/AMR.361-363.499; **Conference:** 2011 International Conference on Energy, Environment and Sustainable Development, ICEESD 2011, October 21, 2011 - October 23, 2011; **Publisher:** Trans Tech Publications
Author affiliation: (1) College of Petroleum Engineering, Xi'an Shiyou University, Xi'an, Shaanxi, 710065, China (2) Key Section of High Energy Gas Fracturing Key Laboratory Reservoir Stimulation, CNPC, Xi'an, Shaanxi, 710065, China
Abstract: To the present status and difficulties of complex oilfields, like low-permeability and ultralow-permeability reservoir, abnormally high formation pressure reservoir and formation vulnerability, liquid powder fracturing stimulation technology is tested in low-permeability oilfields. This paper introduced the study of the performance of liquid powder and process optimization, including the performance optimization experiment of liquid powder, formula optimization study of insulating liquid, design of the ignition process and optimization design of construction process. The loading rate of the optimal liquid powder increased significantly so as to meet the fracture of abnormally high-pressure formation. Its active mechanism and characteristics are also analyzed in this paper. In FY block of Daqing Oilfield, the application test of liquid powder fracturing was used in six vertical wells and a horizontal well called CP-2 well (for the first time), and good results have been observed. Combined with the tests, we carried out research and analysis. Field tests show that the liquid powder fracturing stimulation technology can achieve significant stimulation goals for low-permeability oil reservoir and offer a new technological method to low-permeability oil reservoir fracturing and development. © (2012) Trans Tech Publications, Switzerland. (4 refs)
Main heading: Liquids
Controlled terms: Horizontal wells - Petroleum reservoir engineering - Low permeability reservoirs - Oil field development - Optimization - Process design - Design
Uncontrolled terms: Active mechanism - Construction process - Daqing oilfields - Field test - Formation pressure - High-pressure formations - Ignition process - Insulating liquids - Liquid powder - Liquid powders - Loading rate - Low permeability - Oil reservoirs - Optimization design - Optimization studies - Performance optimizations - Present status - Research and analysis - Technological methods - Test study - Vertical wells
Classification Code: 512.1 Petroleum Deposits - 512.1.1 Oil Fields - 512.1.2 Petroleum Deposits : Development Operations - 921.5 Optimization Techniques
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

24. Improvement of evaluation methods for deep fluid diverting agents

Liu, Yifei (1, 2); Fang, Xiaodan (1, 2)
Source: *Advanced Materials Research*, v 402, p 666-670, 2012, *Advances in Metallurgical and Mining Engineering*; **ISSN:** 10226680; **ISBN-13:** 9783037853108; **DOI:** 10.4028/www.scientific.net/AMR.402.666; **Conference:** 2011 International Conference on Chemical, Material and Metallurgical Engineering, ICCMME 2011, December 23, 2011

- December 25, 2011; **Sponsor:** Guangxi University; Wuhan University of Science and Technology; Queensland University of Technology; **Publisher:** Trans Tech Publications
Author affiliation: (1) Xi'an Shiyou University, 710065, China (2) Western Low Permeability and Ultra-Low Permeability Reservoir Development and Treatment, Engineering Research Center of Ministry of Education, 710065, China
Abstract: The main oil fields in China have gone gradually into the high or extra-high water cut production period, and conventional profile control technologies already cannot meet oilfields' production requirements. The research and application of new fluid diverting technologies has got many new progresses, but their validity term is relatively short in the aspect of improving the high water cut oil reservoir. Based on the capillary bundle model, a comprehensive performance evaluation method of fluid diverting agents has been proposed, through systematical analysis of the fluid diverting agents evaluation methods at home and abroad and their existing problems, and all-sided understanding of the present reservoir situation. The experimental results showed that this method could effectively and comprehensively evaluate the fluid diverting agents' diverting effect, shear resistance performance, temperature resistance performance and salt resistance performance, and could optimize injection process parameters. It has the important and practical significance to improve the duty validity of the fluid diverting agents. (3 refs)
Main heading: Shear flow
Controlled terms: Petroleum reservoir engineering - Oil well flooding - Petroleum reservoirs
Uncontrolled terms: Comprehensive performance evaluation - Deep fluids - Evaluation Method - Existing problems - High water-cut - Injection process - Oil reservoirs - Production requirements - Profile control technology - Research and application - Salt resistance - Shear performance - Shear resistances - Systematical analysis - Temperature resistances - Water cuts
Classification Code: 511.1 Oil Field Production Operations - 512.1.1 Oil Fields - 512.1.2 Petroleum Deposits : Development Operations - 631.1 Fluid Flow, General
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

25. The application of Ball Vector Machine for image segmentation

Wang, Xuelong (1, 2); Cheng, Guojian (2); Zhang, Jing (1); Lei, Cai (2)
Source: *World Automation Congress Proceedings*, 2012, *2012 World Automation Congress, WAC 2012*; **ISSN:** 21544824, **E-ISSN:** 21544832; **ISBN-13:** 9781467344975; **Article number:** 6321049; **Conference:** 2012 World Automation Congress, WAC 2012, June 24, 2012 - June 28, 2012; **Publisher:** IEEE Computer Society
Author affiliation: (1) School of Computer Science and Engineering, Xi'An University of Technology, Xi'an 710048, China (2) School of Computer Science, Xi'An Shiyou University, Xi'an 710065, China
Abstract: Aimed at standard Support Vector Machine (SVM) having a high training complexity for image segmentation, a new method based on Ball Vector Machine (BVM) for image segmentation is proposed in this paper. The experimental results show that two methods for image segmentation have the same effect, but the training time of BVM is significantly lesser than that of SVM. It is verified and validated that BVM for image segmentation can significantly improve the performance of image segmentation. © 2012 TSI Press. (8 refs)
Main heading: Image segmentation
Controlled terms: Image enhancement - Support vector machines - Vectors
Uncontrolled terms: Ball vector machines - Minimum enclosing ball - Training complexity - Training time
Classification Code: 723 Computer Software, Data Handling and Applications - 921.1 Algebra
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

26. Similarity laws of distorted model with a movable bed and its validity

Wei, Bing-Qian (1); Xun, Hong-Yun (1); Xiao, Rong-Ge (1, 2); Meng, Wenqiang (1)
Source: *Advanced Materials Research*, v 383-390, p 4413-4423, 2012, *Manufacturing Science and Technology*; **ISSN:** 10226680; **ISBN-13:** 9783037852958; **DOI:** 10.4028/www.scientific.net/AMR.383-390.4413; **Conference:** 2011 International Conference on Manufacturing Science and Technology, ICMST 2011, September 16, 2011 - September 18, 2011; **Sponsor:** Singapore Institute of Electronics; **Publisher:** Trans Tech Publications
Author affiliation: (1) College of Hydraulic and Hydropower, Xi'an University of Technology, Xi'an, 710048, China (2) College of Oil and Gas Resources, Xi'an Shiyou University, Xi'an, 710065, China
Abstract: The theoretical backing of the similarity laws obtained from dual dimensionless parameters of the bed-form classification diagram is given by solving the equations of similarity conditions which is obtained from 1-dimensional equation of motion, continuity equation, bed deformation equation and the formula of bed load transport. Secondly,

the validity of the similarity laws is confirmed by comparing the bed form of distorted model experiment with that of undistorted model experiments performed by Hokkaido Development Bureau (H.D.B.). And also the fact that the height of bar in a gentle curved river channel can be estimated by the result of distorted model of straight flume is found. (11 refs)
Main heading: Equations of motion
Uncontrolled terms: Bed deformation - Bed forms - Bed materials - Bed-load transport - Continuity equations - Dimensionless parameters - Distorted mode - Equation of motion - Hokkaido - Model experiments - River bends - River channels - Similarity law
Classification Code: 921.2 Calculus
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

27. Effects of tempering temperature on microstructures and properties of X80 grade heat-bending bend

Zhang, Xiao-Yong (1); Tian, Chen-Chao (1); Gao, Hui-Lin (1); Liu, Ying-Lai (2); Zhang, Xue-Qin (2)
Source: *Cailiao Rechuli Xuebao/Transactions of Materials and Heat Treatment*, v 33, n 5, p 59-63, May 2012;
Language: Chinese; **ISSN:** 10096264; **Publisher:** Editorial Office of Transactions of Materials
Author affiliation: (1) School of Materials Science and Engineering, Xi'an Shiyou University, Xi'an 710055, China (2) Tubular Goods Research Center of China National Petroleum Corporation, Xi'an 710065, China
Abstract: Effects of tempering temperature on microstructure and properties of X80 grade heat bending bend were investigated by means of thermal simulation method, mechanical property tests and microstructure analysis. The results show that the strength does not increase favorably due to the enhanced lath widening and the weakening of precipitation strengthening within bainitic ferrite and granular bainite when tempering temperature is in the range of 550-650°C. While the toughness increment benefits from the change of dislocation substructure, the weakening of pinning effect of carbide and nitride of Nb, V and Ti on dislocation and subgrain, and the gradual decomposition of M-A constituent among the laths. When tempering temperature is increased to 700°C, further-enhanced lath widening, some recrystallization-led polygonal ferrite, and reduction of dislocation density lead to a rapid decrement of strength and toughness. In general, a much better combination of strength and toughness of X80 heat-bending bend can be obtained when the steel is tempered at 650°C for 1 h. (12 refs)
Main heading: Carbides
Controlled terms: Bainite - Bending tests - Ferrite - Microstructure - Tempering
Uncontrolled terms: Bainitic ferrite - Dislocation densities - Dislocation substructures - Granular bainites - Heat-bending bend - Microstructure analysis - Microstructure and properties - Microstructures and properties - Pinning effects - Polygonal ferrites - Precipitation strengthening - Property - Strength and toughness - Subgrains - Tempering temperature - Thermal simulations - X80 grade
Classification Code: 422 Strength of Building Materials; Test Equipment and Methods - 531.2 Metallography - 537.1 Heat Treatment Processes - 804.2 Inorganic Compounds - 812.1 Ceramics - 951 Materials Science
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

28. Predicting reservoir production based on wavelet analysis-neural network

Liu, Zhidi (1); Wang, Zhengguo (2); Wang, Chunyan (3)
Source: *Advances in Intelligent and Soft Computing*, v 168 AISC, n VOL. 1, p 535-539, 2012, *Advances in Computer Science and Information Engineering*; **ISSN:** 18675662; **ISBN-13:** 9783642301254; **DOI:** 10.1007/978-3-642-30126-1_84; **Conference:** Computer Science and Information Engineering, CSIE 2012, May 19, 2012 - May 20, 2012; **Sponsor:** Beijing Gireda Research Center; International Science and Education Researcher Association; VIP Information Conference Center; **Publisher:** Springer Verlag
Author affiliation: (1) School of Petroleum Resources, Xi'an Shiyou University, Xi'an, China (2) Trans-Asia Gas Pipeline Company Limited, Beijing, China (3) Exploration Department, Yanchang Oilfield Company, Yanchang, China
Abstract: During oil field development, production prediction is related to effectively develop oil reservoirs. In the process of prediction production commonly using modular dynamics testing (MDT), it will introduce larger error that MDT data is directly used to predict production. Considering this issue, the wavelet coefficients that are extracted from the MDT data using wavelet analysis method, then the neural network method is used for establishing production predicting model that use drill stem testing (DST) production and wavelet coefficients. The set of MDT production predicting method is applied to predict production in Karamay oil field. The results show that it can obtain good accuracy. © 2012 Springer-Verlag GmbH. (5 refs)

Main heading: Forecasting
Controlled terms: Oil field development - Neural networks - Oil well flooding - Wavelet analysis - Petroleum reservoirs - Petroleum reservoir engineering
Uncontrolled terms: Drill stem testing - Modular dynamics - Neural network method - Predicting method - Predicting models - Production prediction - Wavelet analysis method - Wavelet coefficients
Classification Code: 511.1 Oil Field Production Operations - 512.1.1 Oil Fields - 512.1.2 Petroleum Deposits : Development Operations - 921 Mathematics
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

29. Research of process management on drilling engineering collaborative design system based on workflow

Zhang, Bing (1, 2); Xiong, Jiyou (1); Liu, Zhikun (2); Bai, Yanwei (2); Li, Qi (2)
Source: *Proceedings - 2012 9th International Conference on Fuzzy Systems and Knowledge Discovery, FSKD 2012*, p 2769-2773, 2012, *Proceedings - 2012 9th International Conference on Fuzzy Systems and Knowledge Discovery, FSKD 2012*; **ISBN-13:** 9781467300223; **DOI:** 10.1109/FSKD.2012.6234118; **Article number:** 6234118; **Conference:** 2012 9th International Conference on Fuzzy Systems and Knowledge Discovery, FSKD 2012, May 29, 2012 - May 31, 2012; **Publisher:** IEEE Computer Society
Author affiliation: (1) State Key Lab of Oil and Gas Reservoir Geology and Exploitation, Southwest Petroleum University, Chengdu, China (2) Petroleum Engineering School, Xi'An SHIYOU University, Xi'an, China
Abstract: The drilling engineering design of a well needs collaborative work of designers from multidisciplinary fields such as geology, reservoir engineering and drilling engineering, or designers distributed in different departments. Because there is closely data relevance among every parts of the drilling engineering design which needs the designers in different departments to exchange a lot of data and documents according to a certain design process, any delay in parts of design process will affect the timeliness and accuracy of the whole drilling engineering design. The authors integrated workflow theory into process management of drilling engineering collaborative design system, built workflow management model of Drilling Engineering Collaborative Design System. The paper analyses function of the five sub-modules in this model in detail combining realization process of the system. So it provides an effective method for process management of Drilling Engineering Collaborative Design System, and improved actual operating efficiency of the system. © 2012 IEEE. (7 refs)
Main heading: Workflow management
Controlled terms: Design
Uncontrolled terms: Collaborative design - Collaborative design system - Drilling engineering - Drilling engineering design - Process management - Reservoir engineering - workflow - Workflow managements
Classification Code: 912.2 Management
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

30. Evidence of fluid inclusions for the hydrocarbon charging history of Ordovician reservoirs in Yingmaili low-uplift, northern Tarim Basin

Xiao, Hui (1); Zhao, Jingzhou (1); Yang, Haijun (2); Cai, Zhenzhong (2); Zhang, Lijuan (2); Zhu, Yongfeng (2)
Source: *Shiyou Xuebao/Acta Petrolei Sinica*, v 33, n 3, p 372-378, May 2012; **Language:** Chinese; **ISSN:** 02532697; **Publisher:** Science Press
Author affiliation: (1) School of Petroleum Resources, Xi'an Shiyou University, Xi'an 710065, China (2) Research Institute of Petroleum Exploration and Development, PetroChina Tarim Oilfield Company, Korla 841000, China
Abstract: Combined with analysis of thermoevolutionary burial history, we determined hydrocarbon charge phases of the YM1 and YM2 Ordovician oil reservoirs in the Yingmaili low-uplift of the Tarim Basin through microscopic observations of petrography, polarized-light and fluorescence as well as measurements of homogenization temperature and Fourier transform infrared spectroscopy (FTIR) on fluid inclusions. The result showed that four types of hydrocarbon inclusions were recognized and liquid hydrocarbon inclusions could be further divided into two subclasses: heavy-oil inclusions and medium-light oil inclusions based on their petrographic characteristics. The generation order of hydrocarbon inclusions was determined according to the relation between mineral diagenesis and distributions of hydrocarbon inclusions and the peak distributions of homogenization temperature ranged in 66.7~72.5°C and 86.4~95.3°C, respectively, suggesting the occurrence of two main phases for oil migration and accumulation. Characteristics of infrared spectra of oil inclusions and their calculated parameters indicated that the early charged oil with brown and yellow-brown fluorescent light had a relatively lower maturity while the late charged

oil with yellow-white to blue-green fluorescent light showed a relatively higher maturity. The early and late phases of hydrocarbon charge were determined to correspond to Late Caledonian and Late Hercynian, respectively, by reconstructing the thermal burial history of deposits in the Yingmaili low-uplift. Comprehensive analyses of reservoir bitumen and present oil density data implied that the reservoir degradation occurred mainly in Early Hercynian while a critical moment of the major petroleum charge emerged in Late Hercynian. (30 refs)
Main heading: Fourier transform infrared spectroscopy
Controlled terms: Crude oil - Fluorescence - Hydrocarbons - Fluid inclusion - Petroleum reservoir engineering - Petroleum reservoirs - Heavy oil production - Mineralogy - Petrography
Uncontrolled terms: Charge phase - Comprehensive analysis - Fluid inclusion - Homogenization temperatures - Microscopic observations - Petrographic characteristics - Tarim Basin - Yingmaili area
Classification Code: 481.1.2 Petrology (Before 1993, use code 482) - 482 Mineralogy - 511.1 Oil Field Production Operations - 512.1 Petroleum Deposits - 512.1.1 Oil Fields - 512.1.2 Petroleum Deposits : Development Operations - 631 Fluid Flow - 741.1 Light/Optics - 801 Chemistry - 804.1 Organic Compounds
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

31. Study on fiber Bragg grating acceleration sensing based on elastic tube

Liu, Qin-Peng (1); Qiao, Xue-Guang (1, 3); Zhao, Jian-Lin (1); Jia, Zhen-An (2); Fu, Hai-Wei (2); Gao, Hong (2)
Source: *Guangdianzi Jiguang/Journal of Optoelectronics Laser*, v 23, n 7, p 1227-1232, July 2012; **Language:** Chinese; **ISSN:** 10050086; **Publisher:** Board of Optronics Lasers
Author affiliation: (1) Shaanxi Key Laboratory of Optical Information Technology, Northwestern Polytechnical University, Xi'an 710072, China (2) Xi'an Shiyou University, Xi'an 710065, China (3) Northwest University, Xi'an 710069, China
Abstract: In order to realize acceleration measurement by fiber Bragg grating (FBG), a kind of two-spot fabrication FBG model based on elastic tube for acceleration sensing is proposed. First, the sensing principle of the model is analyzed theoretically, and the analytical formula of acceleration sensitivity is also established. By introducing the conception of ideal acceleration sensitivity, the response of acceleration sensitivity to frequency is analyzed and discussed. Second, the accelerometer based on the model is designed. The amplitude-frequency characteristics, resonance frequency and linear response of the FBG accelerometer are researched experimentally. Experimental results indicate that it has a good, flat and linear response at frequencies less than the resonance frequency: the linearity is 99.8%, the sensitivity is 63.0 pm/G, and the relative error is 0.98%. Analytical investigation agrees very well with experimental results. (18 refs)
Main heading: Fabrication
Controlled terms: Acceleration - Fiber Bragg gratings - Natural frequencies - Accelerometers
Uncontrolled terms: Acceleration sensing - Acceleration sensitivity - Amplitude frequency characteristics - Analytical formulas - Analytical investigations - Elastic tubes - Linear response - Model-based OPC - Relative errors - Resonance frequencies - Sensing principle
Classification Code: 943.1 Mechanical Instruments
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

32. Design of FBG acceleration sensor based on two-dot coating

Liu, Qin-Peng (1); Qiao, Xue-Guang (1, 3); Fu, Hai-Wei (2); Gao, Hong (3)
Source: *Guangxue Jingmi Gongcheng/Optics and Precision Engineering*, v 20, n 9, p 2110-2115, September 2012; **Language:** Chinese; **ISSN:** 1004924X; **DOI:** 10.3788/OPE.20122009.2110; **Publisher:** Chinese Academy of Sciences
Author affiliation: (1) Shanxi Key Laboratory of Optical Information Technology, Northwestern Polytechnical University, Xi'an 710072, China (2) Xi'an Shiyou University, Xi'an 710065, China (3) Northwest University, Xi'an 710069, China
Abstract: A Double-semicircle Cantilever Beam(DSCB) accelerometer based on a fiber Bragg grating (FBG) was proposed to measure the acceleration signals. Firstly, the model of FBG accelerometer based on the two-dot coating was established, and the linear response between acceleration and displacements of sensitive elements was analyzed theoretically. Then, the natural vibration of the FBG based two-dot coating was described, and the effects of the length and prestress of the coated fiber on natural vibration frequency were discussed. Finally, according to the natural vibration of FBG, the FBG accelerometer was designed, and the linear response, amplitude-frequency characteristics, and direction anti-interference of the FBG accelerometer were researched experimentally. Experimental results indicate that the sensor has good flat response from 10-250 Hz, and the sensitivity of the accelerometer is 41.2 pm/

G. Furthermore, the sensor can offer a good linear response in a linear fitting of 99.8% and a good cross-axis anti-interference ability in the cross-axis sensitivity less than 4.8%. (13 refs)
Main heading: Fiber Bragg gratings
Controlled terms: Accelerometers - Coatings
Uncontrolled terms: Acceleration sensing - Acceleration sensors - Acceleration signals - Amplitude frequency characteristics - Cross-axis sensitivity - Natural vibration - Natural vibration frequency - Two-dot coatings
Classification Code: 813.2 Coating Materials - 943.1 Mechanical Instruments
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

33. Dynamics and rotational movement analysis of servo platform for rotary steerable drilling system

Wang, Yuelong (1); Zhang, Lu (2); Tang, Nan (1); Huo, Aiqing (1); Cheng, Weibin (1)
Source: *Jixie Gongcheng Xuebao/Journal of Mechanical Engineering*, v 48, n 17, p 65-69, September 5, 2012;
Language: Chinese; **ISSN:** 05776686; **DOI:** 10.3901/JME.2012.12.065; **Publisher:** Chinese Mechanical Engineering Society
Author affiliation: (1) Shaanxi Key Laboratory of Oil-drilling Rigs Controlling Technique, Xi'an Shiyou University, Xi'an 710065, China (2) AVIC Shaanxi Aero Electric Co., Ltd, Xingping 713107, China
Abstract: It is not an easy job to control a cylindrical and rotatable servo platform at a special angle for a push-the-bit rotary steerable drilling system while it is acted by complex applied torque. A nonlinear dynamic model is established which considers such complex torque as friction, hydraulic shock, quality distribution eccentricity, installation error eccentricity and turbine motor electromagnetic torque, etc. The regular pattern of rotational movement about this platform is obtained under no torque and complex applied torque based on simulation of this model, which relates to platform structure and torque parameters. A hydraulic driving torque test is carried out, which indicates that dynamics analysis is reasonable. Some improvement suggestions of structure design are presented. (14 refs)
Main heading: Torque
Controlled terms: Hydraulic motors - Rotating machinery - Dynamic models
Uncontrolled terms: Electromagnetic torques - Installation error - Movement Simulation - Quality distribution - Rotary-steerable drilling - Rotational movement - Servo platforms - Torque analysis
Classification Code: 601.1 Mechanical Devices - 632.2 Hydraulic Equipment and Machinery - 921 Mathematics - 931.2 Physical Properties of Gases, Liquids and Solids
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

34. The present situation and future development of electric vehicles in China

Wei, Min (1); Xie, Yan (1); Jia, Yu (2)
Source: *Advanced Materials Research*, v 490-495, p 751-755, 2012, *Mechatronics and Intelligent Materials II*;
ISSN: 10226680; **ISBN-13:** 9783037853849; **DOI:** 10.4028/www.scientific.net/AMR.490-495.751; **Conference:** 2nd International Conference on Mechatronics and Intelligent Materials 2012, MIM 2012, May 18, 2012 - May 19, 2012;
Publisher: Trans Tech Publications
Author affiliation: (1) Xi'an Shiyou University, Key Laboratory of Photoelectric Logging and Detecting of Oil and Gas, Ministry of Education, China (2) Xi'an Micromotor Research Institute, Xi'an, China
Abstract: As the represent of the new energy vehicles, electric vehicles dominate an irreplaceable position in solving energy crisis and protecting the environment. And some developed countries are investing heavily in the research and development of electric vehicles. In this paper, the domestic conditions of electric vehicles are introduced. And many topics about electric vehicle such as the prospect, industrial policies, key technologies and domestic charging network are further analyzed. Some thinking and suggestions relating to the development of electric vehicles are put forward at last. © (2012) Trans Tech Publications, Switzerland. (3 refs)
Main heading: Electric vehicles
Controlled terms: Charging (batteries) - Energy policy
Uncontrolled terms: Developed countries - Energy crisis - Industrial policies - Key technologies - New energy vehicles - Present situation - Research and development - Strategy planning
Classification Code: 525.6 Energy Policy - 702.1.2 Secondary Batteries
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

35. Evaluation of drag reduction agent used in oil pipeline transportation

He, Zhi-Wu (1); Li, Ning-Jun (1); Zhang, Zhen-Yun (1); Yang, Hui-Li (1); Wei, Ai-Jun (2)
Source: *Applied Mechanics and Materials*, v 217-219, p 153-156, 2012, *Advanced Materials and Process Technology*; **ISSN:** 16609336, **E-ISSN:** 16627482; **ISBN-13:** 9783037855027; **DOI:** 10.4028/www.scientific.net/AMM.217-219.153; **Conference:** 2nd International Conference on Advanced Design and Manufacturing Engineering, ADME 2012, August 16, 2012 - August 18, 2012; **Publisher:** Trans Tech Publications
Author affiliation: (1) Oil and Gas Technology Research Institute Changqing Oilfield Company, Xi'an 710021, China (2) Provincial Key Laboratory Of Unusual Well Stimulation, Xi'an Shiyou university, Xi'an710065, China
Abstract: This article describes the principles and methods of evaluating DRA in the lab, then evaluate the effect of DRA in the lab by designing a DRA test loop. This is measure that thoes DRA difference concentration be provided with flow increase rate and Drag reduction rate in test loop. © (2012) Trans Tech Publications, Switzerland. (3 refs)
Main heading: Drag reduction
Controlled terms: Petroleum transportation
Uncontrolled terms: Drag-reduction agents - Drag-reduction rate - Flow increase rate - Oil pipelines
Classification Code: 408 Structural Design - 651.1 Aerodynamics, General
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

36. A study on the mechanism of harmless and resourceful treatment of oil sludge with microwave

Jiang, Huayi (1); Wang, Xu (1); Wei, Aijun (1); Zheng, Sijia (1); Liu, Fang (1); Ji, Cheng (1)
Source: *Advanced Materials Research*, v 356-360, p 1831-1834, 2012, *Progress in Environmental Science and Engineering*; **ISSN:** 10226680; **ISBN-13:** 9783037852675; **DOI:** 10.4028/www.scientific.net/AMR.356-360.1831; **Conference:** 2011 International Conference on Energy, Environment and Sustainable Development, ICEESD 2011, October 21, 2011 - October 23, 2011; **Publisher:** Trans Tech Publications
Author affiliation: (1) College of Petroleum Engineering, Xi'An Petroleum University, Xi'an 710065, China
Abstract: Through comparative experiments of products that treated by microwave, researched on the feasibility of disposing oil sludge with microwave technology, analyzed the influence of different microwave parameters (power of microwave and microwave effect time) on the treatment effect, and theoretically analyzed the mechanism of harmless and resourceful treatment of oil sludge with microwave. The experimental and theoretical studies have shown that, microwave radiation has the characteristic of quickly and efficiently, energy conservation and environmental protection, and superior to traditional heating treatment technology. Microwave thermal effect and non-thermal effect can make heavy hydrocarbon cracking, speed up the process of oil sludge separation for gas phase, liquid phase, and solid phase, and achieve the oil sludge harmless and resourceful treatment. © (2012) Trans Tech Publications, Switzerland. (4 refs)
Main heading: Microwaves
Controlled terms: Microwave devices - Environmental technology - Cracks
Uncontrolled terms: Comparative experiments - Gasphase - Harmless - Heavy hydrocarbons - Liquid Phase - Microwave effects - Microwave parameters - Microwave technology - Non thermal effect - Oil sludge - Resourceful treatment - Solid-phase - Speed-ups - Theoretical study - Traditional heating - Treatment effects
Classification Code: 454 Environmental Engineering - 711 Electromagnetic Waves
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

37. Robustness optimization of decision parameters in process industry based on response surface modeling of neural network

Li, Tai-Fu (1); Liao, Zhi-Qiang (2); Yi, Jun (1); Gu, Xiao-Hua (1); Xiao, Da-Zhi (1)
Source: *Nanjing Li Gong Daxue Xuebao/Journal of Nanjing University of Science and Technology*, v 36, n SUPPL.1, p 265-271, June 2012; **Language:** Chinese; **ISSN:** 10059830; **Publisher:** Nanjing University of Science and Technology
Author affiliation: (1) Department of Electrical and Information Engineering, Chongqing University of Science and Technology, Chongqing 401331, China (2) College of Electronic Engineering, Xi'an Shiyou University, Xi'an 710065, China
Abstract: In the modeling and optimization of process industry, the actual decision parameters may be uncertain. It may make the quality, cost and energy consumption fail to get ideal control. In this paper, a novel approach to

optimize robustness decision parameters in process industry based on response surface modeling of neural network is proposed. Firstly, this paper uses neural networks algorithm to obtain mapping relation between decision parameters and performance index in process industry. In order to obtain excellent and stable quality index, its variance has also been regarded as objective function. In this way, a robustness optimization model about decision parameters are built based on response surface modeling of neural network. To effectively search the global optimal robustness decision parameters, process quality index and its variance are both represented into desirability function, respectively. A weighted geometric method is applied, and multiple objective problems are transformed into single objective optimization, i. e., overall desirability function. The desirability function is applied as fitness function of genetic algorithm to optimize decision parameters. The result from the verification in hydrogen cyanide process industry shows that the quality index and its stability from the suggested robustness optimization methodology are much superior to conventional solutions when decision parameters are disturbed by uncertain factors. The most important contribution of this paper is that a novel approach to search robustness optimal decision parameters in the process industry is suggested. (10 refs)
Main heading: Genetic algorithms
Controlled terms: Parameter estimation - Surface properties - Uncertainty analysis - Quality assurance - Energy utilization
Uncontrolled terms: Decision parameters - Modeling and optimization - Multiple objective problems - Neural networks algorithms - Process industries - Response surface modeling - Robustness optimizations - Single objective optimization
Classification Code: 525.3 Energy Utilization - 913.3 Quality Assurance and Control - 922.1 Probability Theory - 931.2 Physical Properties of Gases, Liquids and Solids - 951 Materials Science
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

38. Development of a phenomenological method for description of crack initiation behavior under thermo-mechanical fatigue loading

Cui, Lu (1, 2); Wang, Peng (2)
Source: *Advanced Materials Research*, v 415-417, p 986-989, 2012, *Advanced Materials*; **ISSN:** 10226680; **ISBN-13:** 9783037853252; **DOI:** 10.4028/www.scientific.net/AMR.415-417.986; **Conference:** 2nd International Conference on Advances in Materials and Manufacturing Processes, ICAMMP 2011, December 16, 2011 - December 18, 2011; **Sponsor:** University of Wollongong; Northeastern University; University of Science and Technology Beijing; Hebei Polytechnic University; **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Mechanical Engineering, Xi'an Shiyou University, Dianzi Erlu 18, 710065 Xi'an, Shaanxi, China (2) Institut Für Werkstoffkunde, Technische Universität Darmstadt, Grafenstrasse 2, 64283 Darmstadt, Germany
Abstract: Description of crack initiation behavior under thermo-mechanical fatigue (TMF) of modern high chromium steel is prerequisite for design optimization of steam turbine components. In this paper a phenomenological method which envelopes the synthesis of stress-strain hysteresis loops according to cycle counting methods and the individual assessment of creep fatigue damage is extended to TMF with superimposed creep. Recalculation of such service-type experiments on specimen of rotor steel 10CrMoWVNbN shows acceptable results for deformation description and lifetime estimation. (7 refs)
Main heading: Crack initiation
Controlled terms: Niobium alloys - Chromium alloys - Fatigue damage - Damage detection - Creep - Ternary alloys - Steam turbines
Uncontrolled terms: 10CrMoWV - Creep fatigue - Lifetime - Service-type - Thermomechanical fatigue
Classification Code: 543.1 Chromium and Alloys - 549.3 Nonferrous Metals and Alloys excluding Alkali and Alkaline Earth Metals - 617.2 Steam Turbines - 951 Materials Science
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

39. Lifetime prediction of steam turbine components under multiaxial thermo-mechanical fatigue loading

Cui, Lu (1, 2); Wang, Peng (2)
Source: *Applied Mechanics and Materials*, v 151, p 255-259, 2012, *New Trends in Mechatronics and Materials Engineering*; **ISSN:** 16609336, **E-ISSN:** 16627482; **ISBN-13:** 9783037853504; **DOI:** 10.4028/www.scientific.net/AMM.151.255; **Conference:** 2011 International Conference on Mechatronics and Materials Engineering, ICMME 2011,

December 10, 2011 - December 12, 2011; **Sponsor:** Qiqihar University, School of Mechatronics Engineering; Institute of Electronic and Information Technology; **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Mechanical Engineering, Xi'an Shiyou University, Dianzi Erlu 18#, 710065, Xi'an, Shaanxi, China (2) Institut für Werkstoffkunde, Technische Universität Darmstadt, Grafenstrasse 2, 64283 Darmstadt, Germany
Abstract: Lifetime prediction of steam turbine components under biaxial thermo-mechanical fatigue (TMF) loading of modern high chromium steel is prerequisite for design optimization. In this paper a phenomenological method which envelopes the synthesis of stress strain hysteresis loops and damage assessment under considering creep fatigue interaction is extended to multiaxial loadings. It is proposed as a post processing step depending on the results of a preceding finite element analysis based on a constitutive material model. Recalculation of biaxial service-type experiments on cruciform specimen of modern high chromium rotor steel 10CrMoWVNbN shows satisfactory results for lifetime estimation. © (2012) Trans Tech Publications, Switzerland. (12 refs)
Main heading: Steam turbines
Controlled terms: Niobium alloys - Chromium alloys - Creep - Turbine components - Damage detection - Finite element method
Uncontrolled terms: 10CrMoWVNbN - Biaxial - Creep fatigue - Cruciform specimen - Lifetime - Service-type - Thermo-mechanical
Classification Code: 543.1 Chromium and Alloys - 549.3 Nonferrous Metals and Alloys excluding Alkali and Alkaline Earth Metals - 617 Turbines and Steam Turbines - 617.2 Steam Turbines - 921.6 Numerical Methods - 951 Materials Science
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

40. Image segmentation based on ball vector machine

Wu, Wenhai (1); Pan, Huaxian (2); An, Yao (3); Cheng, Guojian (3)
Source: *Proceedings - 2012 International Conference on Computer Science and Service System, CSSS 2012*, p 2285-2288, 2012, *Proceedings - 2012 International Conference on Computer Science and Service System, CSSS 2012*; **ISBN-13:** 9780769547190; **DOI:** 10.1109/CSSS.2012.567; **Article number:** 6394885; **Conference:** 2012 International Conference on Computer Science and Service System, CSSS 2012, August 11, 2012 - August 13, 2012; **Sponsor:** et al.; IEEE Computer Cociety of Jiangsu Province; Nanjing University; Nanjing University of Science and Technology; Sichuan University; Zhejiang University; **Publisher:** IEEE Computer Society
Author affiliation: (1) Xi'An Electric Power College, Shaanxi, Xi'an, 710032, China (2) Xingzhi Colleg, Xi'An University of Finance and Economics, Xi'an, China (3) School of Computer Science, Xi'An Shiyou University, Xi'an, China
Abstract: Owing to the large scale of multi-dimensional datasets in image processing, the standard Support Vector Machine (SVM) has a high time complexity in the training process for image segmentation. A new machine learning method, Ball Vector Machine (BVM) is used for image segmentation in order to reduce the training time in this paper. The experimental results show that BVM has a similar segmentation effect and noise immunity performance compared to standard SVM for image segmentation in the condition of corrupted and none-corrupted. However, BVM consumes significantly lesser training time than the standard SVM. BVM can greatly improve the overall performance of image segmentation. © 2012 IEEE. (8 refs)
Main heading: Image segmentation
Controlled terms: Image enhancement - Support vector machines - Vectors
Uncontrolled terms: Ball vector machines - Machine learning methods - Minimum enclosed ball - Multi-dimensional datasets - Noise immunity - Time complexity - Training process - Training time
Classification Code: 723 Computer Software, Data Handling and Applications - 921.1 Algebra
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

41. Evolution pattern for service evolution in clouds

Wang, Zhe (1); Liu, Xiaodong (1); Chalmers, Kevin (1); Cheng, Guojian (2)
Source: *2012 International Conference for Internet Technology and Secured Transactions, ICITST 2012*, p 704-709, 2012, *2012 International Conference for Internet Technology and Secured Transactions, ICITST 2012*; **ISBN-13:** 9781908320087; **Article number:** 6470908; **Conference:** 7th International Conference for Internet Technology and Secured Transactions, ICITST 2012, December 10, 2012 - December 12, 2012; **Sponsor:** IEEE UK/RI Computer Chapter; Infonomics Society; **Publisher:** IEEE Computer Society

Author affiliation: (1) School of Computing, Edinburgh Napier University, EH10 5DT, Edinburgh, United Kingdom (2) School of Computer Science, Xi'an Shiyou (Petroleum) University, DianZi 2nd Road 18, Xi'an, China
Abstract: The proposed research will focus on developing a novel approach to solve Software Service Evolution problems in Computing Clouds. The approach will support dynamic evolution of the software service in clouds via a set of discovered evolution patterns. An initial survey informed us that such an approach does not exist yet and is in urgent need. Pattern will be categorised into five groups in order to solve different kinds of evolution problems, such as SaaS dependency dealing, SaaS structure transformation, SaaS evolvability enhancement, SaaS system dynamic enhancement and SaaS function enhancement. It contains dynamic process and static details. Evolution mechanism will be used for driven the evolution pattern into execution; both mechanism and pattern are corresponded with each other. After the pattern design is finished, the whole approach will have these contributions: 1) the synergistic pattern-driven framework for cloud service evolution; 2) a repository of evolution patters for cloud services (mainly for SaaS); 3) the formal specification of the evolution patterns; 4) the mechanism to apply the patterns to cloud service evolution at run time: driving the evolution, monitoring the process, and verifying the correctness; 5) the resultant prototype tool. Both dynamic and static description of the evolution pattern has been given in the paper. © 2012 Infonomics Society. (7 refs)
Main heading: Dynamics
Controlled terms: Software as a service (SaaS) - Distributed database systems
Uncontrolled terms: Computing clouds - Dynamic evolution - Evolution mechanism - Evolution patterns - Evolution problem - Service evolutions - Software services - Structure transformations
Classification Code: 722.4 Digital Computers and Systems - 723.3 Database Systems
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

42. Study on the fuzzy synthetic evaluation for pumping units in low permeability oilfield

Wei, Hangxin (1); Tong, Yubin (2); Wu, Shasha (3); Wu, Wei (1); Xu, Jianning (1)
Source: *Advanced Materials Research*, v 524-527, p 1279-1283, 2012, *Natural Resources and Sustainable Development II*; **ISSN:** 10226680; **ISBN-13:** 9783037854174; **DOI:** 10.4028/www.scientific.net/AMR.524-527.1279; **Conference:** 1st International Conference on Energy and Environmental Protection, ICEEP 2012, June 23, 2012 - June 24, 2012; **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Mechanical Engineering, Xi'an ShiYou University, Xi'an 710065, China (2) Department of Mechanical Engineering, Yantai Vocational College, Yantai 264000, China (3) Xi'an Conmunication College, Xi'an 710106, China
Abstract: In order to decrease the purchasing cost of pumping units and select the proper type of pumping units, the synthetic evaluation for pumping units based on fuzzy theory is studied. Firstly, the primary evaluation index and secondary evaluation index are built according to the oil and gas industry standard, and absolute comparison and relative comparison are also introduced. Then, the fuzzy weight factors of each evaluation index are determined and the fuzzy matrix operation for pumping units is made. Finally, the evaluation example for three pumping units is done to verify the correction and rationality of the method in this paper. © (2012) Trans Tech Publications. (5 refs)
Main heading: Gas industry
Controlled terms: Oil fields - Pumping plants - Pumps
Uncontrolled terms: Economic indexes - Evaluation example - Evaluation index - Fuzzy - Fuzzy matrix - Fuzzy synthetic evaluation - Fuzzy theory - Fuzzy weight - Low permeability - Oil and Gas Industry - Primary evaluation - Pumping unit - Purchasing costs - Synthetic evaluation
Classification Code: 446 Waterworks - 512.1.1 Oil Fields - 522 Gas Fuels - 618.2 Pumps
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

43. Measurement of loads on well testing tubing strings and stress analysis

Cao, Yinping (1); Zhang, Fuxiang (2); Chen, Rong (3); Dou, Yihua (1)
Source: *Advanced Materials Research*, v 503-504, p 1679-1682, 2012, *Frontiers of Manufacturing Science and Measuring Technology II*; **ISSN:** 10226680; **ISBN-13:** 9783037854044; **DOI:** 10.4028/www.scientific.net/AMR.503-504.1679; **Conference:** 2012 2nd International Conference on Frontiers of Manufacturing Science and Measuring Technology, ICFMM 2012, June 12, 2012 - June 13, 2012; **Sponsor:** Control Engineering and Information Science Research Association; Int. Front. Sci. Technol. Res. Assoc.; Trans Tech Publications; Chin-Yi University of Technology; **Publisher:** Trans Tech Publications

Author affiliation: (1) Xi'an Shiyou University, Xi'an, Shaanxi, 710065, China (2) Tarim Oilfield Company, CNPC, Korla, Xinjiang, 841000, China (3) Research Institute Petroleum Explore and Development of CNPC, Beijing, 100083, China
Abstract: To get working loads for analysis of strength safety of well testing tubing strings, providing references to combine tubing strings and select operation parameters, the working loads of tubing string were measured by self-made load measurement device for down-hole tubular strings and the stresses of tubing strings with measured load were analyzed with ANSYS. The dynamic response and strength of tubing strings exerted by varied pressures and weight were analyzed, taking wellhead and packer as fixed constraints. It was found that the maximum stress would vary sharply around the baseline with radial acceleration and increase as much as 37% if the acceleration is 0.38g. © (2012) Trans Tech Publications. (6 refs)
Main heading: Stress analysis
Controlled terms: Safety testing - Tubing - Load testing - Well testing
Uncontrolled terms: Load measurements - Loads - Maximum stress - Operation parameters - Radial acceleration - Tubing string - Tubular strings - Working loads
Classification Code: 619.1 Pipe, Piping and Pipelines - 914.1 Accidents and Accident Prevention - 951 Materials Science
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

44. Numerical investigation on the urban heat island in an entire city with an urban porous media model

Hu, Zhangbao (1); Yu, Bingfeng (1); Chen, Zhi (2); Li, Tiantian (1); Liu, Min (1)
Source: *Atmospheric Environment*, v 47, p 509-518, February 2012; **ISSN:** 13522310, **E-ISSN:** 18732844; **DOI:** 10.1016/j.atmosenv.2011.09.064; **Publisher:** Elsevier Ltd
Author affiliation: (1) School of Energy and Power Engineering, Xi'an Jiaotong University, 28, Xianning West Road, Xi'an 710049, China (2) School of Petroleum Engineering, Xi'an Shiyou University, Xi'an 710065, China
Abstract: This paper considers a city to be the porous media with internal heat sources and derives a porous media model for the turbulent flow and heat transfer in the city. The presented model may be an appropriate method for the numerical study of the urban heat island (UHI) in an entire city with appropriate spatial resolution and computing capacity. We proposed a method to convert the building heat source intensity based on ground surface area into that based on building volume. With the method, the heat flux of the building heat source can be consistent with the building density. We adopted the single domain approach to account for the interface conditions and used the spatial distribution of the porosity to define the parameters in the porous urban region and the clear fluid region. The urban porous media model was verified by comparing its numerical results with the volume-averaged results of the micro-scale model. Moreover, the urban porous media model was applied to examine the effects of urban anthropogenic heat and wind speed on the spatial UHI of the urban area and the leeward rural area. The results showed that an increase in anthropogenic heat intensity by 100Wm-2 led to an increase in UHI intensity by 1.683K. The increase in wind speed had a prominent mitigation effect on the UHI at a lower wind speed, but the decrease rate of UHI intensity decreased as the wind speed increased. The UHI intensity decreased as the height increased and the UHI almost vanished as the height reached five times the height of the urban canopy. The UHI intensity decreased rapidly as the airflow entered the leeward rural area, but the UHI still existed at a distance of 5km from the urban area. © 2011 Elsevier Ltd. (42 refs)
Main heading: Porous materials
Controlled terms: Atmospheric temperature - Heat transfer - Rural areas - Speed - Numerical models - Heat flux - Numerical methods - Wind speed
Uncontrolled terms: Anthropogenic heat - Flow and heat transfer - Interface conditions - Internal heat source - Numerical investigations - Simulation - Urban heat island - Wind speed
Classification Code: 443.1 Atmospheric Properties - 615.8 Wind Power (Before 1993, use code 611) - 641.2 Heat Transfer - 921 Mathematics - 921.6 Numerical Methods - 951 Materials Science
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

45. Microwave hydrothermal synthesis and characterization of ZnO nanostructures in aqueous solution

Guo, Li-Tong (1); Wu, Jing (1); Guo, Li-Zhi (2); Zhu, Ya-Bo (1); Xu, Cheng (1); Qiang, Ying-Huai (1)
Source: *Journal of Shanghai Jiaotong University (Science)*, v 17, n 6, p 734-737, December 2012; **ISSN:** 10071172, **E-ISSN:** 19958188; **DOI:** 10.1007/s12204-012-1355-0; **Publisher:** Shanghai Jiaotong University

Author affiliation: (1) School of Materials Science and Engineering, China University of Mining and Technology, Xuzhou 221116, Jiangsu, China (2) School of Electronic Engineering, Xi'an Shiyou University, Xi'an 710065, China
Abstract: ZnO nanostructures were prepared in aqueous solution by microwave hydrothermal synthesis. X-ray diffraction (XRD) and field emission scanning electron microscopy (FESEM) were used to characterize ZnO nanostructures (ZNs). The effects of pH, reaction temperature and reaction time on yield of ZnO were investigated. The yield of ZnO increased significantly with the increase of pH value, reaction temperature and reaction time. High yield and well crystallinity of ZNs could be obtained at 120°C for 60 min by microwave hydrothermal synthesis. The spherical and rugby-like ZNs were obtained at 120°C without triethanolamine (TEA) and with TEA (mass ratio, r = mZn2+: m TEA = 1: 1), respectively. The concentration of Zn(OH) 42- ions in the reaction solution and TEA had an important effect on the nucleation and morphology of ZnO nanostructures. Mechanism for the formation of ZnO nanostructures was proposed. © Shanghai Jiaotong University and Springer-Verlag Berlin Heidelberg 2012. (16 refs)
Main heading: Zinc oxide
Controlled terms: Hydrothermal synthesis - Scanning electron microscopy - Solutions - II-VI semiconductors - Nanostructures - X ray diffraction - Field emission microscopes - Microwaves - Zinc sulfide
Uncontrolled terms: Field emission scanning electron microscopy - High yield - Microwave hydrothermal - Microwave hydrothermal synthesis - Reaction solutions - Reaction temperature - Triethanolamines - ZnO nanostructures
Classification Code: 711 Electromagnetic Waves - 712.1 Semiconducting Materials - 741.3 Optical Devices and Systems - 761 Nanotechnology - 802.2 Chemical Reactions - 804.2 Inorganic Compounds - 933 Solid State Physics
Funding Details: Number: 2012QNA04, Acronym: -, Sponsor: Fundamental Research Funds for the Central Universities; Number: 81100789, Acronym: -, Sponsor: National Natural Science Foundation of China;
Funding text: Received date: 2012-08-03 Foundation item: the National Natural Science Founda-tion of China (No. 81100789) and the Fundamental Research Funds for the Central Universities of China (No. 2012QNA04) #E-mail: guolitong810104@163.com
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

46. Modeling and Evaluation of Oilfield Fluid Processing Schemes

Zhang, Jie (1); Jeje, Ayodeji A. (2); Chen, Gang (1); Cheng, Haiying (3); You, Yuan (4); Li, Shugang (5)
Source: *Sour Gas and Related Technologies*, p 247-260, September 19, 2012; **ISBN-13:** 9780470948149; **DOI:** 10.1002/9781118511138.ch16; **Publisher:** John Wiley and Sons
Author affiliation: (1) Xi'an Shiyou University, Xi'an, China (2) University of Calgary, Calgary, Canada (3) Dagang Oilfield Company, PetroChina, Tianjing, China (4) Changqing Oilfield Company, PetroChina, Xi'an, China (5) CNOOC Energy Technology and Services Ltd., Tianjing, China
Abstract: Oilfield fluids, that is, produced water, water-based mud, and gas cut mud, were processed in a continuous-flow, closed-loop test facility, with controlled addition of chemicals. Chemicals were added to treat the liquid and suspension streams before discharge into ambient, or before re-circulation in drilling operations. The facility was designed and constructed to evaluate the effect of varying chemical dosages and mixing schemes. The system was also analyzed to identify important operating parameters for effective treatment of the streams. Since chemical reactions occur from the point of injection of chemicals, both the kinetics of reaction and the flow rates determine optimal relations between the flow patterns in process units and the compositions of the oilfield fluids at discharge or re-circulation points. Prescriptions for the type of chemical additives, and the process conditions for their application, are suggested to optimize the system performance. Continuous processing removes reliance on periodic laboratory tests of samples of oilfield fluids to determine how to adjust the operating conditions in treating the streams. The risk of secondary pollution is reduced by controlled application of chemicals of the proper type, and at optimal dosages. © 2012 Scrivener Publishing LLC. (8 refs)
Main heading: Indicators (chemical)
Controlled terms: Reaction rates - Additives - Oil fields
Uncontrolled terms: Continuous flows - Continuous processing - Drilling operation - Evaluation method - Oilfield chemicals - Operating condition - Operating parameters - Secondary pollution
Classification Code: 512.1.1 Oil Fields - 801 Chemistry - 802.2 Chemical Reactions - 803 Chemical Agents and Basic Industrial Chemicals - 804 Chemical Products Generally
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

47. Seismic geomorphology and main controls of deep-water gravity flow sedimentary process on the slope of the northern South China Sea

Li, Lei (1); Wang, Ying Min (2); Xu, Qiang (3); Zhao, Jing Zhou (1); Li, Dong (3)
Source: *Science China Earth Sciences*, v 55, n 5, p 747-757, May 2012; **ISSN:** 16747313; **DOI:** 10.1007/s11430-012-4396-1; **Publisher:** Science in China Press
Author affiliation: (1) School of Petroleum Resources, Xi'an Shiyou University, Xi'an 710065, China (2) College of Geosciences, China University of Petroleum, Beijing 102249, China (3) CNOOC Research Institute, Beijing 100027, China
Abstract: The Quaternary continental slope of the Baiyun Sag in northern South China Sea is characterized by a complex topography and abundant gravity flow sedimentation. High-resolution 3-D seismic data in this area allow for a detailed study of the seismic geomorphology and deep-water gravity flow depositional process. The Quaternary continental slope in the northern South China Sea is an above-graded slope. An intraslope basin lies within the above-grade continental slope. Slump, erosion, and deposition processes tend to develop a gentle topography and consequently a graded slope. The upper continental slope, which is above the slope equilibrium profile, is dominated by erosion and slumping. Slides, slumps and erosional channels are developed within this continental slope. The intraslope basin is located below the slope equilibrium profile and is potential accommodation space where sediments transported by gravity flows could be deposited, forming lobe aprons. Under the influence of gravity flow supply, gravity flow duration, continental slope topography, equilibrium profile, and accommodation, a slump-erosional channel-lobe depositional system is developed in the Quaternary continental slope in the Baiyun Sag. The deep-water gravity flow depositional process and the distribution of gravity flow sediments are greatly influenced by the continental slope topography, while the continental slope topography at the same time is reshaped by deep-water gravity flow depositional process and its products. The study of the interplay between the continental slope and gravity flow is helpful in predicting the distribution of the deep-water gravity flow sediments and the variation of sediment quality. © 2012 Science China Press and Springer-Verlag Berlin Heidelberg. (27 refs)
Main heading: Topography
Controlled terms: Seismology - Erosion - Sedimentology - Landforms - Deposition - Geomorphology - Sediments
Uncontrolled terms: Deep Water - Gravity flows - Sedimentary process - Seismic geomorphology - South China sea
Classification Code: 481.1 Geology - 481.1.1 Geomorphology - 483 Soil Mechanics and Foundations - 484.1 Earthquake Measurements and Analysis - 802.3 Chemical Operations - 951 Materials Science
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Database: Compendex
Data Provider: Engineering Village
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48. Experimental study of two-phase flow instability of vertical parallel rifled tube with different sizes at low-mass flow rate

Deng, Zhian (1, 2); Luo, Yushan (1); Wang, Haijun (1); Chen, Tingkuan (1)
Source: *Asia-Pacific Journal of Chemical Engineering*, v 7, n 5, p 687-697, September-October 2012; **ISSN:** 19322135, **E-ISSN:** 19322143; **DOI:** 10.1002/apj.619; **Publisher:** John Wiley and Sons Ltd
Author affiliation: (1) State Key Laboratory of Multiphase Flow in Power Engineering, Xi'An Jiaotong University, No. 28 Xianning Road, Xian, China (2) Xi'An Shiyou University, 2 Dianzi Road, Xian 710065, China
Abstract: Under certain operating conditions, two-phase flow oscillations can occur and induce undesired problems such as system control, vibration, tube burn-out, etc. Therefore, it is essential to avoid and control two-phase flow instabilities when designing and operating equipments that are susceptible to such effects. The authors conducted an experimental study of vapor-liquid two-phase flow instabilities in vertical parallel tubes for a high-pressure vapor-water loop. Two types of vertical parallel rifled tubes (31.8 mm OD × 6 mm thickness, and 28.6 mm × 5.8 mm) were used as the tube sections. During experimentation, pressure-drop and density-wave type oscillations appeared, and the influence of the inlet pressure, mass flow rate, and inlet subcooling on the two-phase flow instability in both types of vertical parallel-connected tubes was studied. The results showed that with an increase in the inlet pressure and mass flow rate, the boundary thermal load of the pressure-drop and density-wave oscillations increased. As the inlet pressure increased, so the boundary quality of the pressure-drop and density-wave oscillations occurring in both types of the rifled tubes also increased. Experiments showed that under the same operating conditions, the stability of the 31.8 × 6 mm rifled tube is better than the 28.6 × 5.8 mm rifled tube. For the 31.8 × 6 mm rifled tube, the occurrence of the boundary quality of the pressure-drop type oscillation increased with the increasing mass flow rate. However, for the 28.6 × 5.8 mm rifled tube, the occurrence of the boundary quality of the pressure-drop oscillation first increased and then decreased with an increasing mass flow. © 2011 Curtin University of Technology and John Wiley & Sons, Ltd. (13 refs)

Main heading: Pressure drop
Controlled terms: Flow rate - Oscillating flow - Tubes (components) - Mass transfer - Drops - Parallel flow - Two phase flow
Uncontrolled terms: Boundary quality - Density wave type oscillation - Low mass flow rates - Parallel rifled tubes - Pressure-drop type oscillations - Two-phase flow instabilities
Classification Code: 619.1 Pipe, Piping and Pipelines - 631 Fluid Flow - 631.1 Fluid Flow, General - 641.3 Mass Transfer - 943.2 Mechanical Variables Measurements
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

49. Evaluation of cutting error in five-axis free-form surface milling for table-tilting type machine

Yu, Yang (1); Liu, Ping (2)
Source: *Advanced Materials Research*, v 472-475, p 2125-2128, 2012, *Advanced Manufacturing Technology*; **ISSN:** 10226680; **ISBN-13:** 9783037853702; **Conference:** 3rd international Conference on Manufacturing Science and Engineering, ICMSE 2012, March 27, 2012 - March 29, 2012; **Sponsor:** Fujian University of Technology; Xiamen University; Fuzhou University; Huaqiao University; University of Wollongong; **Publisher:** Trans Tech Publications
Author affiliation: (1) Dept. of Mechanical Engineering, Xi'an Shiyou University, Xi'an 710065, China (2) Ministry of Education Key Lab. of Contemporary Design and Integrated Manufacturing Technology, Northwestern Polytechnical University, Xi'an, China
Abstract: Accuracy of machined workpiece is one of the most important considerations for any manufacturer. The present study aims to establish a new algorithm for evaluating the cutting Error in five-axis free-form surface milling for table-tilting type machine. The cutting error evaluating algorithms consider the kinematics of the machine and the tool geometry as well as the local geometries of the machined free-form surface. Based on these algorithms, the present study develops a new error compensation method. Finally, experimental results show that the tool paths generated by the present procedure have better machining efficiency. © (2012) Trans Tech Publications. (8 refs)
Main heading: Computer aided design
Controlled terms: Error compensation - Milling (machining) - Surface measurement
Uncontrolled terms: Cad/cams - Compensation method - Evaluating algorithms - Five-axis - Free-form surface - Local geometry - Machining efficiency - Tool geometry - Toolpaths - Work pieces
Classification Code: 604.2 Machining Operations - 723.5 Computer Applications - 943.2 Mechanical Variables Measurements
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

50. S-band gain-flattened EDFA with two-stage double-pass configuration

Fu, Hai-Wei (1, 2); Xu, Shi-Chao (1); Qiao, Xue-Guang (1, 2); Jia, Zhen-An (1); Liu, Ying-Gang (1); Zhou, Hong (1)
Source: *Proceedings of SPIE - The International Society for Optical Engineering*, v 8331, 2012, *Photonics and Optolectronics Meetings (POEM) 2011: Optical Communication Systems and Networking*; **ISSN:** 0277786X; **ISBN-13:** 9780819489883; **DOI:** 10.1117/12.918822; **Article number:** 83310H; **Conference:** Photonics and Optolectronics Meetings (POEM) 2011: Optical Communication Systems and Networking, November 2, 2011 - November 5, 2011; **Sponsor:** China Hubei Provincial Science and Technology Department; Huazhong University of Science and Technology; Hubei Provincial Foreign Experts Affairs Bureau; The Optical Society; Wuhan East Lake Natl. Innov. Model Zone, Opt. Val. China (OVC); **Publisher:** SPIE
Author affiliation: (1) Key Laboratory of Photoelectric Gas and Oil Logging and Detecting, Ministry of Education, Xi'an Shiyou University, Xi'an, 710065, China (2) Department of Physics, Northwest University, Xi'an, 710069, China
Abstract: A gain-flattened S-band erbium-doped fiber amplifier (EDFA) using standard erbium-doped fiber (EDF) is proposed and experimentally demonstrated. The proposed amplifier with two-stage double-pass configuration employs two C-band suppressing filters to obtain the optical gain in S-band. The amplifier provides a maximum signal gain of 41.6 dB at 1524 nm with the corresponding noise figure of 3.8 dB. Furthermore, with a well-designed short-pass filter as a gain flattening filter (GFF), we are able to develop the S-band EDFA with a flattened gain of more than 20 dB in 1504-1524 nm. In the experiment, the two-stage double-pass amplifier configuration improves performance of gain and noise figure compared with the configuration of single-stage double-pass S-band EDFA. © 2012 SPIE. (7 refs)
Main heading: Erbium doped fiber amplifiers
Controlled terms: Fibers - Bandpass filters - Noise figure

Uncontrolled terms: Amplified spontaneous emissions - Filter - Gain flattened - S-band - Standard erbium-doped fibers
Classification Code: 703.2 Electric Filters - 741.1.2 Fiber Optics - 741.3 Optical Devices and Systems - 744.7 Laser Components
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

51. Fusion of BVM and ELM for anomaly detection in computer networks

Cai, Changning (1); Pan, Huaxian (2); Cheng, Guojian (3)
Source: *Proceedings - 2012 International Conference on Computer Science and Service System, CSSS 2012*, p 1957-1960, 2012, *Proceedings - 2012 International Conference on Computer Science and Service System, CSSS 2012*; **ISBN-13:** 9780769547190; **DOI:** 10.1109/CSSS.2012.488; **Article number:** 6394806; **Conference:** 2012 International Conference on Computer Science and Service System, CSSS 2012, August 11, 2012 - August 13, 2012; **Sponsor:** et al.; IEEE Computer Cociety of Jiangsu Province; Nanjing University; Nanjing University of Science and Technology; Sichuan University; Zhejiang University; **Publisher:** IEEE Computer Society
Author affiliation: (1) Research Institute of Petroleum Exploration, Development-northwest, PETROCHINA, Lanzhou, China (2) Xingzhi College, Xi'An University of Finance and Economics, Xi'an, China (3) School of Electronic Engineering, Xi'An Shiyou University, Xi'an, China
Abstract: This paper proposes a new network anomaly detection method in order to deal with the low detection rate and high false alarm rate problem. Ball vector machine (BVM) and extreme learning machine (ELM) is individually applied to learn three kinds of network features, then a BP neural network is utilized to simulate weights, which is used to fusion of the label. The experiments show that, the performance of this fusion method is better than single BVM or ELM classifier.compared to the fusion method of SVM and BP neural network, the method proposed by this paper has a similar performance in detection rate and false alarm rate but with a significantly lower training time, and it is suitable for network anomaly detection with large scale dataset. © 2012 IEEE. (11 refs)
Main heading: Data fusion
Controlled terms: Knowledge acquisition - Image resolution - Errors - Neural networks
Uncontrolled terms: Ball vector machines - BP neural networks - Detection rates - Extreme learning machine - False alarm rate - Large-scale dataset - Network anomaly detection - Network features
Classification Code: 723.2 Data Processing and Image Processing - 723.4 Artificial Intelligence
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

52. Rapid analysis of gold and sliver in blister copper by nitric acid digestion prior to determination by atomic absorption spectrometry

Meng, Zuchao (1); Zhang, Ni (2)
Source: *Russian Journal of Non-Ferrous Metals*, v 53, n 4, p 289-291, September 2012; **ISSN:** 10678212, **E-ISSN:** 1934970X; **DOI:** 10.3103/S1067821212040062; **Publisher:** Allerton Press Incorporation
Author affiliation: (1) College of Chemistry and Chemical Engineering, Xi'an Shiyou University, Xi'an Shaanxi 710065, China (2) Northwest Geological Research Institute for Nonferrous Metals, No. 25 Xiying Road, Xi'an 710054, China
Abstract: A rapid method for the analysis of gold and sliver in blister copper by atomic absorption spectrometry was proposed. Nitric acid was used to digest blister copper instead of commonly used sulfuric acid. This avoided forming the salt of copper sulfate in the filtration process when the volume of the mixture is very small. Thus, the time of filtration was saved. After filtrating, aqua regia was used to digest the residue and acidize the filter liquor. Two parts of gotten solution were directly determined by atomic absorption spectrometry. The cycle of analysis was shortened compared with sulfuric acid-fire assay. The proposed method was successfully applied to determine gold and sliver in blister copper, and the results were in good agreement with those obtained by lead fire assay. © 2012 Allerton Press, Inc. (5 refs)
Main heading: Atomic absorption spectrometry
Controlled terms: Silver - Gold - Sulfur determination - Absorption spectroscopy - Sulfur compounds - Atoms - Copper compounds - Sulfuric acid - Nitric acid
Uncontrolled terms: Acid digestion - Aqua regia - Blister copper - Copper sulfate - Filtration process - Fire assay - Rapid analysis - Rapid method
Classification Code: 547.1 Precious Metals - 741.3 Optical Devices and Systems - 801 Chemistry - 804.2 Inorganic Compounds - 931.3 Atomic and Molecular Physics - 941.4 Optical Variables Measurements
Database: Compendex

Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

53. The error estimation for 5-axis spindle-rotating CNC machine tool

Yu, Yang (1); Liu, Ping (2)
Source: *Advanced Materials Research*, v 472-475, p 2175-2178, 2012, *Advanced Manufacturing Technology*; **ISSN:** 10226680; **ISBN-13:** 9783037853702; **Conference:** 3rd international Conference on Manufacturing Science and Engineering, ICMSE 2012, March 27, 2012 - March 29, 2012; **Sponsor:** Fujian University of Technology; Xiamen University; Fuzhou University; Huaqiao University; University of Wollongong; **Publisher:** Trans Tech Publications
Author affiliation: (1) Dept. of Mechanical Engineering, Xi'an Shiyou University, Xi'an 710065, China (2) Ministry of Education Key Lab. of Contemporary Design and Integrated Manufacturing Technology, Northwestern Polytechnical University, Xi'an, China
Abstract: 5-axis CNC machine is be the best tools in sculptured surfaces machining. Current CAM algorithms for 5-axis machining only consider the surfaces' geometric information when generating cutter contact points (CC points). Hence, the step length, which is the distance between two CC points, is determined only by the surface parameters for current CAM system. Because of the cutting tool can rotate, the actual cut trajectory is no longer a straight line between two consecutive CC points for 5-axis machining. Thus the cut error and the maximum step length should depend on the structural of 5-axis CNC machines tool and the surface's geometry. This paper proposed a new algorithm to estimate the maximum step length based on the cut error of 5-axis machining, and the result shows that this estimation algorithm provides better than traditional algorithms. © (2012) Trans Tech Publications. (12 refs)
Main heading: Errors
Controlled terms: Cams - Computer control systems - Manufacture - Machine tools - Cutting tools
Uncontrolled terms: 5-Axis machining - CAM systems - CNC - CNC machine - CNC machine tools - Contact points - Estimation algorithm - Geometric information - NC-machining - Sculptured surfaces - Spindle-rotating - Step length - Surface parameter
Classification Code: 537.1 Heat Treatment Processes - 601.3 Mechanisms - 603.1 Machine Tools, General - 603.2 Machine Tool Accessories - 723.5 Computer Applications - 731.1 Control Systems - 913.4 Manufacturing
Database: Compendex
Data Provider: Engineering Village
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54. Predicting formation fracture pressure based on BP neural network

Liu, Zhidi (1); Tang, Xiaoyan (2); Wang, Chunyan (3)
Source: *Advances in Intelligent and Soft Computing*, v 168 AISC, n VOL. 1, p 541-545, 2012, *Advances in Computer Science and Information Engineering*; **ISSN:** 18675662; **ISBN-13:** 9783642301254; **DOI:** 10.1007/978-3-642-30126-1_85; **Conference:** Computer Science and Information Engineering, CSIE 2012, May 19, 2012 - May 20, 2012; **Sponsor:** Beijing Gireda Research Center; International Science and Education Researcher Association; VIP Information Conference Center; **Publisher:** Springer Verlag
Author affiliation: (1) School of Petroleum Resources, Xi'an Shiyou University, Xi'an, China (2) College of Geology and Environment, Xi'an University of Science and Technology, Xi'an, China (3) Exploration Department, Yanchang Oilfield Company, Yanchang, China
Abstract: Presently, the theoretical models of calculating formation fracture pressure are generally used, but there are few statistical models that can obviously reflect the formation fracture pressure and the rock mechanics parameters. In this paper, taking into account the relation of formation fracture pressure and rock mechanics parameters, the four parameters which have a close connection to formation fracture pressure, such as Young's modulus, bulk modulus, poison's ratio and depth are selected. Thus based on the BP neural network, the statistical models of formation fracture pressure are established to calculate fracture pressure of carbonate formation. The research shows that BP neural network model is complex, and its model is difficult to set up, but the error of estimate's formation fracture pressure is little, the precision is high. © 2012 Springer-Verlag GmbH. (6 refs)
Main heading: Elastic moduli
Controlled terms: Rocks - Neural networks - Fracture - Rock mechanics
Uncontrolled terms: BP neural network model - BP neural networks - Carbonate formations - Fracture pressures - Rock mechanics parameters
Classification Code: 483.1 Soils and Soil Mechanics - 951 Materials Science
Database: Compendex
Data Provider: Engineering Village
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55. Ionic crystals based on Keggin anion and mixed-valent diruthenium tetracetate: [Ru2(CH3COO)4(H2O) 2]2[HnXW12O40] ·[Ru2(CH3COO)4(H2O)Cl] ·12H2O (X = B, Si, Ge)

Liu, Xuemei (1, 2); Liu, Bin (1); Xue, Ganglin (1)
Source: *Solid State Sciences*, v 14, n 5, p 611-615, May 2012; **ISSN:** 12932558; **DOI:** 10.1016/j.solidstatesciences.2011.11.028; **Publisher:** Elsevier Masson SAS
Author affiliation: (1) Department of Chemistry, Shaanxi Key Laboratory of Physico-Inorganic Chemistry, Northwest University, Xi'an 710069, China (2) School of Chemistry and Chemical Engineering, Xi'An Shiyou University, Xi'an 710065, China
Abstract: Three new ionic crystals based on Keggin anion and mixed-valent diruthenium tetracetate, [Ru2(CH3CO2)4(H 2O)2]2[HnXW12O 40]·[Ru2(CH3CO2) 4(H2O)Cl]·12H2O {X = B, n = 3 (1); X = Si, n = 2 (2); X = Ge, n = 2 (3)}, have been prepared in acidic aqueous solution at about pH 3.0 by reaction of K4BW12O 40·mH2O, K8SiW11O 39·mH2O and K8GeW11O 39·mH2O with diruthenium tetracetate Ru 2(CH3COO)4Cl, respectively, and their structures were determined by X-Ray diffraction analysis. They are isostructural structure with the ratio of heteropolytungstate anion, Ru2(CH 3CO2)4+ cation and neutral molecular Ru2(CH3CO2)4Cl of 1:2:1. The cyclic voltammetry in 0.5 M KNO3 aqueous solution at pH 3.0 show the respective electrochemical behaviors of the W-centers and Ru2-centers for these three complexes. Magnetic data analysis shows that diruthenium units display the ground state electronic configuration $\pi^{\#2}\delta^{*}$ with large positive D value. © 2011 Elsevier Masson SAS. All rights reserved. (27 refs)
Main heading: Cyclic voltammetry
Controlled terms: Ions - Potash - Ground state - Potassium Nitrate - Solutions - Magnetism - Ruthenium compounds - X ray diffraction analysis
Uncontrolled terms: Acidic aqueous solution - Diruthenium - Electrochemical behaviors - Electronic configuration - Heteropolytungstates - Ionic crystals - Magnetic data - Polyoxometalate
Classification Code: 701.2 Magnetism: Basic Concepts and Phenomena - 801.4.1 Electrochemistry - 804.2 Inorganic Compounds
Funding Details: Number: 2010JK782, Acronym: -, Sponsor: Education Department of Shaanxi Province; Number: 2009JQ7010, Acronym: -, Sponsor: Natural Science Foundation of Shaanxi Province; Number: 21101126, Acronym: NSFC, Sponsor: National Natural Science Foundation of China;
Funding text: This work was supported by the National Natural Science Foundation of China (21101126), the Natural Science Foundation of Shaanxi Province (No. 2009JQ7010), and the Education Commission of Shaanxi Province (No. 2009JK761 , No. 2010JK782).
Database: Compendex
Data Provider: Engineering Village
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56. Laboratory studies of immiscible N2 WAG flooding for low permeability reservoir of Ordos Basin

Hai, Huang (1, 2)
Source: *Advanced Materials Research*, v 347-353, p 1663-1668, 2012, *Renewable and Sustainable Energy*; **ISSN:** 10226680; **ISBN-13:** 9783037852651; **DOI:** 10.4028/www.scientific.net/AMR.347-353.1663; **Conference:** 2011 International Conference on Energy, Environment and Sustainable Development, ICEESD 2011, October 21, 2011 - October 23, 2011; **Publisher:** Trans Tech Publications
Author affiliation: (1) Department of Geology, Northwestern University, 229# North Taibai Road, Xi'an City, 710075, China (2) Department of Petroleum Engineering, Xi'an Shiyou University, 18# Electronic Two Road, Xi'an City, 710065, China
Abstract: This paper presents experimental work that quantifies the effect of water-alternating-gas (WAG) variables on the immiscible N2 flooding process for low permeability reservoir of Ordos Basin. Many experiments were done with the sand-packed model under the formation condition. The results may be used to determine such parameters as injection pattern, WAG radio, and the number of WAG slugs. Analysis of the relative efficiency of each WAG slug is discussed. © (2012) Trans Tech Publications, Switzerland. (5 refs)
Main heading: Low permeability reservoirs
Controlled terms: Floods - Oil well flooding - Petroleum reservoir engineering - Mechanical permeability - Metamorphic rocks - Reservoirs (water)
Uncontrolled terms: Formation condition - Immiscible N2 Flooding - Injection patterns - Laboratory studies - Low permeability - Ordos Basin - Relative efficiency - WAG - Water alternating gas
Classification Code: 441.2 Reservoirs - 511.1 Oil Field Production Operations - 512.1 Petroleum Deposits - 512.1.2 Petroleum Deposits : Development Operations
Database: Compendex
Data Provider: Engineering Village

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57. Gravity field and tectonic features of Block L2 in the Lamu basin, Kenya

Yuan, Bingqiang (1); Xie, Wensheng (2); Liu, Guihe (2); Zhang, Chunguan (1)
Source: *Geophysical Prospecting*, v 60, n 1, p 161-178, January 2012; **ISSN:** 00168025, **E-ISSN:** 13652478; **DOI:** 10.1111/j.1365-2478.2011.00961.x; **Publisher:** Blackwell Publishing Ltd
Author affiliation: (1) School of Petroleum Resources, Xi'an Shiyou University, East Section No.18, Dianzierlu, 710065 Xi'an, China (2) The Research Center of China National Offshore Oil Corporation Limited, Beijing, 100027, China
Abstract: A gravity survey on the scale of 1: 250000 was carried out in Block L2 located in the Lamu basin of south-east Kenya in order to study tectonic features and find out favourable petroleum prospects in the block. This paper, through data processing and synthetic interpretation of the measured gravity data in the block, discusses characteristics of the gravity field and their geological implications, determines the fault system and the basement depth, analyses features of the main strata, divides structure units and predicts favourable petroleum zones. In the block, the regional gravity anomaly is mainly caused by the inclined Moho surface that rises in the east and subsides in the west topographically and the Bouguer gravity anomaly primarily reflects the superimposition of the gravity effect derived from the Moho surface and the basement relief. Two groups of faults extending NW (NWW) and NE (NEE) respectively are dominant in the block and their activities resulted in the framework of east-west zoning and south-north blocking. The basement depth greatly changes in an alternative high and low pattern. The Permian-Triassic, Jurassic and Tertiary strata are extensively developed, while the Cretaceous is only developed in the east of the block. Structurally, the block can be divided into five units, of which the Tana sag shows excellent source-reservoir-seal associations and is a favourable target for future petroleum exploration. © 2011 European Association of Geoscientists & Engineers. (25 refs)
Main heading: Data handling
Controlled terms: Buildings - Faulting - Gravitation - Petroleum prospecting
Uncontrolled terms: Block L2 - Bouguer gravity anomalies - Gravity anomalies - Gravity effects - Gravity field - Kenya - Petroleum exploration - Tectonic features
Classification Code: 402 Buildings and Towers - 484.1 Earthquake Measurements and Analysis - 512.1.2 Petroleum Deposits : Development Operations - 723.2 Data Processing and Image Processing - 931.5 Gravitation, Relativity and String Theory
Database: Compendex
Data Provider: Engineering Village
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58. Oil well placement optimization using niche particle swarm optimization

Cheng, Guojian (1); An, Yao (1); Wang, Zhe (2); Zhu, Kai (3)
Source: *Proceedings of the 2012 8th International Conference on Computational Intelligence and Security, CIS 2012*, p 61-64, 2012, *Proceedings of the 2012 8th International Conference on Computational Intelligence and Security, CIS 2012*; **ISBN-13:** 9780769548968; **DOI:** 10.1109/CIS.2012.22; **Article number:** 6405867; **Conference:** 2012 8th International Conference on Computational Intelligence and Security, CIS 2012, November 17, 2012 - November 18, 2012; **Sponsor:** Beijing Normal University; EEE CPS; Xidian University; **Publisher:** IEEE Computer Society
Author affiliation: (1) School of Computer Science, Xi'an Shiyou University, China (2) School of Computing, Edinburgh Napier University, United Kingdom (3) School of Engineering and Computer Science, University of the Pacific, United States
Abstract: A challenging problem in oil field development project is the optimization of multi-wells placement because of the increasing in optimization variable quantities and searching space size. To overcome the limitation of traditional optimization with strict definitive objective function, a new method based on Niche Particle Swarm Optimization (NPSO) is proposed in this paper for oil field development project. The new algorithm has no restrictions on the continuity and differentiable requirement for the objective function. It also can handle the combinatorial optimization problems with large numbers of multi-dimensional variable. This algorithm is applied to optimize the multi-well placement in oil field development with the optimized object to maximize the cumulative production. This can provide the reservoir engineers a new idea and methodology for oil well placement optimization. The experimental results show that NPSO algorithm is an effective and out performance method in resolving optimization problem by using multi-dimensional variables specification to optimize the multi-well placement in oilfields. © 2012 IEEE. (12 refs)
Main heading: Combinatorial optimization
Controlled terms: Oil well flooding - Particle swarm optimization (PSO) - Oil field development

Uncontrolled terms: Combinatorial optimization problems - Cumulative production - Niche particle swarm optimizations - Optimization problems - Optimization variables - Reservoir engineers - Well placement - Well placement optimization
Classification Code: 511.1 Oil Field Production Operations - 512.1.2 Petroleum Deposits : Development Operations - 723 Computer Software, Data Handling and Applications - 921.4 Combinatorial Mathematics, Includes Graph Theory, Set Theory - 921.5 Optimization Techniques
Database: Compendex
Data Provider: Engineering Village
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59. 21 Ma deepwater gravity flow depositional system in Baiyun sag, northern South China Sea

Li, Lei (1); Wang, Yingmin (2); Xu, Qiang (3); Li, Dong (3)
Source: *Shiyou Xuebao/Acta Petrolei Sinica*, v 33, n 5, p 798-806, September 2012; **Language:** Chinese; **ISSN:** 02532697; **Publisher:** Science Press
Author affiliation: (1) School of Earth Sciences and Engineering, Xi'an Shiyou University, Xi'an 710065, China (2) College of Geosciences, China University of Petroleum, Beijing 102249, China (3) CNOOC Research Institute, Beijing 100027, China
Abstract: Deepwater gravity flow deposits are one of the main depositional types on the slope of the northern South China Sea. Based on high-resolution 3D seismic data, drilling data and logging data, and integrated with geophysical date interpretation and geological analysis, we identified, interpreted and forecasted a 21 Ma deepwater depositional system developed in Baiyun sag, northern South China Sea. The results showed that three types of deepwater gravity-flow deposits were identified, i.e. mass-transport, channel-levee complex and lobate deposits. The mass-transport deposit (MTD) has a chaotic seismic reflection with basal erosion scratches. The channel-levee complex deposit is characteristic of a "gull-wing" seismic reflection, of which the former (channel) shows a low-amplitude U- or V-shaped seismic reflection and acts as a main pathway for deepwater gravity-flow deposits, while the latter (levee) formed by the overflow of gravity flow is of a high-amplitude wedge-shaped reflection. A high-amplitude parallel to sub-parallel seismic reflection is interpreted to represent the lobate deposit, which is located in front of the channel and comes in a lobe-like shape on plane. Gradual evolution from the mass-transport deposit to the channel, channel-levee complex or labate deposit is often accompanied with a reciprocal transformation of various flow patterns of deepwater gravity flow. The research integrated geophysics, sedimentology and marine geology with the observation of the 21 Ma deepwater gravity-flow depositional system in Baiyun sag, northern South China Sea to establish a deepwater sedimentary model, which is of the theoretic significance in studying various depositional processes of deepwater gravity flow. (30 refs)
Main heading: Deposits
Controlled terms: Seismology - Submarine geology - Tectonics - Gravitation - Submarines - Seismic waves - Sedimentology - Levees
Uncontrolled terms: Baiyun sag - Deepwater - Depositional system - Gravity flows - South China sea
Classification Code: 442.1 Flood Control - 471.1 Oceanography, General - 481.1 Geology - 484 Seismology - 484.1 Earthquake Measurements and Analysis - 672.1 Combat Naval Vessels - 931.5 Gravitation, Relativity and String Theory
Database: Compendex
Data Provider: Engineering Village
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60. Effect of SnO-SiO2 composite coating on bonding of titanium-porcelain

Guo, L.T. (1); Liu, X.M. (1); Zhang, Y. (1); Guo, L.Z. (2); Zhu, Y.B. (1); Guo, T.W. (3)
Source: *Materials Science and Technology*, v 28, n 4, p 467-470, 2012; **ISSN:** 02670836, **E-ISSN:** 17432847; **DOI:** 10.1179/026708309X12560332736511; **Publisher:** Maney Publishing
Author affiliation: (1) School of Materials Science and Engineering, China University of Mining and Technology, Xuzhou 221116, China (2) Xi'an Shiyou University, Xi'an 710065, China (3) Fourth Military Medical University, Xi'an 710032, China
Abstract: The SnO-SiO2 composite coating was deposited on titanium (Ti) by sol-gel dipping process. The adhesion between the Ti and porcelain was evaluated by three point flexure bonding test. The results of thermogravimetry and differential scanning calorimetry analysis showed that the optimal heat treating temperature for SnO-SiO2 composite coating was 300uC. The SEM results revealed that the existence of microcracks on the SnO-SiO 2 composite coatings surface after being treated at 300uC. The Ti oxide was formed along the crack. Failure of the Ti-porcelain predominantly occurred at the SnO-SiO2 composite coatings. SnO-SiO2 composite coatings served as an effective

oxygen diffusion barrier, improved the chemical bonding between porcelain and Ti and resulted in the increased bonding strength of Ti-porcelain. © 2012 Institute of Materials, Minerals and Mining. (20 refs)
Main heading: Sol-gel process
Controlled terms: Dental materials - Diffusion coatings - Titanium oxides - Silica - Differential scanning calorimetry - Porcelain - Composite coatings - Chemical bonds - Sol-gels - Thermogravimetric analysis
Uncontrolled terms: Bonding strength - Chemical bondings - Heat treating temperature - Oxygen diffusion barriers - Sol-gel-dipping process - Ti oxides - Titanium-porcelain bondings
Classification Code: 462.3 Dental Equipment and Supplies - 801 Chemistry - 801.4 Physical Chemistry - 804 Chemical Products Generally - 804.2 Inorganic Compounds - 812.1 Ceramics - 812.3 Glass - 813.2 Coating Materials - 944.6 Temperature Measurements
Database: Compendex
Data Provider: Engineering Village
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61. Oscillations of methane oxidation over metallic nickel surfaces

Tang, Xuan (1); Nan, Yefei (1); Huang, Fenglin (1); Zhang, Xunli (1, 2)
Source: *Reaction Kinetics, Mechanisms and Catalysis*, v 107, n 1, p 245-252, October 2012; **ISSN:** 18785190, **E-ISSN:** 18785204; **DOI:** 10.1007/s11144-012-0461-1; **Publisher:** Springer Science+Business Media B.V.
Author affiliation: (1) College of Chemistry and Chemical Engineering, Xi'An Shiyou University, Xi'an 710065, China (2) Engineering Sciences, Faculty of Engineering and the Environment, University of Southampton, Southampton SO17 1BJ, United Kingdom
Abstract: The oscillatory behavior of the reaction of partial oxidation of methane has been investigated over metallic nickel surfaces. It was found that the chemical compositions and the reaction temperature within the reactor exhibited regular oscillations over a range of reactor temperatures between 710 and 930 °C with different feed gas compositions at flow rate ratios (Ar/CH 4/O2) ranging from 30:29:1 to 30:12:18 cm3 min-1. When the reactor temperature increased, the oscillation frequency increased showing indicative correlations, while the amplitude decreased with the rise in system temperature. Varying feed gas composition resulted in complex changes in oscillatory waveforms, frequencies, amplitudes, and product selectivities. The oscillation was attributed to the cyclic reduction and oxidation of the nickel surface under the reaction conditions. © 2012 Akadémiai Kiadó, Budapest, Hungary. (20 refs)
Main heading: Catalysis
Controlled terms: Oxidation - Surface reactions - Methane - Nickel
Uncontrolled terms: Chemical compositions - Metallic nickel - Methane oxidation - Oscillation frequency - Oscillations - Oscillatory behaviors - Partial oxidation of methane - Product selectivities
Classification Code: 548.1 Nickel - 802.2 Chemical Reactions - 804.1 Organic Compounds
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

62. Experimental study of high temperature profile control agent for oily sludge

Zhao, Jinsheng (1); Xu, Ziqiang (2); Shen, Lina (3)
Source: *Advanced Materials Research*, v 550-553, p 603-606, 2012, *Advances in Chemical Engineering II*; **ISSN:** 10226680; **ISBN-13:** 9783037854556; **DOI:** 10.4028/www.scientific.net/AMR.550-553.603; **Conference:** 2nd International Conference on Chemical Engineering and Advanced Materials, CEAM 2012, July 13, 2012 - July 15, 2012; **Publisher:** Trans Tech Publications
Author affiliation: (1) College of Petroleum Engineering, Xi'an Shiyou University, Xi'an, China (2) Research Institute of Oil and Gas Technology, Changqing Oil field Company, Xi'an, China (3) Exploration and Development Research Institute, Changqing Oil field Company, Xi'an, China
Abstract: Oily sludge mainly comes from well site and precipitation tank in gathering point. It is very harmful to oilfield environment and has been a problem of oilfields for a long time. On the base of analyses of the composition solid content of oily sludge in Shengli oilfield, a profile control agent has been developed. Plugging property evaluation experiment showed that this kind of profile control agent possessed core plugging ratio above 99 percent and breakthrough pressure above 10 MPa. So it has higher plugging strength. Parallel core experiment showed that most of the profile control agent is injected into the high permeability zone, for the reservoir whose permeability contrast is above 7, and the harm of profile control agent to low permeability zone is below 15 percent. This oily sludge profile control agent can be used in profile controlling of waterflood input well and steam blocking of thermal production well, this technology will have a good effect in field application. © (2012) Trans Tech Publications, Switzerland. (3 refs)
Main heading: Petroleum reservoir engineering
Controlled terms: Temperature control - Environmental protection - Oil well flooding

Uncontrolled terms: Experimental studies - High permeability zone - High temperature - In-field - Low permeability zone - Oily sludges - Permeability contrasts - Production wells - Profile control agent - Property evaluation - Shengli Oilfield - Solid contents - Water flood
Classification Code: 454.2 Environmental Impact and Protection - 511.1 Oil Field Production Operations - 512.1.2 Petroleum Deposits : Development Operations - 731.3 Specific Variables Control
Database: Compendex
Data Provider: Engineering Village
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63. Preparation and characterization of a titanium bonding porcelain

Guo, Litong (1); Shi, Yao (1); Guo, Lizhi (2); Zhang, Qian (3); Tian, Junlong (1); Zhu, Yabo (1); Guo, Tianwen (3)
Source: *Materials Science and Engineering C*, v 32, n 6, p 1531-1535, August 1, 2012; **ISSN:** 09284931; **DOI:** 10.1016/j.msec.2012.04.038; **Publisher:** Elsevier Ltd
Author affiliation: (1) School of Materials Science and Engineering, China University of Mining and Technology, Jiangsu, Xuzhou 221116, China (2) Xi'An Shiyou University, Xi'an 710065, China (3) Fourth Military Medical University, Xi'an 710032, China
Abstract: The titanium bonding porcelain was synthesized through normal melting-derived route using borate-silicate system. The porcelain was characterized by thermal expansion, X-ray diffraction, scanning electron microscope and cytotoxicity tests. The results of X-ray diffraction showed that the main phase of the bonding porcelain was SnO2. The SnO2 microcrystals precipitated from the glass matrix when the SnO2 content was increased. The thermal expansion coefficient of bonding porcelains decreased with the increasing concentration of SiO2. The thermal expansion coefficient of bonding porcelains first decreased slightly with the increasing of B2O3 concentration (from 0 wt% to 10 wt%) and then increased to about 9.4 × 10- 6/°C(from 10 wt% to 12 wt%). As an intermediate, B2O3 can act as both network formers and modifiers, depending on the relationship between the concentration of basic oxides and intermediates. The Vickers hardness of bonding porcelains increased with the increase of SnO2 concentration. When SnO 2 concentration was 6 wt%, only Si and Sn elements attended the reaction between titanium and porcelain and mainly adhesive fracture was found at Ti-porcelain interface. When SnO2 concentration was 12 wt%, failure of the titanium-porcelain predominantly occurred in the bonding porcelain and mainly cohesive fracture was found at Ti-porcelain interface. The methyl thiazolyl tetrazolium assay results demonstrated that the cytotoxicity of the titanium porcelain was ranked as 0. © 2012 Elsevier B.V. (15 refs)
Main heading: Cytotoxicity
Controlled terms: Scanning electron microscopy - Titanium - Vickers hardness - Fracture - Porcelain - X ray diffraction - Dental materials - Silica - Silicates - Thermal expansion
Uncontrolled terms: Bonding porcelains - Cohesive fracture - Cytotoxicity test - Glass matrices - Methyl thiazolyl tetrazolium assays - Silicate system - Sn elements - Thermal expansion coefficients
Classification Code: 461.9 Biology - 462.3 Dental Equipment and Supplies - 542.3 Titanium and Alloys - 641.1 Thermodynamics - 812.1 Ceramics - 951 Materials Science
Funding Details: Number: 81100789, Acronym: NSFC, Sponsor: National Natural Science Foundation of China; Number: 20090095120017, Acronym: MOE, Sponsor: Ministry of Education of the People's Republic of China; Number: 20100481173, Acronym: -, Sponsor: China Postdoctoral Science Foundation; Number: 2012QNA04,JX111744, Acronym: -, Sponsor: Fundamental Research Funds for the Central Universities;
Funding text: The authors gratefully acknowledge the Fourth Military Medical University for providing support for porcelain fusion and in vitro bioactivity tests. This work was supported by the National Natural Science Foundation of China (No. 81100789), China Postdoctoral Science Foundation (No. 20100481173), Doctoral Fund for New Youth Scholars of Ministry of Education of China (No. 20090095120017) and the Fundamental Research Funds for the Central Universities (No. JX111744 and No. 2012QNA04).
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64. Synthesis, structure, and thermodynamics of a lanthanide coordination compound incorporating 5-nitroisophthalic acid

Wang, Xiao-Ling (1, 2); Xia, Zheng-Qiang (1); Wei, Wei (1); Xie, Gang (1); Chen, San-Ping (1); Gao, Sheng-Li (1)
Source: *Journal of Chemical Thermodynamics*, v 55, p 124-129, December 2012; **ISSN:** 00219614, **E-ISSN:** 10963626; **DOI:** 10.1016/j.jct.2012.06.029; **Publisher:** Academic Press
Author affiliation: (1) Key Laboratory of Synthetic and Natural Functional Molecule Chemistry, Ministry of Education, Northwest University, Xi'an 710069, China (2) College of Chemistry and Chemical Engineering, Xi'An Shiyou University, Xi'an 710065, China

Abstract: A lanthanide coordination compound, [Sm3(5-nip) 4(5-Hnip)(H2O)7·9H2O] n (5-H2nip = 5-nitroisophthalic acid), has been synthesized and characterized by elemental analysis, IR, TG-DSC, and single-crystal X-ray diffraction. Structural analysis reveals that the compound features two kinds of 1D channels with guest water molecules. TG-DSC curves show that the dehydrated product of the compound exhibits high stability up to 673 K. The enthalpy change of reaction of formation in water, #rHm#(l), was determined to be (27.608 ± 0.133) kJ · mol-1 at (298.15 ± 0.01) K by microcalorimetry. Based on a designed thermochemical cycle and other auxiliary thermodynamic data, the enthalpy change of reaction of formation in solid at (298.15 ± 0.01) K and the standard molar enthalpy for the compound, #rHm#(s) and #fHm#, were calculated to be (96.8 ± 0.8) kJ · mol-1 and (-831.4 ± 16.0) kJ · mol-1, respectively. In addition, thermodynamics and thermokinetics of the reaction of formation of the compound were investigated in water. © 2012 Elsevier Ltd. All rights reserved. (33 refs)
Main heading: Rare earth elements
Controlled terms: Coordination reactions - Structural analysis - Crystal structure - Single crystals - Enthalpy - Molecules - X ray diffraction - Calorimeters
Uncontrolled terms: Compound features - Coordination compounds - Dehydrated products - Micro-calorimetry - Single crystal x-ray diffraction - Standard molar enthalpy - Thermochemical cycles - Thermodynamic data
Classification Code: 408.1 Structural Design, General - 547.2 Rare Earth Metals - 641.1 Thermodynamics - 802.2 Chemical Reactions - 931.3 Atomic and Molecular Physics - 933.1 Crystalline Solids - 933.1.1 Crystal Lattice - 944.5 Temperature Measuring Instruments
Funding Details: Number: 11JS110,FF10091,SJ08B09, Acronym: -, Sponsor: -; Number: 21073142,21173168, Acronym: NSFC, Sponsor: National Natural Science Foundation of China;
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Data Provider: Engineering Village
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65. New extending edge method of potential field data

Zhang, Chunguan (1); Zhang, Minghua (2); An, Yulin (3)
Source: *Proceedings - 2012 International Conference on Biomedical Engineering and Biotechnology, iCBEB 2012*, p 845-847, 2012, *Proceedings - 2012 International Conference on Biomedical Engineering and Biotechnology, iCBEB 2012*; **ISBN-13:** 9780769547060; **DOI:** 10.1109/iCBEB.2012.282; **Article number:** 6245253; **Conference:** 2012 International Conference on Biomedical Engineering and Biotechnology, iCBEB 2012, May 28, 2012 - May 30, 2012; **Publisher:** IEEE Computer Society
Author affiliation: (1) School of Petroleum Resources, Xi'an Shiyou University, XSYU, Xi'an, China (2) Development Research Center, China Geological Survey, CGS, Beijing, China (3) School of Geophysics and Information Technology, China University of Geosciences, CUGB, Beijing, China
Abstract: In order to develop a new extending edge method of potential field with reasonable and practical, this paper develops a difference method of extending edge based on the mean value theorem and the maximum value and minimum value theorem. This paper, through designing theoretical model and calculating theoretical data, processes the actual data by difference method of extending edge, analyses the differences between the theoretical data and the results of extending edge, discusses the applied effect of this difference method of extending edge. The results show that the decay trend of the contour of the extending part based on this difference method of extending edge is similar to that of the original contour, especially when the potential field value of the original data block in the boundary is in a declining trend. The study reveals that the outward extending data based on difference method of extending edge are quite reasonable, and the boundary effect is not obvious, so this extending data are suitable for the further processing and inversion. The operation of this extending method is simple and the computing velocity of this method is fast, so this method is suitable for the potential field data with complex boundary, also for the terrain elevation data. © 2012 IEEE. (9 refs)
Main heading: Computation theory
Uncontrolled terms: Boundary effects - Difference method - extending edge - Mean value theorem - Original data block - Potential field - Potential field datum - Theoretical modeling
Classification Code: 721.1 Computer Theory, Includes Formal Logic, Automata Theory, Switching Theory, Programming Theory
Database: Compendex
Data Provider: Engineering Village
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66. Determination of the maximum strain-hardening exponent

Xu, Tianhan (1, 2); Feng, Yaorong (3); Jin, Zhihao (2); Song, Shengyin (3); Wang, Danghui (1)
Source: *Materials Science and Engineering A*, v 550, p 80-86, July 30, 2012; **ISSN:** 09215093; **DOI:** 10.1016/j.msea.2012.04.027; **Publisher:** Elsevier Ltd
Author affiliation: (1) School of Materials Science and Engineering, Xi'an Shiyou University, Xi'an 710065, China (2) School of Materials Science and Engineering, Xi'an Jiaotong University, Xi'an 710049, China (3) Tubular Goods Research Centre of CNPC, Xi'an 710065, China
Abstract: The method for the rapid and accurate determination of the maximum strain-hardening exponent was developed by investigating the change trend of the strain-hardening exponent of the steels with different microstructures. The quantitative relationship between the maximum strain-hardening exponent and the yield strength ratio was also determined by using the available yield and tensile strengths of the materials. The three methods of determining the maximum strain-hardening exponent were evaluated. © 2012 Elsevier B.V. (20 refs)
Main heading: Microstructure
Controlled terms: Strain hardening - Yield stress - Tensile strength
Uncontrolled terms: Change trends - Maximum strain-hardening exponents - Strain ratios - Strain-hardening exponent - Yield and tensile strength - Yield strength ratios
Classification Code: 537.1 Heat Treatment Processes - 951 Materials Science
Funding Details: Number: 2006AA06A107, Acronym: -, Sponsor: -; Number: 2008A-3005, Acronym: КННК, Sponsor: China National Petroleum Corporation; Number: YS32030203, Acronym: XSYU, Sponsor: Xi'an Shiyou University;
Funding text: This study was supported by the State 863 Project (grant no. 2006AA06A107), the Fundamental Research Subject of the Key Laboratory of China National Petroleum Corporation (CNPC, grant no. 2008A-3005), and the Materials Process Engineering Key Subject of Xi'an Shiyou University (grant no. YS32030203). The authors would like to thank CNPC for the financial and technical support as well as for their kind permission to publish this work.
Database: Compendex
Data Provider: Engineering Village
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67. Study on horizontal well fracture in low permeability reservoirs

Cai, Wenbin (1); Qin, Guowei (2); An, Yongfu (3); Zhang, Yunlong (3)
Source: *Advanced Materials Research*, v 524-527, p 1587-1590, 2012, *Natural Resources and Sustainable Development II*; **ISSN:** 10226680; **ISBN-13:** 9783037854174; **DOI:** 10.4028/www.scientific.net/AMR.524-527.1587; **Conference:** 1st International Conference on Energy and Environmental Protection, ICEEP 2012, June 23, 2012 - June 24, 2012; **Publisher:** Trans Tech Publications
Author affiliation: (1) Petroleum Engineering Academy, XI'an Shiyou University, XI'an, Shanxi, 710065, China (2) Exploration and Devlopment Research Insititute, Daqing Oilfield Company, Ltd., Daqing, Heilongjiang, 163712, China (3) Eighth Oil Production Plant of Changqing Oilfield Company, XI'an, Shanxi, 710065, China
Abstract: In the low permeability reservoirs development process, some times horizontal well is not meet the anticipant production for low vertical permeability or serious reservoir damage, so the horizontal well fracture is needed to improve production rate, several fractures would be created along the length of horizontal well to get the more production rate and ultimate recovery. The fracture shapes was introduced, the principle, characteristics and treatment steps of different Multi-interval fracturing technique was analyzed such as chemical isolation, mechanical isolation, hydraulic sand blast, and limited entry fracturing technology, the feature of limited entry treatment and staged fracturing treatment were discussed for providing some suggestion to field fracturing technology choosing. © (2012) Trans Tech Publications. (5 refs)
Main heading: Fracture
Controlled terms: Sustainable development - Petroleum reservoir engineering - Horizontal wells - Low permeability reservoirs - Chemical analysis
Uncontrolled terms: Chemical isolation - Development process - Fracture shape - Fracturing treatments - Mechanical isolation - Production rates - Reservoir damage - Vertical permeabilities
Classification Code: 512.1 Petroleum Deposits - 512.1.1 Oil Fields - 512.1.2 Petroleum Deposits : Development Operations - 951 Materials Science
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

68. Corrosion behaviors of super 13Cr martensitic stainless steel under drilling and completion fluids environment

Liu, Ya-Juan (1, 2); Lu, Xiang-Hong (1); Zhao, Guo-Xian (1); Chen, Chang-Feng (2); Xue, Yan (3)

Source: *Cailiao Gongcheng/Journal of Materials Engineering*, n 10, p 17-21+47, October 2012; **Language:** Chinese; **ISSN:** 10014381; **Publisher:** Beijing Institute of Aeronautical Materials (BIAM)
Author affiliation: (1) School of Materials Science and Engineering, Xi'an Shiyou University, Xi'an 710065, China (2) Department of Materials Science and Engineering, China University of Petroleum (Beijing), Beijing 102249, China (3) Xi'an Maurer Petroleum Engineering Laboratory, Xi'an 710065, China
Abstract: By simulating drilling and completion fluids environment, the performance of super 13Cr martensitic stainless tubular products against uniform corrosion, pitting, stress corrosion cracking (SCC) and acid liquid corrosion was studied. The results indicate that the uniform corrosion rate of super 13Cr martensitic stainless steel increases as the well depth increases. Further, the uniform corrosion rate of super 13Cr in gas phase is higher than the one in the liquid phase, but it is far less than 0.1mm/a both in liquid phase and gas phase corrosion conditions. Since super 13Cr martensitic stainless steel contained relatively higher Mo and Ni element, obvious pit corrosion and stress corrosion cracking did not occur under simulating corrosion environment. After the cyclic acid corrosion test, local corrosion including pitting, crevice corrosion, etc., did not occur either on the pipe body or on the coupling. (11 refs)
Main heading: Pitting
Controlled terms: Corrosive effects - Steel corrosion - Corrosion rate - Cracks - Crevice corrosion - Drilling fluids - Liquids - Stress corrosion cracking - Gases - Residual stresses - Martensitic stainless steel
Uncontrolled terms: Corrosion behavior - Corrosion environments - Cyclic acids - Drilling and completion fluids - Gas phase corrosion - Martensitic stainless - Tubular products - Uniform corrosion
Classification Code: 539.1 Metals Corrosion - 545.3 Steel
Database: Compendex
Data Provider: Engineering Village
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69. Slow-light element for tunable time delay based on optical microcoil resonator

Ma, Chengju (1, 2); Ren, Liyong (1); Xu, Yiping (1)
Source: *Applied Optics*, v 51, n 26, p 6295-6300, September 10, 2012; **ISSN:** 1559128X, **E-ISSN:** 15394522; **DOI:** 10.1364/AO.51.006295; **Publisher:** OSA - The Optical Society
Author affiliation: (1) State Key Laboratory of Transient Optics and Photonics, Xi'An Institute of Optics and Precision Mechanics, Chinese Academy of Sciences, Xi'an 710119, China (2) School of Science, Xi'An Shiyou University, Xi'an 710065, China
Abstract: We propose a simple and compact slow-light element by use of an optical microcoil resonator (OMR) constituted by two microfiber coils. Based on the matrix exponential method, we solve the coupled-wave equations of the OMR with n turns of microfiber coils and obtain a general solution. Simulations indicate that a tunable slow-light propagation can be obtained by controlling the coupling coefficient between the two adjacent microfiber coils by means of regulating the voltage applied to the ferroelectric crystal. A slow-light time delay up to 62 ps with a bandwidth of 0.4 nm is performed at the wavelength around 1.5 μm. © 2012 Optical Society of America. (33 refs)
Main heading: Slow light
Controlled terms: Wave equations - Resonators - Time delay - Timing circuits
Uncontrolled terms: Coupled wave equations - Coupling coefficient - Ferroelectric crystal - General solutions - Light elements - Matrix exponentials - Micro-fiber - Tunable time delays
Classification Code: 713 Electronic Circuits - 713.4 Pulse Circuits - 741.1 Light/Optics - 921.2 Calculus
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

70. Microstructure and mechanical properties of X80 pipeline steel with excellent deformability

Hao, Shi-Ying (1, 2); Gao, Hui-Lin (2); Yan, Kai-Juan (2); Zhang, Xiao-Yong (1, 2); Ji, Ling-Kang (3); Li, Wei-Wei (3)
Source: *Cailiao Gongcheng/Journal of Materials Engineering*, n 3, p 61-65, March 2012; **Language:** Chinese; **ISSN:** 10014381; **Publisher:** Beijing Institute of Aeronautical Materials (BIAM)
Author affiliation: (1) School of Materials Science and Engineering, Xi'an University of Architecture Technology, Xi'an 710048, China (2) School of Materials Science and Engineering, Xi'an Shiyou University, Xi'an 710065, China (3) CNPC Tubular Goods Research Institute, Xi'an 710065, China
Abstract: By Heating On-line Partitioning (HOP) method to obtain (B+M/A) dual phase, the microstructure and property of a dual phase pipeline steel are investigated. The results show that, in the context of meeting the strength and toughness requirements of the second west-east gas pipeline project in China, the (B+M/A) dual phase pipeline steel also possesses a lower yield/tensile ratio and higher uniform elongation, showing excellent deformation ability.

The bainitic matrix, M/A component and the precipitation of carbonitride are the microstructure characteristics of experimental steel. (10 refs)
Main heading: Microstructure
Controlled terms: Steel pipe - Deformation - Pipelines
Uncontrolled terms: Deformation abilities - Microstructure and mechanical properties - Microstructure and properties - Microstructure characteristics - Pipeline steels with excellent deformability - Strength and toughness - Uniform elongation - X80 pipeline steels
Classification Code: 545.3 Steel - 619.1 Pipe, Piping and Pipelines - 951 Materials Science
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

71. Safe life estimation of coke drum in service environment

Li, Zhen (1); Xue, Zhou (2); Wang, Xu (3); Li, Fenkun (2)
Source: *Journal of Pressure Vessel Technology, Transactions of the ASME*, v 134, n 3, 2012; **ISSN:** 00949930, **E-ISSN:** 15288978; **DOI:** 10.1115/1.4005882; **Article number:** 031601; **Publisher:** American Society of Mechanical Engineers (ASME)
Author affiliation: (1) Department of Mechanical Engineering, Xi'an Shiyou University, Xi'an 710065, Shaanxi, China (2) Second Construction Company of China National Petroleum, Lanzhou 730060, Gansu, China (3) SINOPEC Ningbo Engineering Company Limited, Ningbo 315103, Zhejiang, China
Abstract: It is generally known that delayed coke drums are operated under severe conditions by cyclic heating and quenching operation. It makes them susceptible to thermal fatigue. Therefore, fatigue failures have been identified in the skirt to shell junctures. In this study, the high-temperature fatigue crack initiation (HTFCI) life, Ni, and high-temperature fatigue (HTF) life, Nf, have been experimentally determined under two kinds of load spectrum by using specimens of 14Cr1MoR steel plate butt-weld. Comparing two groups of experimental result, the interaction between fatigue and creep is not significant at the test temperature. Furthermore, the expressions of HTFCI life and HTF life of 14Cr1MoR steel plate butt-weld are presented by regression analysis of the test results. According to the ANSYS finite element numerical simulation, the maximum equivalent strain amplitude of the connection weld area between the coke drum body and the skirt is 0.0032619. Taking account of the fatigue life safety coefficient and the number of heating and cooling cycles of coke drum in a year, the analysis shows that the safe life of coke drum is about 18 years, but the fatigue cracks occur in 8.6 years. As a result, this approach can be used to evaluate the safe life of delayed coke drums and can help for the maintenance of the equipment. © 2012 American Society of Mechanical Engineers. (8 refs)
Main heading: Coke
Controlled terms: Crack initiation - Low-cycle fatigue - Welds - Butt welding - Finite element method - Fatigue crack propagation - Thermal fatigue - Regression analysis
Uncontrolled terms: Ansys finite elements - Equivalent strains - Heating and cooling cycles - High temperature low cycle fatigues - High-temperature fatigue - Safe life - Service environment - Test temperatures
Classification Code: 524 Solid Fuels - 538.2 Welding - 538.2.1 Welding Processes - 921.6 Numerical Methods - 922.2 Mathematical Statistics - 951 Materials Science
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

72. Efficient aldol condensation by using modified CaO as solid-base catalysts

Tang, Ying (1); Chen, Gang (1); Lu, Yong (2)
Source: *Research on Chemical Intermediates*, v 38, n 3-5, p 937-946, March 2012; **ISSN:** 09226168, **E-ISSN:** 15685675; **DOI:** 10.1007/s11164-011-0430-8; **Publisher:** Kluwer Academic Publishers
Author affiliation: (1) College of Chemistry and Chemical Engineering, Xi'An Shiyou University, Xi'an, Shaanxi, China (2) Shanghai Key Laboratory of Green Chemistry and Chemical Processes, Department of Chemistry, East China Normal University, Shanghai 200062, China
Abstract: A new type of solid-base catalyst for aldol condensation reaction was prepared by modifying commercial CaO with benzyl bromide in a simple way. It was found that modified CaO can effectively catalyze the aldol condensation of acetophenone and benzaldehyde to produce chalcone with a high conversion and good selectivity. The catalyst gave a higher yield (90.5%) of chalcone than commercial CaO. The high catalytic activity and stability of this catalyst was related to the organic modifier with a hydrophilic functional group that improved the diffusion of grease to the catalyst surface and prevented its hydration. The influence of several reaction parameters, such as temperature, catalyst loading and the moisture absorption rate of modified CaO, was investigated. From the results, the basic centers of modified CaO are stable and hardly poisoned by CO2 unlike commercial CaO. The catalyst was

completely recyclable without significant loss in activity up to five reaction cycles. Moreover, this catalyst showed a promising future in providing an environmentally clean process for the industrial sector. © Springer Science+Business Media B.V. 2011. (21 refs)
Main heading: Surface treatment
Controlled terms: Condensation - Condensation reactions - Ketones - Catalyst activity
Uncontrolled terms: Aldol condensation - Catalyst loadings - Catalyst surfaces - High conversions - Industrial sector - Moisture absorption rates - Reaction parameters - Solid base catalysts
Classification Code: 802.2 Chemical Reactions - 802.3 Chemical Operations - 803 Chemical Agents and Basic Industrial Chemicals - 804 Chemical Products Generally - 804.1 Organic Compounds
Funding Details: Number: 2011JQ2014, Acronym: -, Sponsor: -; Number: 11JK0591, Acronym: -, Sponsor: Education Department of Shaanxi Province;
Funding text: Acknowledgments This work was financially supported by grants from Natural Science Research Plan Projects of Shaanxi Science and Technology Department (2011JQ2014), Scientific Research Program Funded by Shaanxi Provincial Education Department (No. 11JK0591) and the Open Founds of the Shanghai Key Laboratory of Green Chemistry and Chemical Process.
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

73. Design of sand washing and plug removal device with high pressure foam fluid jet

Cai, Wenbin (1); Qin, Guowei (2); He, Yan (3)
Source: *Applied Mechanics and Materials*, v 155-156, p 722-725, 2012, *Mechanical Engineering and Green Manufacturing II, MEGM 2012*; **ISSN:** 16609336, **E-ISSN:** 16627482; **ISBN-13:** 9783037853771; **DOI:** 10.4028/www.scientific.net/AMM.155-156.722; **Conference:** 2nd International Conference on Mechanical Engineering and Green Manufacturing, MEGM 2012, March 16, 2012 - March 18, 2012; **Sponsor:** National Natural Science Foundation of China; Chongqing University; Hunan Institute of Engineering; Chongqing Normal University; Shanghai Jiao Tong University; **Publisher:** Trans Tech Publications
Author affiliation: (1) Petroleum Engineering Academy, XI'an Shiyou University, Xi'an, Shanxi, 710065, China (2) Exploration and Devlopment Research Insititute, Daqing Oilfield Company Ltd., Daqing, Heilongjiang, 163712, China (3) Natural Gas Development Company, Geermu, Qinghai, 816000, China
Abstract: In the oil and gas production process, serious sand production causes reservoir and pipe blocked, which makes productivity declined, even stopped. It's the efficient means of sand washing and plug removal by using high-pressure foam fluid jet. The structure and performance of sand washing device determines the efficiency of sand washing and plug removal. The device's nozzle consists of anti-blocking valves, three kinds of nozzles with self-drive, rotation characteristics during the operation. The nozzles include sand washing nozzle, couple nozzle and power nozzle. This device can be used in horizontal wells with complex well bore situation to carry out sand and plug removal. The device has a good effect on sand washing and plug removal in the oil field. © (2012) Trans Tech Publications. (6 refs)
Main heading: Nozzle design
Controlled terms: Horizontal wells - Sand - Oil wells - Washing
Uncontrolled terms: Complex well - Device design - Foam fluids - High pressure - Oil and gas production - Sand production - Sand washing - Structure and performance
Classification Code: 408 Structural Design - 483.1 Soils and Soil Mechanics - 512.1.1 Oil Fields - 631.1 Fluid Flow, General
Database: Compendex
Data Provider: Engineering Village
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74. First-principles studies of structural, mechanical, electronic, optical properties and pressure-induced phase transition of CuInO2 polymorph

Liu, Wen-Ting (1); Liu, Qi-Jun (2); Liu, Zheng-Tang (2)
Source: *Physica B: Condensed Matter*, v 407, n 24, p 4665-4670, December 15, 2012; **ISSN:** 09214526; **DOI:** 10.1016/j.physb.2012.08.042; **Publisher:** Elsevier
Author affiliation: (1) School of Materials Science and Engineering, Xi'An Shiyou University, Xi'an, Shaanxi 710065, China (2) State Key Lab of Solidification Processing, School of Materials Science and Engineering, Northwestern Polytechnical University, Xi'an, Shaanxi 710072, China
Abstract: Using the first-principles density-functional theory within the generalized gradient approximation (GGA), we have investigated the structural, elastic, mechanical, electronic, and optical properties and phase transition of

CuInO2. Structural parameters including lattice constants and internal parameter, pressure effects and phase transition pressure were calculated. We have obtained the elastic coefficients, bulk modulus, shear modulus, Young's modulus and Poisson's ratio. We find that two phases of CuInO2 are indirect band gap semiconductors (F-Γ and H-Γ for 3R and 2H, respectively). Optical properties, including the dielectric function, refractive index, extinction coefficient, reflectivity, absorption coefficient, loss function and optical conductivity have been obtained for radiations of up to 30 eV. © 2012 Elsevier B.V. All rights reserved. (45 refs)
Main heading: Optical conductivity
Controlled terms: Density functional theory - Elastic moduli - Mechanical properties - Optical properties - Phase transitions - Pressure effects - Refractive index
Uncontrolled terms: Absorption coefficients - CuInO2 - Dielectric functions - Elastic coefficient - Extinction coefficients - First-principles study - Generalized gradient approximations - Indirect band gap - Internal parameters - Loss functions - Poisson's ratio - Pressure-induced phase transition - Structural parameter - Transition pressure - Young's Modulus
Classification Code: 421 Strength of Building Materials; Mechanical Properties - 741.1 Light/Optics - 801.4 Physical Chemistry - 931 Classical Physics; Quantum Theory; Relativity - 951 Materials Science
Funding Details: Number: 11JK0809, Acronym: -, Sponsor: Education Department of Shaanxi Province; Number: -, Acronym: XSYU, Sponsor: Xi'an Shiyou University;
Funding text: The authors acknowledge the financial support from the Scientific Research Program Funded by Shaanxi Provincial Education Department (Grant no. 11JK0809) and the Xi'an Shiyou University Foundation for Scientific Research (Grant no. YS29031213).
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

75. Study on fault-tolerant technique of downhole steering system for rotary steering drilling

Wang, Yue-Long (1); Liu, Zi-Li (1); Cheng, Wei-Bin (1); Yang, Ying-Na (1)
Source: *Proceedings of 2012 International Conference on Measurement, Information and Control, MIC 2012*, v 2, p 896-899, 2012, *Proceedings of 2012 International Conference on Measurement, Information and Control, MIC 2012*; **ISBN-13:** 9781457716027; **DOI:** 10.1109/MIC.2012.6273431; **Article number:** 6273431; **Conference:** 2012 International Conference on Measurement, Information and Control, MIC 2012, May 18, 2012 - May 20, 2012;
Publisher: IEEE Computer Society
Author affiliation: (1) Shaanxi Key Laboratory of Oil-Drilling Rigs Controlling Technique, Xi'an Petroleum University, Xi'an, 710065, China
Abstract: Downhole Control System in a modulated rotary steering drilling tool can automatically regulate the tool face angle to a particular position for controlling the bit direction. How to ensure the reliability of the system while it works in harsh environment is a key technique in this system. A degraded fault-tolerant system scheme based on multi-MCUs has been put forward according to the functional analysis of the system. Measurement and control functions, data acquisition and storage functions and communication decoding function are shared respectively by three MCUs when they are running normally. The system would be reconfigured based on task priority while they are partly fault, which make the system fault-tolerantly running. Some tests show that the redundant system design and degraded fault-tolerant system scheme are effectively. © 2012 IEEE. (10 refs)
Main heading: Digital storage
Controlled terms: Fault tolerance - Drilling - Microcontrollers - Data acquisition
Uncontrolled terms: Data acquisition and storage - Fault tolerant systems - Fault tolerant technique - Measurement and control - Multi-MCUs - Rotary steering - Rotary steering drilling tools - System reconfiguration
Classification Code: 722.1 Data Storage, Equipment and Techniques - 723.2 Data Processing and Image Processing
Database: Compendex
Data Provider: Engineering Village
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76. The main WFGD technologies and their development trend

Qu, Chengtun (1, 2); Su, Hongguang (1, 2); Tian, Jing (1, 2); Yang, Xue (1, 2); Wang, Xin (1, 2)
Source: *Advanced Materials Research*, v 599, p 510-515, 2012, *Advances in Environmental Engineering*; **ISSN:** 10226680; **ISBN-13:** 9783037855386; **DOI:** 10.4028/www.scientific.net/AMR.599.510; **Conference:** 2012 Global Conference on Civil, Structural and Environmental Engineering, GCCSEE 2012 and the 3rd International Symposium on Multi-field Coupling Theory of Rock and Soil Media and Its Applications, MCTRSM 2012, October 20, 2012 - October 21, 2012; **Publisher:** Trans Tech Publications

Author affiliation: (1) Key Laboratory of Environmental Pollution Control Technology, Reservoir Protection of Oilfield, Xi'an, Shaanxi,710065, China (2) The school of Chemistry and Chemical Engineering, Xi'an Shiyou University, Xi'an, shaanxi Province, Postal code:710065, China
Abstract: Four popular wet flue gas desulfurization processes were introduced in the paper, including their principles, advantages and disadvantages and application scale. Several process indexes were compared. Finally based on much analysis, the development trend of mainstream wet flue gas desulfurization is predicted. © (2012) Trans Tech Publications, Switzerland. (11 refs)
Main heading: Flue gases
Controlled terms: Flues - Desulfurization
Uncontrolled terms: Development trends - Present situation - Principle - Wet flue gas desulfurization
Classification Code: 451.1 Air Pollution Sources
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

77. Finite element generalized tooth contact analysis of double circular arc helical gears

Qu, Wentao (1); Peng, Xiongqi (2); Zhao, Ning (3); Guo, Hui (3)
Source: *Structural Engineering and Mechanics*, v 43, n 4, p 439-448, August 25, 2012; **ISSN:** 12254568; **DOI:** 10.12989/sem.2012.43.4.439; **Publisher:** Techno-Press
Author affiliation: (1) School of Mechanical Engineering, Xi'an Shiyou University, Xi'an 710065, China (2) School of Materials Science and Engineering, Shanghai Jiao Tong University, Shanghai 200030, China (3) School of Mechatronics, Northwestern Polytechnical University, Xi'an 710072, China
Abstract: This paper investigates the load sharing of double circular arc helical gears considering the influence of assembly errors. Based on a load sharing formulae, a three-dimensional finite element tooth contact analysis (TCA) is implemented with commercial software package ANSYS. The finite element grid for the double circular arc gear contact model is automatically generated by using the APDL (ANSYS Parameter Design Language) embedded in ANSYS. The realistic rotation of gears is achieved by using a coupling degree-of-freedom method. Numerical simulations are carried out to exemplify the proposed approach. The distribution of contact stress and bending stress under specific loading conditions are computed and compared with those obtained from Hertz contact theory and empirical formulae to demonstrate the efficiency of the proposed load sharing calculation formulae and TCA approach. Copyright © 2012 Techno Press. (18 refs)
Main heading: Finite element method
Controlled terms: Degrees of freedom (mechanics) - Helical gears - Stress analysis
Uncontrolled terms: Automatically generated - Commercial software - Double circular arcs - Double circular-arc gears - Hertz contact theory - Load share - Three dimensional finite elements - Tooth contact analysis
Classification Code: 601.2 Machine Components - 921.6 Numerical Methods - 931.1 Mechanics - 951 Materials Science
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

78. Study on growing thick AlGaN layer on c-plane sapphire substrate and free-standing GaN substrate

Wang, Danghui (1, 2); Zhou, Hao (1); Zhang, Jincheng (1); Xu, Shengrui (1); Zhang, Linxia (1); Meng, Fanna (1); Ai, Shan (1); Hao, Yue (1)
Source: *Science China: Physics, Mechanics and Astronomy*, v 55, n 12, p 2383-2388, December 2012, *Special Topic: Topological Insulators and Dirac Fermion*; **ISSN:** 16747348; **DOI:** 10.1007/s11433-012-4926-z; **Publisher:** Science in China Press
Author affiliation: (1) State Key Lab. of Fundamental Science on Wide Band-Gap Semiconductor Technology, School of Microelectronics, Xidian University, Xi'an 710071, China (2) School of Materials Science and Engineering, Xi'An ShiYou University, Xi'an 710065, China
Abstract: In this study, the thick AlGaN epilayers have been grown on the c-plane sapphire substrate and the free-standing GaN substrate using low-temperature AlN nucleation layers by low-pressure metal-organic chemical vapor deposition (LPMOCVD). High resolution X-ray diffraction (HRXRD), atom force microscopy (AFM), scanning electron microscopy (SEM), photoluminescence (PL) and Raman scattering measurements have been employed to study the crystal quality, threading dislocation density, surface morphology, optical properties and phonon properties of thick AlGaN epifilms. The results indicate that AlGaN epifilms crystal quality can be improved greatly when grown on the free-standing GaN substrate. We calculated the threading dislocation density and found that thick AlGaN epifilm grown

on the free-standing GaN substrate is much lower in total threading dislocation density than that grown on the sapphire substrate, although the surface morphology is rougher than that of sapphire substrate. © 2012 Science China Press and Springer-Verlag Berlin Heidelberg. (20 refs)
Main heading: Aluminum gallium nitride
Controlled terms: Aluminum nitride - Sapphire - Temperature - Optical properties - Organic chemicals - X ray diffraction analysis - Morphology - Organometallics - Semiconductor alloys - Scanning electron microscopy - Surface morphology - Dislocations (crystals) - Gallium nitride - Metallorganic chemical vapor deposition - III-V semiconductors
Uncontrolled terms: AlN nucleation layers - Atom force microscopy (AFM) - Crystal qualities - High-resolution x-ray diffraction - Low-pressure metal-organic chemical vapor depositions - Metal organic - Raman Scattering measurements - Threading dislocation densities
Classification Code: 482.2.1 Gems - 641.1 Thermodynamics - 712.1 Semiconducting Materials - 741.1 Light/Optics - 802.2 Chemical Reactions - 804.1 Organic Compounds - 804.2 Inorganic Compounds - 931.2 Physical Properties of Gases, Liquids and Solids - 951 Materials Science
Funding Details: Number: 2008ZX01002-002, Acronym: -, Sponsor: -; Number: 60736033,60890191, Acronym: NSFC, Sponsor: National Natural Science Foundation of China; Number: -, Acronym: -, Sponsor: Fundamental Research Funds for the Central Universities;
Funding text: This work was supported by the National Key Science and Technology Special Project, China (Grant No. 2008ZX01002-002), the Major Program and State Key Program of the National Natural Science Foundation of China (Grant Nos. 60890191 and 60736033), and the Fundamental Research Funds for the Central Universities, China (Grant No. JY10000904009)
Database: Compendex
Data Provider: Engineering Village
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79. Genetic mechanism of overpressure and its relationship with hydrocarbon accumulation in Dina-2 gasfield, Kuqa depression

Zhang, Fengqi (1, 2); Wang, Zhenliang (2); Zhao, Xuejiao (2); Song, Yubin (3)
Source: *Shiyou Xuebao/Acta Petrolei Sinica*, v 33, n 5, p 739-747, September 2012; **Language:** Chinese; **ISSN:** 02532697; **Publisher:** Science Press
Author affiliation: (1) School of Earth Sciences and Engineering, Xi'an Shiyou University, Xi'an 710065, China (2) Department of Geology, Northwest University, Xi'an 710069, China (3) Tazhong Exploration and Development Management Department, PetroChina Tarim Oilfield Company, Korla 841000, China
Abstract: Based on the distribution of formation pressure estimated from acoustic logging data and measured with the DST/RFT method, we investigated the genetic mechanism of overpressure in the Dina-2 gasfield of the Kuqa depression in combination with practical geological data and latest research results. The contribution of main overpressure mechanisms to the present overpressure was estimated, and lastly the forming process of overpressure and its correlation with natural gas accumulation were studied as well. The results show that disequilibrium compaction, tectonic stress and overpressure transmission are the main mechanisms of overpressure in the Dina-2 gasfield, of which the overpressure transmission caused by vertical opening of faults and fold formation is the most important influence factor. The gas accumulation in reservoirs of the Dina-2 gasfield shows synchroneity with overpressure formation. Reservoirs in the Dina-2 gasfield used to have a normal pressure system during the early oil-gas charging in the Kangcun stage. Rapid sedimentation in the Kuqa Formation sedimentary stage resulted in disequilibrium compaction, which forms an excess pressure of about 5 to 10 MPa in reservoirs. Vertical overpressure transmission formed by the episodic opening of faults and lateral overpressure transmission by folds and the horizontal tectonic stress under intensive tectonic compression greatly increased the scope of the excess pressure since denudation stage of the Kuqa Formation, which makes reservoirs form an excess pressure of about 40 to 50 MPa. This stage is the major period of the extremely high overpressure formation and gas accumulation in the Dina-2 gasfield. (32 refs)
Main heading: Compaction
Controlled terms: Acoustic logging - Gas industry - Faulting - Gases - Natural gas fields
Uncontrolled terms: Abnormal high pressure - Dina-2 gasfield - Kuqa depression - Overpressure transmissions - Tectonic compressions
Classification Code: 484.1 Earthquake Measurements and Analysis - 512.2.1 Natural Gas Fields - 522 Gas Fuels - 751.2 Acoustic Properties of Materials - 941.2 Acoustic Variables Measurements
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

80. Effect of microstructures on corrosion of X80 pipeline steel in an alkaline soil

Xu, Congmin (1); Li, Rongbiao (2); Wang, Jilong (3); Zhang, Ganggang (2)
Source: *Advanced Materials Research*, v 476-478, p 321-328, 2012, *New Materials and Processes*; **ISSN:** 10226680; **ISBN-13:** 9783037853719; **DOI:** 10.4028/www.scientific.net/AMR.476-478.321; **Conference:** 3rd International Conference on Manufacturing Science and Engineering, ICMSE 2012, March 27, 2012 - March 29, 2012; **Sponsor:** Fujian University of Technology; Xiamen University; Fuzhou University; Huaqiao University; University of Wollongong; **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Materials Science and Engineering, Xi'an Shiyou University, Xi'an 710065, China (2) PetroChina Changqing Oilfield Company, Construction Engineering Department, Xian 710086, China (3) Refinery Plant of Yumen Oil Field Branch Corporation, Yumen 735200, China
Abstract: The influence of microstructures with different heat treatments to stimulate the weld fusion zone and HAZ on corrosion properties of X80 pipeline steel was investigated in alkaline sand soil using electrochemical measurement and surface analysis(SEM, EDS and XRD). The results showed that the microstructure of X80 steel affected the properties of corrosion product layers. Generally, X80 steels with heat treatments had a higher corrosion rate than the as-received steel. The increase of pearlite content enhanced the corrosion of ferrite through a galvanic effect. The appearance of upper bainite and martenite increased further the activity of the steel. The corrosion product layer formed on as-received X80 steel was compact and complete, provided an effective protection to the underneath steel. However, the corrosion product layers on the heat-treated X80 steels were generally inhomogeneous, loose, porous and defective, and provided minor protectiveness. The cathodic/anodic reactions of X80 steel are dominated by the oxygen reduction and formation of iron oxides that deposit on the steel surface which was through a physical block effect to afford the protection. © (2012) Trans Tech Publications. (22 refs)
Main heading: Microstructure
Controlled terms: Corrosion protection - Steel pipe - Galvanic corrosion - Steel corrosion - Surface analysis - Electrolytic reduction - Underground corrosion - Heat treatment - Pipeline corrosion - Pipelines - Soils - Corrosion rate - Welds - Corrosive effects - Iron oxides
Uncontrolled terms: Alkaline soils - Block effects - Corrosion products - Corrosion properties - Corrosion property - Electrochemical measurements - Galvanic effect - Oxygen Reduction - Sand soils - Steel surface - Upper bainite - Weld fusion zone and HAZ - Weld fusion zones - X-80 pipeline - X80 steel - XRD
Classification Code: 483.1 Soils and Soil Mechanics - 533.1 Ore Treatment - 537.1 Heat Treatment Processes - 538.2 Welding - 539.1 Metals Corrosion - 539.2 Corrosion Protection - 545.3 Steel - 619.1 Pipe, Piping and Pipelines - 802.2 Chemical Reactions - 804.2 Inorganic Compounds - 951 Materials Science
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

81. Study on a-plane GaN etching residual stress using Raman scattering

Dang-Hui, Wang (1, 2); Yue, Hao (1); Jin-Cheng, Zhang (1); Sheng-Rui, Xu (1); Zhi-Wei, Bi (1); Sheng-Lei, Zhao (1); Fan-Na, Meng (1); Xiao-Yong, Xue (1); Lin-Xia, Zhang (1)
Source: *Optoelectronics and Advanced Materials, Rapid Communications*, v 6, n 7-8, p 761-764, 2012; **ISSN:** 18426573, **E-ISSN:** 20653824; **Publisher:** National Institute of Optoelectronics
Author affiliation: (1) State Key Lab. of Fundamental Sci. on Wide Band-Gap Semiconductor Technol. Sch. of Microelectronics, Xidian University, Xi'an 710071, China (2) School of Materials Science and Engineering of Xi'an ShiYou University, Xi'an 710065, China
Abstract: In this study, we have studied the etching residual stress for a-plane GaN films grown on r-plane (11¯02) sapphire substrate with three different structures by low-pressure metal-organic vapor deposition (LPMOCVD). Scanning electron microscopy (SEM) and Raman scattering have been employed to study the surface morphology and residual stress before and after KOH solution etching. The three phonon modes of E2 (high), A1 (TO) and E1 (TO) and surface etching morphology of a-plane GaN have been observed. We calculated the residual stress using the biaxial elastic stress theory. Conclusions show that E2 (high) phonon shifts decrease after etching with KOH solution for a-plane GaN epilayer, which shows that KOH solution etching make the residual stress release. Based on the results, we indicated that there exists an approximate linear relation between residual stress etched by KOH solution and biaxial elastic stress system in a-plane GaN epilayers. (20 refs)
Main heading: Residual stresses
Controlled terms: Gallium nitride - Potassium hydroxide - III-V semiconductors - Organic chemicals - Phonons - Organometallics - Sapphire - Etching - Scanning electron microscopy - Surface stress - Epilayers - Raman scattering - Metallorganic chemical vapor deposition
Uncontrolled terms: Different structure - Elastic stress - KOH solution - Linear relation - Metal organic - Raman frequency shifts - Sapphire substrates - Surface etching
Classification Code: 482.2.1 Gems - 712.1 Semiconducting Materials - 741.1 Light/Optics - 802.2 Chemical Reactions - 804.1 Organic Compounds - 804.2 Inorganic Compounds

Database: Compendex
Data Provider: Engineering Village
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82. The design of solar heating system used in oilfield

Dong, Pengmin (1); Zhao, Bo (1); Zhu, Zongliang (2); Qiang, Yongdong (3); Yao, Zhigang (3); Zhang, Haidong (3)
Source: *Advanced Materials Research*, v 461, p 389-392, 2012, *Advanced Building Materials and Structural Engineering*; **ISSN:** 10226680; **ISBN-13:** 9783037853603; **DOI:** 10.4028/www.scientific.net/AMR.461.389;
Conference: 2012 International Conference on Building Materials and Structural Engineering, BMSE2012, March 19, 2012 - March 20, 2012; **Sponsor:** Wuhan Institute of Technology; Beijing Material Research Center; International Material Research Society; **Publisher:** Trans Tech Publications
Author affiliation: (1) Mechanical Engineering, Xi'an ShiYou University, Second Dianzi Rode, Xi'an 710065, Shanxi, China (2) Qingxi Operational Zone of Petro China Yumen Oilfield Company, 735200, Gansu, China (3) WDEC TuHa Mud Logging and Engineering Company, 838202, Xinjiang, China
Abstract: Based on the natural environment of YuMen oilfield, we designed solar collector and auxiliary power heating system. We lay great emphasis on the area of the collector, auxiliary electrical heating power,the volume of water tank and pipeline design in this system. After being used, this system warmth achieves the expected effect and meets the requirement of heating in severe condition such as Yumen in china. © (2012) Trans Tech Publications, Switzerland. (3 refs)
Main heading: Solar heating
Controlled terms: Passive solar - Pipelines - Water tanks - Heating equipment - Oil well flooding
Uncontrolled terms: Auxiliary power - Electrical heating - Expected effects - Heating system - Natural environments - Pipeline design - Solar heating system
Classification Code: 446.1 Water Supply Systems - 511.1 Oil Field Production Operations - 619.1 Pipe, Piping and Pipelines - 619.2 Tanks - 657.1 Solar Energy and Phenomena
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

83. Experiments of judging combustion state of in situ combustion

Yuan, Shi-Bao (1); Ning, Kui (2); Jiang, Hai-Yan (3); Sun, Xi-Yong (2); Zhang, Hong-Tao (2); Wang, Xiu-Wen (2)
Source: *Zhongguo Shiyou Daxue Xuebao (Ziran Kexue Ban)/Journal of China University of Petroleum (Edition of Natural Science)*, v 36, n 5, p 114-118, October 2012; **Language:** Chinese; **ISSN:** 16735005; **DOI:** 10.3969/j.issn.1673-5005.2012.05.021; **Publisher:** University of Petroleum, China
Author affiliation: (1) College of Petroleum Engineering in Xi'an Shiyou University, Xi'an 710065, China (2) Department of Reserve Gas, Liaohe Oilfield Company, Panjin 124010, China (3) School of Petroleum Engineering in China University of Petroleum, Qingdao 266580, China
Abstract: Monitoring the variations of oil, gas and water production in the process of in situ combustion is needed. In order to use the monitoring data fully, on the basis of combustion tube experiments, the output gas variation with time was monitored. The conception of oxygen content derivative and gas index(the ratio of output gas actual value and theoretical value) were introduced. Using the output gas composite curve and combined with the combustion mechanism, in situ combustion process was divided and each reaction stage features were examined. The results show that in situ combustion process can be divided into five stages such as ventilation, ignition, stabilization, attenuation and extinction stage. The gas production curve can be used as a basis to judge in situ combustion stage and combustion state. In situ combustion stable combustion stage, output end gas index is about 0.66-1, if it's less than 0.66, the combustion status is bad, even fire extinction occurs. This analysis method is simple and feasible, and the result agrees well with the field data. (8 refs)
Main heading: Gases
Controlled terms: Ignition
Uncontrolled terms: Combustion mechanism - Combustion stage - Combustion state - Gas content - Gas production curves - In-situ combustion process - Theoretical values - Water production
Classification Code: 521.1 Fuel Combustion
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

84. Correlation analysis method and its application to interpretationof regional gravity and magnetic anomalies in eastern Xinjiang, China

Zhang, Chunguan (1); Yuan, Bingqiang (1); Li, Yuhong (2)
Source: *Advanced Materials Research*, v 546-547, p 628-633, 2012, *Electrical Insulating Materials and Electrical Engineering*; **ISSN:** 10226680; **ISBN-13:** 9783037854518; **DOI:** 10.4028/www.scientific.net/AMR.546-547.628; **Conference:** 2012 International Conference on Electrical Insulating Materials and Electrical Engineering, EIMEE 2012, May 25, 2012 - May 27, 2012; **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Petroleum Resources, Xi'an Shiyou University, 18 East Section, Dianzi 2 Road, Xi'an, Shaanxi, China (2) Xi'an Center of Geological Survey, China Geological Survey, 438 the East of Youyi Road, Xi'an, Shaanxi, China
Abstract: Based on detailed analysis of Bouguer gravity anomaly and magnetic anomaly by reduced to the pole, this paper uses correlation analysis method to analyze regional gravity and magnetic anomalies of different filter scales, including filter scales of 50km, 90km, and 130km, and then discusses the contributing factors of local gravity and magnetic anomalies in eastern Xinjiang. The results show that regional gravity and magnetic anomalies are cogenetic anomalies in some areas, such as Hangou, and northern Lamamiao, Jingrquan, and western Qijiaojing, gravity and magnetic anomalies are allogenic anomalies in other areas. The study reveals that regional negative gravity anomalies are chiefly caused by Cenozoic - Mesozoic with larger thickness and lower density, and regional positive magnetic anomalies are mainly caused by Precambrian metamorphic basement with stronger magnetic property uplifting in Turpan - Hami and Santanghu basin. Mantle substances uplifting mainly cause regional positive gravity and magnetic anomalies in Junggar basin. Regional positive gravity anomalies are mainly caused by Pre-Mesozoic with higher density uplifting, and regional negative magnetic anomalies are chiefly caused by sedimentary formation and intermediate acidity rock with larger thickness and weaker magnetism and Precambrian metamorphic basement. © (2012) Trans Tech Publications, Switzerland. (8 refs)
Main heading: Magnetism
Controlled terms: Sedimentary rocks - Buildings - Metamorphic rocks - Correlation methods
Uncontrolled terms: Correlation analysis - Geologic interpretation - Magnetic anomalies - Metamorphic basements - Xinjiang
Classification Code: 402 Buildings and Towers - 482.2 Minerals - 701.2 Magnetism: Basic Concepts and Phenomena - 922.2 Mathematical Statistics
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

85. Correlation analysis method and its application to interpretation of local gravity and magnetic anomalies in eastern Tianshan, China

Zhang, Chunguan (1); Yuan, Bingqiang (1); Li, Yuhong (2)
Source: *Advanced Materials Research*, v 482-484, p 358-361, 2012, *Advanced Composite Materials*; **ISSN:** 10226680; **DOI:** 10.4028/www.scientific.net/AMR.482-484.358; **Conference:** 3rd international Conference on Manufacturing Science and Engineering, ICMSE 2012, March 27, 2012 - March 29, 2012; **Sponsor:** Fujian University of Technology; Xiamen University; Fuzhou University; Huaqiao University; University of Wollongong; **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Petroleum Resources, Xi'An Shiyou University, 18 East Section, Dianzi 2 Road, Xi'an, Shaanxi, China (2) Xi'An Center of Geological Survey, China Geological Survey, 438 the East of Youyi Road, Xi'an, Shaanxi, China
Abstract: Based on detailed analysis of Bouguer gravity anomaly and magnetic anomaly by reduced to the pole, this paper uses correlation analysis method to analyze local gravity and magnetic anomalies of different filter scales, including filter scales of 50km, 90km, and 130km, and then discusses the contributing factors of local gravity and magnetic anomalies in eastern Tianshan. The results show that local gravity and magnetic anomalies are cogenetic anomalies in some areas, such as northeastern Santanghu, Shaqiuhe, southern Huangtuya, northern Dikan, and western Qijiaojing, and gravity and magnetic anomalies are allogenic anomalies in other areas. The study reveals that local gravity and magnetic anomalies are chiefly caused by Cenozoic - Mesozoic strata with lower density and weaker magnetism in northern Santanghu, and igneous rock with higher density and stronger magnetism in Shaqiuhe, and uplifting of older strata in northern Dikan, and Carboniferous strata with higher density and lower magnetism than its south and north areas in Qijiaojing. The study also reveals that local negative gravity and magnetic anomalies are chiefly caused by Cenozoic - Mesozoic strata with lower density and weaker magnetism, while local positive gravity and magnetic anomalies are mainly caused by Pre-Jurassic strata higher density and stronger magnetism in southern Huangtuya. © (2012) Trans Tech Publications, Switzerland. (4 refs)
Main heading: Magnetism
Controlled terms: Correlation methods

Uncontrolled terms: Bouguer gravity anomalies - Carboniferous strata - Cenozoic - Cogenetic anomalies - Contributing factor - Correlation analysis - Eastern Tianshan - Filter scale - Lower density - Magnetic anomalies - Mesozoic
Classification Code: 701.2 Magnetism: Basic Concepts and Phenomena - 922.2 Mathematical Statistics
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

86. A study of a new stage cementing tool and its field application

Nie, Cui Ping (1); Liu, Gui Xi (2); Lu, Ping Fu (2)
Source: *Advanced Materials Research*, v 524-527, p 1318-1321, 2012, *Natural Resources and Sustainable Development II*; **ISSN:** 10226680; **ISBN-13:** 9783037854174; **DOI:** 10.4028/www.scientific.net/AMR.524-527.1318;
Conference: 1st International Conference on Energy and Environmental Protection, ICEEP 2012, June 23, 2012 - June 24, 2012; **Publisher:** Trans Tech Publications
Author affiliation: (1) Xi'an Petroleum University, xi'an, Shaanxi, China (2) ChuanQing Drilling and Exploration Engineering Co., Ltd., CNPC, ChengDu, China
Abstract: Stage cementing is usually applied in primary cementing in gas wells and long interval cementing. A stage tool that is free of drilling plug after cementing is a recently emerged new tool. Free of drilling of plug (DOP-FREE) after cementing can shorten well construction period, simplify well casing program, and then reduce rig time and drilling cost. It has the tendency to take place of conventional stage tool. But its operation reliability on DOP-free affects its extensive application in field application. In this paper, an innovative DOP-free stage cementing tool study and field application has been introduced in detail. Comparing to conventional stage tool, the specifical tool has not only operation and casing seal reliability as conventional, but also high reliability in DOP-free. Systematic tests and pilot field application indicated that it is also suitable for complicated hole cementing condition, and the DOP-free tool will substitute conventional stage tool next. © (2012) Trans Tech Publications. (7 refs)
Main heading: Cementing (shafts)
Controlled terms: Oil well drilling - Reliability
Uncontrolled terms: Casing program - Cementing tools - DOP - Drilling cost - Drilling plugs - Field application - Gas well - High reliability - In-field - Lost circulation - Operation reliability - Rig time - Seal reliability - Systematic test - Well constructions
Classification Code: 512.1.2 Petroleum Deposits : Development Operations
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

87. The research of solar heating system for wild barrack

Dong, Pengmin (1); Zhao, Bo (1); Zhu, Zongliang (2); Qiang, Yongdong (3); Yao, Zhigang (3); Zhang, Haidong (3)
Source: *Advanced Materials Research*, v 461, p 402-406, 2012, *Advanced Building Materials and Structural Engineering*; **ISSN:** 10226680; **ISBN-13:** 9783037853603; **DOI:** 10.4028/www.scientific.net/AMR.461.402;
Conference: 2012 International Conference on Building Materials and Structural Engineering, BMSE2012, March 19, 2012 - March 20, 2012; **Sponsor:** Wuhan Institute of Technology; Beijing Material Research Center; International Material Research Society; **Publisher:** Trans Tech Publications
Author affiliation: (1) Mechanical Engineering, Xi'an ShiYou University, Second Dianzi Rode, Xi'an 710065, Shanxi, China (2) Qingxi Operational Zone of Petro China Yumen Oilfield Company, 735200, Gansu, China (3) WDEC TuHa Mud Logging and Engineering Company, 838202, Xinjiang, China
Abstract: This article is based on China's Gansu Jiuquan areas of natural environment, in view of field operations commonly used wild barrack winter heating requirements, design the solar energy storage and auxiliary electrical heating system, and the flat collector to use double working medium indirect heating mode, with antifreeze as collection hot flowing, with water as storage and heating medium, effectively solved the extreme temperatures anti-freeze guard against sandstorm problem, achieve the safe, energy-saving and environmental protection heating goal. © (2012) Trans Tech Publications, Switzerland. (3 refs)
Main heading: Passive solar
Controlled terms: Storms - Energy conservation - Solar heating - Hot working - Heating equipment
Uncontrolled terms: Electrical heating - Extreme temperatures - Field operation - Heating medium - Heating mode - Jiuquan - Natural environments - Solar heating system - Wild barrack - Winter heating - Working medium
Classification Code: 443.3 Precipitation - 525.2 Energy Conservation - 535.2 Metal Forming - 657.1 Solar Energy and Phenomena
Database: Compendex

Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

88. Comparison of two water-fraction calculation models in oil-water two-phase flow

Li, Lipin (1, 2); Dang, Ruirong (2); Huang, Yanqun (3); Gao, Guowang (2)
Source: *Yi Qi Yi Biao Xue Bao/Chinese Journal of Scientific Instrument*, v 33, n 4, p 924-929, April 2012; **Language:** Chinese; **ISSN:** 02543087; **Publisher:** Science Press
Author affiliation: (1) Northwestern Polytechnical University, Xi'an 710072, China (2) Key Laboratory of Photoelectric Logging and Detecting of Oil and Gas, Ministry of Education, Xi'an Shiyou University, Xi'an 710065, China (3) No.203 Research Institute of China Ordnance Industries, Xi'an 710065, China
Abstract: Oil-water two-phase flow exists widely in oil exploration, storage and transportation, chemical engineering, energy resource and other industrial fields. Water fraction is one of the important parameters in oil-water two-phase system. Accurate measurement of water fraction is related not only to measurement method, but also to calculation model. Using conductance measurement method, a water fraction calculation model was built based on parallel resistance-capacitance network. And the simulation and experiment results are compared with those applying Maxwell calculation model for 3 different flow patterns. Simulation and experiment results show that the measurement errors are basically identical for the parallel resistance-capacitance network model and Maxwell model in bubble flow. While the errors using parallel resistance-capacitance network model are lower than those using Maxwell model in annular flow and stratified flow. Therefore the parallel resistance-capacitance network model has higher precision for water-fraction calculation than Maxwell model and is suitable for annular flow, stratified flow and bubble flow. (17 refs)
Main heading: Two phase flow
Controlled terms: Energy resources - Aerodynamics - Capacitance - Hydrodynamics - Thermal stratification
Uncontrolled terms: Accurate measurement - Conductance measurement - Maxwell models - Oil-water two phase flows - Oil-water two-phase system - Parallel resistance-capacitance models - Storage and transportations - Water fraction
Classification Code: 525.1 Energy Resources and Renewable Energy Issues - 631.1 Fluid Flow, General - 651.1 Aerodynamics, General - 701.1 Electricity: Basic Concepts and Phenomena
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

89. Scaling the kernel function based on the separating boundary in input space: A data-dependent way for improving the performance of kernel methods

Sun, Jiancheng (1); Li, Xiaohe (2); Yang, Yong (3); Luo, Jianguo (1); Bai, Yaohui (1)
Source: *Information Sciences*, v 184, n 1, p 140-154, February 1, 2012; **ISSN:** 00200255; **DOI:** 10.1016/j.ins.2011.08.028; **Publisher:** Elsevier Inc.
Author affiliation: (1) School of Software and Communication Engineering, Jiangxi University of Finance and Economics, Nanchang 330013, China (2) School of Computer Science, Xi'An Shiyou University, Xi'an 710065, China (3) School of Information Technology, Jiangxi University of Finance and Economics, Nanchang 330013, China
Abstract: The performance of a kernel method often depends mainly on the appropriate choice of a kernel function. In this study, we present a data-dependent method for scaling the kernel function so as to optimize the classification performance of kernel methods. Instead of finding the support vectors in feature space, we first find the region around the separating boundary in input space, and subsequently scale the kernel function correspondingly. It is worth noting that the proposed method does not require a training step to enable a specified classification algorithm to find the boundary and can be applied to various classification methods. Experimental results using both artificial and real-world data are provided to demonstrate the robustness and validity of the proposed method. © 2011 Elsevier Inc. All rights reserved. (35 refs)
Main heading: Conformal mapping
Controlled terms: Vector spaces - Geometry
Uncontrolled terms: Classification algorithm - Classification methods - Classification performance - Conformal transformation - Data-dependent methods - Kernel function - Kernel methods - Riemannian geometry
Classification Code: 921 Mathematics
Funding Details: Number: 50074024,60933009,61072103, Acronym: NSFC, Sponsor: National Natural Science Foundation of China;
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Database: Compendex
Data Provider: Engineering Village

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90. Preparation and swelling inhibition of polyammonium

Deng, Qiang (1); Wei, Dengfeng (2); Ye, Zhengqin (2, 3); Xu, Jinfang (1)
Source: *Advanced Materials Research*, v 482-484, p 1317-1320, 2012, *Advanced Composite Materials*; **ISSN:** 10226680; **DOI:** 10.4028/www.scientific.net/AMR.482-484.1317; **Conference:** 3rd international Conference on Manufacturing Science and Engineering, ICMSE 2012, March 27, 2012 - March 29, 2012; **Sponsor:** Fujian University of Technology; Xiamen University; Fuzhou University; Huaqiao University; University of Wollongong; **Publisher:** Trans Tech Publications
Author affiliation: (1) College of Chemistry and Chemical Engineering, Xi'An Shiyou University, Xi'an, 710065, China (2) Dingbian Oil Extraction Factory, Yanchang Oil Field Co. Ltd., Yan'an 716100, China (3) School of Petroleum Engineering, Southwest Petroleum University, Chengdu, 610500, China
Abstract: A new anti-swelling agent was synthesized by polymerizing epichlorohydrin and dimethyl amine polymer. The swelling inhibition properties were investigated over clay and shale. It was found that the clay inhibition of swelling properties was greatly enhanced compared with common inorganic salts. However, to shale, the swelling properties did not inhibited efficiently by using prepared polymers. Furthermore, the influence of cross linking of polyammonium to the swelling ability of prepared polymer has been also carried out by using triethylenetetramine cross linking agent. In the case of shale, the swelling inhibit properties was improved after cross link, while opposite swelling effect was observed over clay. © (2012) Trans Tech Publications, Switzerland. (8 refs)
Main heading: Swelling
Controlled terms: Crosslinking - Shale
Uncontrolled terms: Anti-swelling - Cationic polymers - Clay inhibition - Clay swelling - Cross linking agents - Crosslinks - Dimethylamines - Epichlorohydrin - Inhibition property - Inorganic salts - Polyammonium - Swelling effect - Swelling properties - Triethylenetetramine
Classification Code: 802.2 Chemical Reactions - 951 Materials Science
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

91. Soap header extensions for service oriented architecture security

Zhu, Yangpeng (1, 2); Zhang, Jing (1, 3)
Source: *International Journal of Digital Content Technology and its Applications*, v 6, n 17, p 350-357, September 2012; **ISSN:** 19759339, **E-ISSN:** 22339310; **DOI:** 10.4156/jdcta.vol6.issue17.38; **Publisher:** Advanced Institute of Convergence Information Technology
Author affiliation: (1) Institute of Computer Science and Engineering, Xi'an University of Technology, Xi'an 710048, China (2) School of Economic and Management, Xi'an Shiyou University, Xi'an 710065, China (3) State Key Laboratory for Manufacturing Systems Engineering, Xi'an Jiaotong University, Xi'an 710048, China
Abstract: Service Oriented Architecture is popular for heterogeneous enterprise systems integration for its character of loosely coupling and open standard. Web service is a main technology to develop SOA application and has some security problems in cross domain system communication. In this article we proposed a SOA security solution for authorization cross domain web service invoking and its execution process. We used two layers management method to meet the cross domain invoking requirement. In order to ensure authorized user can access the security web service, we described the web service running principle and extended the soap header to transmit user identification token. At last, we implement the soap header extension encryption way in.NET environment. We successfully used this solution in some group enterprise systems integration. (17 refs)
Main heading: Web services
Controlled terms: Information services - Service oriented architecture (SOA) - Cryptography - Websites
Uncontrolled terms: Enterprise system - Execution process - Security - Security problems - Security solutions - Soap headers - System communications - User identification
Classification Code: 722.4 Digital Computers and Systems - 903.4 Information Services
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

92. Soap header extensions for cross domain SaaS security

Zhu, Yangpeng (1, 2); Zhang, Jing (1); Li, Junhuai (1)
Source: *ICIC Express Letters*, v 6, n 8, p 2167-2172, 2012; **ISSN:** 1881803X; **Publisher:** ICIC Express Letters Office

Author affiliation: (1) School of Computer Science and Engineering, Xi'an University of Technology, No. 5, South Jinhua Road, Xi'an 710048, China (2) School of Economic and Management, Xi'an Shiyou University, No. 18, East Dianzi 2nd Road, Xi'an 710065, China
Abstract: Software as a Service (SaaS) is becoming a popular research field in software development for its feature of low total costs, easy implementation and zero infrastructures for small and media enterprises. How to exchange information between SaaS application to enterprises' other heterogeneous applications such as Customer Resource Management, Enterprise Resource Planning and Human Resource Management is a challenging problem. In this paper we proposed a soap header extension solution which can integrate SaaS applications with enterprises' other applications and secure the mutual access. A two layers domain management method was proposed to meet the security of cross domain heterogeneous SaaS application communication. At last, we implement the soap header extension solution in dot NET environment. © 2012 ICIC International. (12 refs)
Main heading: Web services
Controlled terms: Human resource management - Natural resources management - Software as a service (SaaS) - Resource allocation - Enterprise resource planning - Information management - Software design
Uncontrolled terms: Cross-domain - Customer resource management - Management method - Media enterprise - Research fields - Security - Software as a service - Total costs
Classification Code: 722.4 Digital Computers and Systems - 723.1 Computer Programming - 723.2 Data Processing and Image Processing - 723.5 Computer Applications - 912.2 Management - 912.4 Personnel
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

93. Soap header extensions for cross domain SaaS security

Zhu, Yangpeng (1, 2); Zhang, Jing (1); Li, Junhuai (1)
Source: *ICIC Express Letters, Part B: Applications*, v 6, n 8, p 2167-2172, 2012; **ISSN:** 21852766; **Publisher:** ICIC Express Letters Office
Author affiliation: (1) School of Computer Science and Engineering, Xi'an University of Technology, No. 5, South Jinhua Road, Xi'an 710048, China (2) School of Economic and Management, Xi'an Shiyou University, No. 18, East Dianzi 2nd Road, Xi'an 710065, China
Abstract: Software as a Service (SaaS) is becoming a popular research field in soft-ware development for its feature of low total costs, easy implementation and zero infrastructures for small and media enterprises. How to exchange information between SaaS application to enterprises' other heterogeneous applications such as Customer Resource Management, Enterprise Resource Planning and Human Resource Management is a challenging problem. In this paper we proposed a soap header extension solution which can integrate SaaS applications with enterprises' other applications and secure the mutual access. A two layers domain management method was proposed to meet the security of cross domain heterogeneous SaaS application communication. At last, we implement the soap header extension solution in dot NET environment. © 2012 ICIC International. (12 refs)
Main heading: Web services
Controlled terms: Natural resources management - Enterprise resource planning - Human resource management - Information management - Software as a service (SaaS) - Resource allocation
Uncontrolled terms: Cross-domain - Customer resource management - Management method - Media enterprise - Research fields - Security - Software as a service - Total costs
Classification Code: 722.4 Digital Computers and Systems - 723.2 Data Processing and Image Processing - 912.2 Management - 912.4 Personnel
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

94. Integrated drilling engineering design system based on Web Services

Liu, Zhikun (1, 2); Li, Qi (1, 2); Liu, Hongshan (3); Wen, Liang (2)
Source: *Advanced Materials Research*, v 482-484, p 1874-1880, 2012, *Advanced Composite Materials*; **ISSN:** 10226680; **DOI:** 10.4028/www.scientific.net/AMR.482-484.1874; **Conference:** 3rd international Conference on Manufacturing Science and Engineering, ICMSE 2012, March 27, 2012 - March 29, 2012; **Sponsor:** Fujian University of Technology; Xiamen University; Fuzhou University; Huaqiao University; University of Wollongong; **Publisher:** Trans Tech Publications
Author affiliation: (1) CMOE Key Laboratory of Petroleum Engineering, China University of Petroleum, Beijing 102249, China (2) Institute of Petroleum Engineering, Xi'An Shiyou University, Shannxi Xi'an 710065, China (3) China Petroleum Pipeline Telecom and Electricity Engineering Corp., Hebei Langfang 065000, China

Abstract: Direct towards the current research status of domestic drilling design, according to the characteristics of distributed, cross-platform and openness in Web Services, It is proposed to build a integrated drilling engineering design system included design basis, data support, drilling engineering design, cementing design, drilling fluid design and management of design result under the network environment using Web Services technology. The system would accomplished using Oracle9i and VS2008, so that it would become a reality that more drilling engineering staff or design staff distributed in different parts in a unified software platform for collaborative design. © (2012) Trans Tech Publications, Switzerland. (7 refs)
Main heading: Web services
Controlled terms: Information management - Drilling fluids - Websites
Uncontrolled terms: Collaborative design - Cross-platform - Current research status - Data support - Drilling engineering - Drilling engineering design - Information sharing - Integrated designs - Network environments - Software platforms - Web Services technologies
Classification Code: 511.1 Oil Field Production Operations
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

95. Numerical analysis of electrical impedance scanning imaging of breast

Zhang, Feng (1, 2); Luo, Limin (1); Bao, Xudong (1); Chen, Beijing (3); Zhang, Yue (1)
Source: *Dongnan Daxue Xuebao (Ziran Kexue Ban)/Journal of Southeast University (Natural Science Edition)*, v 42, n 5, p 869-874, September 2012; **Language:** Chinese; **ISSN:** 10010505; **DOI:** 10.3969/j.issn.1001-0505.2012.05.014; **Publisher:** Southeast University
Author affiliation: (1) School of Computer Science and Engineering, Southeast University, Nanjing 210096, China (2) College of Computer Science, Xi'an Shiyou University, Xi'an 710065, China (3) College of Computer and Software, Nanjing University of Information Science and Technology, Nanjing 210044, China
Abstract: The existing models for analyzing electrical impedance scanning imaging (EISI) may produce results significantly different from real clinic findings. According to women's breast structure, Chinese women's breast size, electric parameters of breast, and the structure of EISI probe, an improved EISI model is presented. Statistic analysis of EISI parameters is presented by the finite element method (solving quasi-static equation of the imaging model) and the Yates method (analysis of variance). Results indicate that the measured current at breast surface can display corresponding disturbance when there is cancerous lesion within breast due to different conductance in breast cancerous tissue and surrounding normal tissue. Degree of current disturbance is related with the breast size, the depth and radius of cancerous lesion, the conductance of surrounding tissue of cancerous lesion, and the interaction between above parameters. If the breast size and the depth of cancerous lesion can be decreased by measurement jig, the detection performance of breast cancer can be improved. (11 refs)
Main heading: Tissue
Controlled terms: Medical imaging - Scanning - Finite element method - Electric impedance - Electric impedance measurement
Uncontrolled terms: Breast carcinomas - Cancerous lesions - Current disturbances - Detection performance - Electric parameters - Electrical impedance scanning - Imaging model - Statistic analysis
Classification Code: 461.1 Biomedical Engineering - 461.2 Biological Materials and Tissue Engineering - 701.1 Electricity: Basic Concepts and Phenomena - 746 Imaging Techniques - 921.6 Numerical Methods - 942.2 Electric Variables Measurements
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

96. Removal of hydrogen sulphide from high salinity wastewater by emulsion liquid membrane

Yaoqiang, Hu (1); Ningsheng, Zhang (1); Chengtun, Qu (2); Fei, He (3); Yongli, Yan (2)
Source: *Canadian Journal of Chemical Engineering*, v 90, n 1, p 120-125, February 2012; **ISSN:** 00084034, **E-ISSN:** 1939019X; **DOI:** 10.1002/cjce.20528; **Publisher:** Wiley-Liss Inc.
Author affiliation: (1) School of Energy and Power Engineering, Xi'an Jiaotong University, Xi'an 710049, China (2) School of Chemistry and Chemical Engineering, Xi'an Shiyou University, Xi'an 710065, China (3) Research Institute of Shaanxi Yanchang Petroleum(Group) Co. Ltd., Xi'an 710075, China
Abstract: This article presents a experimental study on the removal of hydrogen sulphide (H2S) from high salinity wastewater by emulsion liquid membrane (ELM). The ELM contains diethanolamine (DEA) as carrier, kerosene as solvent and span 80 as surfactant. The fundamental parameters (viz. surfactant concentration, carrier concentration,

strip phase concentration, phase ratio, agitation speed and time) affecting the removal of H2S were investigated to select the optimum combination of process parameters. The results showed the optimal governing parameters were: inner phase NaOH aqueous solution 2.0wt%, Surfactant (span 80) 5.0vol%, carrier (DEA) 6.0vol%, treat ratio 1:5, agitation speed 250rpm, agitation time 15min, respectively, and removal efficiency of 97.3% was achieved. © 2011 Canadian Society for Chemical Engineering. (29 refs)
Main heading: Solutions
Controlled terms: Carrier concentration - Liquid membranes - Emulsification - Hydrogen sulfide - Sodium hydroxide - Surface active agents
Uncontrolled terms: Agitation speed - Emulsion liquid membrane (ELM) - Governing parameters - High salinity wastewaters - Optimum combination - Process parameters - Removal efficiencies - Surfactant concentrations
Classification Code: 701.1 Electricity: Basic Concepts and Phenomena - 802.3 Chemical Operations - 803 Chemical Agents and Basic Industrial Chemicals - 804.2 Inorganic Compounds
Database: Compendex
Data Provider: Engineering Village
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97. An effective AFPSO(adaptive fuzzy particle swarm optimization) algorithm for obtaining optimal selection of IT services

Wang, Runxiao (1); Yang, Yuntao (1, 2); Li, Junting (1, 3)
Source: *Xibei Gongye Daxue Xuebao/Journal of Northwestern Polytechnical University*, v 30, n 6, p 911-918, December 2012; **Language:** Chinese; **ISSN:** 10002758; **Publisher:** Northwestern Polytechnical University
Author affiliation: (1) Department of Computer Aided Manufacturing, Northwestern Polytechnical University, Xi'an 710072, China (2) Distribution Network Research Center, Shaanxi Regional Electric Power Group Co. Ltd., Xi'an 710061, China (3) School of Economics and Management, Xi'an Shiyou University, Xi'an 710065, China
Abstract: Sections 1 and 2 of the full paper explain our AFPSO algorithm mantioned in the title, which we believe is effective. The core of sections 1 and 2 consists of: (1) according to the requirements of business processes in IT services, an optimal selection model of IT services was established; response time, execution cost, reliability and availability were set as its objective functions; (2) an optimization algorithm to solve the model was designed; the self learning factor and global learning factor were adaptively tuned by the fuzzy inference rules so as to improve the convergence speed and global searching ability; (3) the optimal IT service unit which satisfied the QoS constraining condition of business process was obtained. Section 3 gives an application example; test results, presented in Table 5, and their analysis confirm preliminarily indeed the effectiveness of the proposed model and our AFPSO algorithm. (17 refs)
Main heading: Membership functions
Controlled terms: Fuzzy inference - Particle swarm optimization (PSO) - Adaptive algorithms - Learning algorithms - Quality of service - Decision making - Convergence of numerical methods
Uncontrolled terms: Fuzzy inference rules - Global searching ability - IT services - Learning factor - Optimal selection models - Optimization algorithms - Reliability and availability - Resouece allocation
Classification Code: 721.1 Computer Theory, Includes Formal Logic, Automata Theory, Switching Theory, Programming Theory - 723 Computer Software, Data Handling and Applications - 723.4.1 Expert Systems - 723.4.2 Machine Learning - 912.2 Management - 921 Mathematics - 921.5 Optimization Techniques - 921.6 Numerical Methods
Database: Compendex
Data Provider: Engineering Village
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98. Analysis and study of static pressure distribution in an optical cable spool using distributed fiber Bragg gratings

Ren, Liyong (1); Ma, Chengju (1, 2); Tang, Feng (3); Qu, Enshi (1); Han, Xu (1)
Source: *Proceedings of SPIE - The International Society for Optical Engineering*, v 8351, 2012, *Third Asia Pacific Optical Sensors Conference*; **ISSN:** 0277786X; **ISBN-13:** 9780819490278; **DOI:** 10.1117/12.913783; **Article number:** 835119; **Conference:** 3rd Asia Pacific Optical Sensors Conference, January 31, 2012 - February 3, 2012; **Sponsor:** Engineers Australia; **Publisher:** SPIE
Author affiliation: (1) State Key Laboratory of Transient Optics and Photonics, Xi'an Institute of Optics and Precision Mechanics, Chinese Academy of Sciences, Xi'an 710119, China (2) School of Science, Xi'an Shiyou University, Xi'an 710065, China (3) Xi'an Institute of Modern Control Technology, Xi'an 710065, China
Abstract: We present a theoretical model to study the static pressure distribution among the layers of an optical fiber cable spool based on the force analysis of the cable system. Using the distributed fiber Bragg grating (FBG)

sensing technique, the static pressures within the fiber cable layers of the spool were measured according to the Bragg wavelength shifts of the FBGs embedded in the cable. The effects of the cable spool shrinkage owing to the pressure from outer fiber cable layers on the cable tension and the radial pressure were analyzed in detail. As a result, the relationship between the static pressure upon the fiber and the resulted Bragg wavelength shift of the FBG was deduced. The static pressure distribution of the fiber optical cable spool is obtained both in theory and experiment. Theoretical simulations coincide with experimental results. This technology provides us a real-time method to monitor the inner pressure among the fiber cable layers during the optical cable winding process. © 2011 Copyright Society of Photo-Optical Instrumentation Engineers (SPIE). (13 refs)
Main heading: Fiber Bragg gratings
Controlled terms: Pressure distribution - Optical cables - Reels
Uncontrolled terms: Axial direction strains - Bragg wavelength shift - Fiber optical cables - Radial direction strains - Sensing techniques - Static pressure distributions - Theoretical modeling - Theoretical simulation
Classification Code: 691.2 Materials Handling Methods - 717.2 Optical Communication Equipment - 931.1 Mechanics
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

99. Study on the static and dynamic fracture mechanism of different casing-drilling steel grades

Xu, Tianhan (1, 2); Jin, Zhihao (1); Feng, Yaorong (3); Song, Shengyin (3); Wang, Danghui (2)
Source: *Materials Characterization*, v 67, p 1-9, May 2012; **ISSN:** 10445803; **DOI:** 10.1016/j.matchar.2012.02.016;
Publisher: Elsevier Inc.
Author affiliation: (1) State Key Laboratory for Mechanical Behavior of Materials, School of Materials Science and Engineering, Xi'An Jiaotong University, Xi'an 710049, China (2) School of Materials Science and Engineering, Xi'An Shiyou University, Xi'an 710065, China (3) Tubular Goods Research Centre of CNPC, Xi'an 710065, China
Abstract: The tensile and impact properties of three different types of casing drilling steels were investigated. Results show that P110 exhibits a higher yield and ultimate tensile strength compared with the N80 and K55 specimens. All tensile fractures follow the dimple fracture mechanism. The impact toughness values of N80 and P110 steels show no remarkable difference. However, both N80 and P110 absorb up to about five times the impact energy absorbed by the K55 specimen. The impact fractures of the K55 and P110 steels exhibit cleavage and ductile fracture mechanisms, respectively, whereas N80 steel primarily follows quasi-cleavage and ductile fracture mechanisms. The microstructures underneath the tensile fracture surface show noticeable deformation compared with those underneath the impact fracture surface. K55 steel microstructure variance in the tensile process is affected by the size of the inclusions as well as by the orientation relative to the inclusion and the normal stress. © 2012 Elsevier Inc. All rights reserved. (18 refs)
Main heading: Ductile fracture
Controlled terms: Tensile strength - Microstructure
Uncontrolled terms: Casing drilling steels - Fracture mechanisms - Fracture surface characterisation - Tensile and impact properties - Transition of microstructures
Classification Code: 951 Materials Science
Funding Details: Number: 2006AA06A107, Acronym: -, Sponsor: -; Number: 2008A-3005, Acronym: CNPC, Sponsor: China National Petroleum Corporation; Number: -, Acronym: XSYU, Sponsor: Xi'an Shiyou University;
Funding text: This study was supported by the State 863 Project (grant no. 2006AA06A107), the Fundamental Research Subject of the Key Laboratory of China National Petroleum Corporation (CNPC, grant no. 2008A-3005), and the Materials Process Engineering Key Subject of Xi'an Shiyou University (grant no. YS32030203). The authors would like to thank CNPC for the financial and technical support as well as for their kind permission to publish this work.
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

100. Ultra-low permeability reservoir logging series evaluation in HQ area

Sun, Baodian (1); Song, Ziqi (1, 2); Cheng, Zhigang (1); Jing, Cheng (3); He, Yufei (1, 2); Zhang, Liang (1, 2); Duan, Qiong (3); Li, Miao (3)
Source: *Shiyou Diqiu Wuli Kantan/Oil Geophysical Prospecting*, v 47, n 3, p 483-490, June 2012; **Language:** Chinese;
ISSN: 10007210; **Publisher:** Science Press
Author affiliation: (1) Oil and Gas Evaluation Center, CNPC Logging Co. Ltd., Xi'an, Shaanxi 710077, China (2) College of Petroleum Engineering, Xi'an Shiyou University, Xi'an, Shaanxi 710065, China (3) College of Petroleum Engineering, China University of Petroleum (East China), Qingdao, Shandong 266555, China

Abstract: The reservoir Chang 6 in HQ area is characterized by low porosity, low permeability, complex lithology, and pore structure. This makes logging response very complicated. Hydrocarbon in the reservoir is less than 8% of the rock volume. Using ultra-low permeability identification and permeability characteristics analysis, our study focuses on the optimization evaluation of 11 types of logging. After statistical analysis of logging responses of more than 1000 reservoirs in 100 wells, we divide these 11 types of logging into 3 kinds of responses, good, normal or poor response. The statistical analysis shows that the different logging methods have different functions and effects. In lithology logging series, the best one is SP logging, CAL and Pe logging are normal, and GR logging is a poor one. In porosity logging series, the best one is DEN logging, then CNL, and the last one is AC. In resistivity logging series, array induction logging is the best, Russian induction logging is normal, and dual induction logging & micro-electrodes are poor. (14 refs)
Main heading: Porosity
Controlled terms: Lithology - Petroleum reservoir engineering - Statistical methods - Induction logging - Electrodes
Uncontrolled terms: Complex lithology - Economical and practical logging series - Low permeability - Permeability characteristics - Practical effect - Resistivity logging - Ultra low permeability - Ultra-low permeability reservoirs
Classification Code: 481.1 Geology - 512.1.2 Petroleum Deposits : Development Operations - 922.2 Mathematical Statistics - 931.2 Physical Properties of Gases, Liquids and Solids
Database: Compendex
Data Provider: Engineering Village
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101. Ti-incorporated ZnO films synthesized via magnetron sputtering and its optical properties

Chen, Haixia (1); Guo, Wenge (1); Ding, Jijun (2); Ma, Shuyi (3)
Source: *Superlattices and Microstructures*, v 51, n 4, p 544-551, April 2012; **ISSN:** 07496036, **E-ISSN:** 10963677; **DOI:** 10.1016/j.spmi.2012.02.003; **Publisher:** Academic Press
Author affiliation: (1) School of Science, Xi'An Shiyou University, Xi'an, Shaanxi 710065, China (2) Electronic Materials Research Laboratory, Ministry of Education, Xi'An Jiaotong University, Xi'an, Shaanxi 710049, China (3) College of Physics and Electronics Engineering, Northwest Normal University, Lanzhou, Gansu 730070, China
Abstract: Undoped and Ti-doped ZnO films were deposited using radio frequency reactive magnetron sputtering at various sputtering powers. The crystal structures, surface morphology, chemical state and optical properties in Ti-doped ZnO films were systematically investigated via X-ray diffraction (XRD), atomic force microscopy (AFM), X-ray photoelectron spectroscopy (XPS) and ultraviolet visible (UV-Vis) spectrophotometer. Results indicated that titanium atoms may replace zinc atomic sites substitutionally or incorporate interstitially in the hexagonal lattices, and a moderate quantity of Ti atoms exist in the form of sharing the oxygen with Zn atoms and hence improve the (0 0 2) orientation. The photoluminescence (PL) spectra of the Ti-doped ZnO films contain one main blue peak, whose intensity increased with the increase of sputtering power. Our results indicated that a higher compressive stress in Ti-doped ZnO films results in a lower optical band gap and a lower transmittance, and various Ti impurities can affect the concentration of the interstitial Zn and O vacancies. © 2012 Elsevier Ltd. All rights reserved. (23 refs)
Main heading: Optical properties
Controlled terms: Metallic films - Atomic force microscopy - Zinc oxide - II-VI semiconductors - Zinc - Crystal atomic structure - Magnetron sputtering - Energy gap - Crystal impurities - X ray diffraction - X ray photoelectron spectroscopy
Uncontrolled terms: Atomic sites - Chemical state - Hexagonal lattice - Photoluminescence spectrum - Radio frequency reactive magnetron sputtering - Sputtering power - Ti-doped ZnO films - Titanium atoms
Classification Code: 546.3 Zinc and Alloys - 712.1 Semiconducting Materials - 741.1 Light/Optics - 741.3 Optical Devices and Systems - 804.2 Inorganic Compounds - 931.3 Atomic and Molecular Physics - 933.1.1 Crystal Lattice
Funding Details: Number: YS29031223, Acronym: -, Sponsor: -; Number: YS29030801, Acronym: -, Sponsor: -; Number: 11074198, Acronym: -, Sponsor: -; Number: 11JK0768, Acronym: -, Sponsor: -;
Funding text: This work was supported by the National Nature Science Foundations of China (Grants 11074198), Special Program for Scientific Research of Shaanxi Educational Committee (Grants 11JK0768), Innovation Fund of Xi'an Shiyou University (Grants YS29030801) and the Doctoral Scientific Research Startup Foundation of Xi'an Shiyou University (Grants YS29031223).
Database: Compendex
Data Provider: Engineering Village
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102. Dynamic analysis on hydrocarbon migration of accumulation periods in low permeability-tight sandstone reservoir

Zhang, Feng-Qi (1, 2); Wang, Zhen-Liang (2); Wu, Fu-Li (1); Gao, Xing-Jun (3); Luo, Ran-Hao (3); Rui, Zhenhua (4)

Source: *Zhongguo Shiyou Daxue Xuebao (Ziran Kexue Ban)/Journal of China University of Petroleum (Edition of Natural Science)*, v 36, n 4, p 32-38, August 2012; **Language:** Chinese; **ISSN:** 16735005; **DOI:** 10.3969/j.issn.1673-5005.2012.04.006; **Publisher:** University of Petroleum, China
Author affiliation: (1) School of Earth Sciences and Engineering, Xi'an Shiyou University, Xi'an 710065, China (2) Department of Geology, Northwest University, Xi'an 710069, China (3) Shanxi Yanchang Petroleum(Group)Corporation Limited, Xi'an 710075, China (4) Independent Project Analysis Corporation, Ashburn VA 20147, United States
Abstract: By restoring the overpressure of main accumulation period in the deep of Kelasu structural belt of Kuqa depression and Yanchang formation of Yishan slope of Ordos Basin, the possible dynamic conditions during the process of hydrocarbon migration in the low permeability-tight sandstone reservoir were estimated combined with the analysis on reservoir physical properties evolution. The results show that the main dynamics of hydrocarbon migration in the low permeability-tight sandstone reservoir is characterized by diversity. The reservoir becomes tight in the natural gas accumulation period in the deep of Kelasu structural belt. The main dynamic of natural gas migration is the overpressure formed by the multiple factors of high-rate deposition, hydrocarbon generation, and tectonic compression and so on. The reservoir does not become tight in the oil infill injection early and middle stage in Yanchang formation of Yishan slope of Ordos Basin. The oil migrates laterally due to buoyancy. The reservoir becomes tight in the oil infill injection late stage. It mainly migrates laterally along the residual pathways that are oil-wet due to long-term contact with oil. The main dynamic of oil migration is capillary force and the difference of excess pressure among the reservoirs also plays a role in the oil migration. So the oil migration of main accumulation periods in Yanchang formation of Yishan slope of Ordos Basin is the joint action of the multi-stage and multi-dynamic. (23 refs)
Main heading: Sandstone
Controlled terms: Hydrocarbons - Petroleum reservoir engineering - Metamorphic rocks - Low permeability reservoirs - Natural gas - Tight gas
Uncontrolled terms: Hydrocarbon migration - Hydrodynamic analysis - Kuqa depression - Low permeability-tight sandstones - Main accumulation periods - Ordos Basin - Reservoir tight history
Classification Code: 482.2 Minerals - 512.1 Petroleum Deposits - 512.1.2 Petroleum Deposits : Development Operations - 512.2 Natural Gas Deposits - 522 Gas Fuels - 804.1 Organic Compounds
Database: Compendex
Data Provider: Engineering Village
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103. Three-dimensional finite element numerical simulation for time-domain electromagnetic casing inspection technology

Song, Xijin (1, 2); Guo, Baolong (1); Wu, Xianxiang (1); Dang, Ruirong (2); Li, Lipin (3)
Source: *Yi Qi Yi Biao Xue Bao/Chinese Journal of Scientific Instrument*, v 33, n 4, p 829-835, April 2012; **Language:** Chinese; **ISSN:** 02543087; **Publisher:** Science Press
Author affiliation: (1) Institute of Intelligent Control and Image Engineering, Xidian University, Xi'an 710071, China (2) Key Laboratory of Photoelectric Logging and Detecting of Oil and Gas, Ministry of Education, Xi'an Shiyou University, Xi'an 710065, China (3) Northwestern Polytechnical University, Xi'an 710072, China
Abstract: A design scheme for non-contact casing detection equipment is presented. Finite element simulation technologies are used to calculate the time-domain electromagnetic responses of vertical and horizontal magnetic probes. The results show that the vortex generated by vertical magnetic probe is coaxial with the casing, while the vortex cased by horizontal magnetic probe is perpendicular to the former. The received signal of the magnetic probe is mainly come from the metal casing. And the response characteristics of the two magnetic probes are discussed separately under the conditions that there are hole, vertical crack and horizontal crack on the metal casing. The electromagnetic response simulation results for different diameter holes indicate that the two magnetic probes are all have high resolution for the hole-type damage. Results for the vertical and horizontal cracks with different parameters show that the horizontal magnetic probe has no ability to judge the changes of the vertical crack length. It is also found that the vertical magnetic probe has higher sensitivity to the changes of the horizontal crack width, but has weaker recognition effect to the changes of its length. The measurement results for different casing damages confirm the correctness of the numerical simulations. (14 refs)
Main heading: Vortex flow
Controlled terms: Cracks - Electromagnetic simulation - Probes - Finite element method - Numerical models - Eddy current testing - Time domain analysis
Uncontrolled terms: Eddy current distribution - Hole - Horizontal cracks - Time domain electromagnetic methods - Vertical crack
Classification Code: 631.1 Fluid Flow, General - 701.1 Electricity: Basic Concepts and Phenomena - 921 Mathematics - 921.6 Numerical Methods
Database: Compendex
Data Provider: Engineering Village

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104. Grooving corrosion of oil coiled tubes manufactured by electrical resistance welding

Bi, Zongyue (1, 2); Wang, Rong (3); Jing, Xiaotian (1)
Source: *Corrosion Science*, v 57, p 67-73, April 2012; **ISSN:** 0010938X; **DOI:** 10.1016/j.corsci.2011.12.033;
Publisher: Elsevier Ltd
Author affiliation: (1) The Faculty of Materials Science and Engineering, Xi'an University of Technology, Xi'an 710048, China (2) Baoji Petroleum Steel Pipe Co., Ltd., Baoji City 721008, Shaanxi Province, China (3) School of Materials Science and Engineering, Xi'an Shiyou University, Xi'an 710065, China
Abstract: The characteristics of grooving corrosion of oil coiled tubes by electric resistance welding were investigated by using electrochemical polarization tests and an immersed corrosion test. The welded tube exhibited severe localized corrosion in the welding zone. The post-weld heat treatments reduced the sensitivity of grooving corrosion. A corrosion groove occurred at the fusion line. The local heat treatment for the welding zone at 930 °C adding the whole heat treatment for tubes at 690 °C was beneficial to improve the resistance to the grooving corrosion. The reasons of the grooving corrosion were discussed from the microstructures and chemical compositions of the weld. © 2011. (22 refs)
Main heading: Resistance welding
Controlled terms: Heat resistance - Heat treatment - Welds - Corrosion resistance - Localized corrosion - Steel corrosion - Tubes (components) - Polarization - Electrochemical corrosion - Electric resistance
Uncontrolled terms: Chemical compositions - Corrosion tests - Electrical-resistance welding - Electrochemical polarization test - Grooving Corrosion - Local heat treatment - Post weld heat treatment - Potential parameters
Classification Code: 537.1 Heat Treatment Processes - 538.2 Welding - 538.2.1 Welding Processes - 539.1 Metals Corrosion - 545.3 Steel - 619.1 Pipe, Piping and Pipelines - 701.1 Electricity: Basic Concepts and Phenomena - 801.4.1 Electrochemistry - 802.2 Chemical Reactions
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

105. Seismic wave field separation and denoising in linear domain via singular value decomposition(SVD)

Shen, Hong-Yan (1, 2); Li, Qing-Chun (3)
Source: *Meitan Xuebao/Journal of the China Coal Society*, v 37, n 4, p 627-633, April 2012; **Language:** Chinese;
ISSN: 02539993; **Publisher:** China Coal Society
Author affiliation: (1) School of Petroleum Resources, Xi'an Shiyou University, Xi'an 710065, China (2) Key Laboratory of Tectonics and Petroleum Resources of Ministry of Education, China University of Geosciences, Wuhan 430074, China (3) College of Geology Engineering and Geometrics, Chang'an University, Xi'an 710054, China
Abstract: Due to the differences of propagation characteristics, apparent velocity and coherence in seismic signals, based on apparent velocities, the authors aligned target signals into those of best horizontal coherence by linear transform methods (such as NMO, linear moveout correction, etc.). By means of singular value decomposition(SVD), reconstructed signals by extracting the singular values of target signals. Then through inverse linear transforming, accomplished seismic wave field separation as well as noise attenuation afterwards. (24 refs)
Main heading: Singular value decomposition
Controlled terms: Separation - Data handling - Seismic waves - Signal processing - Mathematical transformations - Seismology
Uncontrolled terms: Apparent velocity - Linear transform - Noise attenuation - Propagation characteristics - Seismic data processing - Seismic wave field separation and denoising - Singular values - Wave field separation
Classification Code: 484 Seismology - 484.1 Earthquake Measurements and Analysis - 716.1 Information Theory and Signal Processing - 723.2 Data Processing and Image Processing - 802.3 Chemical Operations - 921 Mathematics - 921.3 Mathematical Transformations
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

106. Modeling and testing of static pressure within an optical fiber cable spool using distributed fiber Bragg gratings

Ma, Chengju (1, 2); Ren, Liyong (1); Qu, Enshi (1); Tang, Feng (3); Liang, Quan (3)
Source: *Optics Communications*, v 285, n 24, p 4949-4953, November 1, 2012; **ISSN:** 00304018; **DOI:** 10.1016/j.optcom.2012.07.064; **Publisher:** Elsevier B.V.

Author affiliation: (1) State Key Laboratory of Transient Optics and Photonics, Xi'An Institute of Optics and Precision Mechanics, Chinese Academy of Sciences, Xi'an 710119, China (2) School of Science, Xi'An Shiyou University, Xi'an 710065, China (3) Xi'An Institute of Modern Control Technology, Xi'an 710049, China
Abstract: Based on the force analysis, we establish a theoretical model to study the static pressure distribution of the fiber cable spool for the fiber optic guided missile (FOG-M). Simulations indicate that for each fiber layer in the fiber cable spool, the applied static pressure on it asymptotically converges as the number of fiber layers increases. Using the distributed fiber Bragg grating (FBG) sensing technique, the static pressure of fiber cable layers in the spool on the cable winding device was measured. Experiments show that the Bragg wavelength of FBG in every layer varies very quickly at the beginning and then becomes gently as the subsequent fiber cable was twisted onto the spool layer by layer. Theoretical simulations agree qualitatively with experimental results. This technology provides us a real-time method to monitor the pressure within the fiber cable layer during the cable winding process. © 2012 Elsevier B.V. All rights reserved. (16 refs)
Main heading: Fiber Bragg gratings
Controlled terms: Cables - Fiber optics - Winding
Uncontrolled terms: Axial direction strains - Fiber cable spools - Fiber optic guided missile (FOG M) - Radial direction strains - Sensing techniques - Static pressure distributions - Theoretical modeling - Theoretical simulation
Classification Code: 691.2 Materials Handling Methods - 741.1.2 Fiber Optics
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

107. Application of digital phase sensitive detection for electromagnetic propagation logging while drilling

Liu, Shenghu (1); Xing, Yamin (2)
Source: *Advanced Materials Research*, v 468-471, p 546-549, 2012, *Automation Equipment and Systems*; **ISSN:** 10226680; **DOI:** 10.4028/www.scientific.net/AMR.468-471.546; **Conference:** 3rd international Conference on Manufacturing Science and Engineering, ICMSE 2012, March 27, 2012 - March 29, 2012; **Sponsor:** Fujian University of Technology; Xiamen University; Fuzhou University; Huaqiao University; University of Wollongong; **Publisher:** Trans Tech Publications
Author affiliation: (1) Key Laboratory of Photoelectric Logging and Detecting of Oil and Gas, Ministry of Education, Xi'an Shiyou University, Xian, Shannxi, 710065, China (2) Quality Supervision and Inspection Center of Oil Industry Instruments, CNPC, Xi an Shiyou University, Xian, Shannxi 710065, China
Abstract: Intense electromagnetic interference while drilling prevents traditional analog phase sensitive detection (APSD) from correctly acquiring electromagnetic wave signal of logging while drilling (LWD). A digital phase sensitive detection (DPSD) utilizes high-performance floating-point DSP and FPGA to separately process real part and imaginary part of the acquired logging signal, changes traditional calculating method, improves processing speed and calculating precision. The programmable technique used can fully utilize logging information, simplify control logic, improve precision of timing control and measuring precision. Discussed are the principle, characteristics, implement of circuit and analysis of experimental data. Testing result shows that the DPSD may utilize logging information effectively and optimize the LWD system. © (2012) Trans Tech Publications. (7 refs)
Main heading: Logging while drilling
Controlled terms: Drilling - Electromagnetic pulse - Electromagnetic logging - Digital arithmetic
Uncontrolled terms: Calculating methods - Calculating precision - Control logic - Electromagnetic propagation - Experimental data - Imaginary parts - Logging tools - Logging while drilling - Logging while drilling (LWD) - Phase sensitive detection - Processing speed - Real part - Testing results - Timing control
Classification Code: 512.1.2 Petroleum Deposits : Development Operations - 701 Electricity and Magnetism - 721.1 Computer Theory, Includes Formal Logic, Automata Theory, Switching Theory, Programming Theory - 921.6 Numerical Methods
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

108. Preparation and characterization of a titanium opaque porcelain

Guo, Litong (1, 2); Shi, Yao (1); Guo, Lizhi (3); Zhang, Qian (4); Liu, Xuemei (1); Xu, Cheng (1); Guo, Tianwen (4)
Source: *Materials and Manufacturing Processes*, v 27, n 11, p 1189-1192, November 1, 2012; **ISSN:** 10426914, **E-ISSN:** 15322475; **DOI:** 10.1080/10426914.2012.663124; **Publisher:** Bellwether Publishing, Ltd.

Author affiliation: (1) School of Materials Science and Engineering, China University of Mining and Technology, Jiangsu Xuzhou 221116, China (2) School of Mechanical and Electronic Engineering, China University of Mining and Technology, Xuzhou, China (3) Xi'An Shiyou University, Xi'an, China (4) Fourth Military Medical University, Xi'an, China
Abstract: The titanium opaque porcelain was synthesized through normal melting-derived route. The porcelain was characterized by thermal expansion, X-ray diffraction (XRD), and cytotoxicity tests. The results of XRD showed that the main phase of the opaque porcelain was SnO2. The Vickers hardness and flexure strength increased with increasing concentration of SnO 2. The thermal expansion coefficient of opaque porcelains decreased with increasing concentration of SnO2 (or decreased with decreasing concentration of SiO2). The one-way ANOVA test indicated that there was no significant difference between the bonding strength of self-made titanium porcelain systems and super porcelain Ti-22. In this research, all measured bonding strengths were higher than 25MPa (ISO 9693 standard). The methyl thiazolyl tetrazolium assay results demonstrated that the cytotoxicity of the titanium opaque porcelain was ranked as zero. © 2012 Copyright Taylor and Francis Group, LLC. (13 refs)
Main heading: Titanium
Controlled terms: X ray diffraction - Porcelain - Bond strength (materials) - Cytotoxicity - Silica - Vickers hardness - Thermal expansion
Uncontrolled terms: Bonding strength - Cytotoxicity test - Dental - Flexure strength - Methyl thiazolyl tetrazolium assays - Opaque - Opaque porcelain - Thermal expansion coefficients
Classification Code: 461.9 Biology - 542.3 Titanium and Alloys - 641.1 Thermodynamics - 812.1 Ceramics - 951 Materials Science
Funding Details: Number: 81100789, Acronym: NSFC, Sponsor: National Natural Science Foundation of China; Number: 20090095120017, Acronym: MOE, Sponsor: Ministry of Education of the People's Republic of China; Number: 20100481173, Acronym: -, Sponsor: China Postdoctoral Science Foundation; Number: JX 111744, Acronym: -, Sponsor: Fundamental Research Funds for the Central Universities;
Funding text: ACKNOWLEDGMENTS The authors gratefully acknowledge the Fourth Military Medical University for providing support for porcelain fusion and in vitro bioactivity tests. This work was supported by the National Natural Science Foundation of China (No. 81100789), China Postdoctoral Science Foundation (No. 20100481173), Doctoral Fund for New Youth Scholars of Ministry of Education of China (No. 20090095120017), and the Fundamental Research Funds for the Central Universities (No. JX 111744).
Database: Compendex
Data Provider: Engineering Village
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109. Study on sub-arc X-ray welding image defect segmentation algorithm and defect model

Gao, Weixin (1); Hu, Yuheng (2); Mu, Xiangyang (1); Wang, Zhi (3)
Source: *Hanjie Xuebao/Transactions of the China Welding Institution*, v 33, n 4, p 37-41, April 2012; **Language:** Chinese; **ISSN:** 0253360X; **Publisher:** Harbin Research Institute of Welding
Author affiliation: (1) Shanxi Key Laboratory of Oil-Drilling Rigs Controlling Technique, Xi'an Shiyou University, Xi'an 710065, China (2) Department of Electrical and Computer Engineering, University of Wisconsin-Madison, Madison 53705, United States (3) National Laboratory of Industrial Control Technology, Zhejiang University, Hangzhou 310027, China
Abstract: Regarding the present problems that the traditional image segmentation algorithm can only achieve a low successful defect segmentation ratio for the strong noise and low contrast of submerged-arc x-ray image, an efficient X-ray radiography image analysis algorithm is developed for the task of segmentation of submerged-arc welding defects. In the new algorithm, the defect is treated as noise and a new concept-"gray density" is put forward for calculation convenience. Tested with 100 X-ray radiography images obtained from a real factory, the proposed algorithm can increase successful segmentation ratio and achieves a successful ration of 95%. Based on the clustering segmentation algorithm, a high dimension space defect mathematical model is presented. The model makes the characteristic of the complexity of the form into consideration. Real examples show that the model is effective and practical. The sensitivity curve of the presented clustering segmentation algorithm is also given. (9 refs)
Main heading: X ray radiography
Controlled terms: Submerged arc welding - Nondestructive examination - Defect density - Clustering algorithms - Image segmentation
Uncontrolled terms: Clustering - Clustering segmentation - High dimensions - Image segmentation algorithm - Radiography images - Segmentation algorithms - Sensitivity curves - Welding gaps
Classification Code: 538.2.1 Welding Processes - 903.1 Information Sources and Analysis - 933.1 Crystalline Solids - 933.3 Electronic Structure of Solids
Database: Compendex
Data Provider: Engineering Village
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110. Deutsch's algorithm with topological charges of optical vortices via non-degenerate four-wave mixing (*Open Access*)

Cao, Mingtao (1); Han, Liang (1); Liu, Ruifeng (1); Liu, Hao (1); Wei, Dong (1); Zhang, Pei (1); Zhou, Yu (1); Guo, Wenge (2); Zhang, Shougang (3); Gao, Hong (1); Li, Fuli (1)
Source: *Optics Express*, v 20, n 22, p 24263-24271, October 22, 2012; **E-ISSN:** 10944087; **DOI:** 10.1364/OE.20.024263; **Publisher:** Optical Society of America (OSA)
Author affiliation: (1) Department of Applied Physics, Xi'an Jiaotong University, Xi'an 710049, China (2) MOE Key Laboratory for Electricity Gas and Oil Logging, Xi'an Shiyou University, Xi'an 710065, China (3) CAS Key Lab Time and Frequency Primary Standard, National Time Service Center, Xi'an 710600, China
Abstract: We propose a scheme to implement the Deutsch's algorithm through non-degenerate four-wave mixing process. By employing photon topological charges of optical vortices, we demonstrate the ability to realize the necessary four logic gates for all balanced and constant functions. We also analyze the feasibility of the proposed scheme on the single photon level. © 2012 Optical Society of America. (26 refs)
Main heading: Photons
Controlled terms: Particle beams - Vortex flow - Topology - Four wave mixing
Uncontrolled terms: Constant functions - Deutsch's algorithms - Non-degenerate four wave mixing - Optical vortices - Single-photon level - Topological charges
Classification Code: 631.1 Fluid Flow, General - 921.4 Combinatorial Mathematics, Includes Graph Theory, Set Theory - 931.3 Atomic and Molecular Physics - 932.1 High Energy Physics
Open Access type(s): All Open Access, Gold, Green
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

111. Diagnosis of status of aluminum reduction cells based on symmetric Alpha-stable probabilistic distribution neural network

Yi, Jun (1); Li, Taifu (1, 2); Tian, Yingfu (3); Yao, Lizhong (4); Hou, Jie (2)
Source: *Huagong Xuebao/CIESC Journal*, v 63, n 10, p 3196-3201, October 2012; **Language:** Chinese; **ISSN:** 04381157; **DOI:** 10.3969/j.issn.0438-1157.2012.10.027; **Publisher:** Chemical Industry Press
Author affiliation: (1) School of Electronic and Information Engineering, Chongqing University of Science and Technology, Chongqing 401331, China (2) School of Automation, Chongqing University, Chongqing 400044, China (3) Chongqing Tiantai Aluminum Cor. Ltd, Chongqing 401328, China (4) School of Electronic Engineering, Xi'an Shiyou University, Xi'an 710065, Shaanxi, China
Abstract: The numerous variables in non-steady state of aluminum reduction cells are non-Gaussian and impulsive. Due to correlation of variables, the condition that training samples must be independent and identically distributed is not fulfilled. For these reasons, it is too hard to diagnose the status of aluminum reduction cells in application. A diagnosis method for the status of aluminum reduction cells based on symmetric Alpha-stable (S#S) probabilistic distribution neural network was proposed. In the method, probability density function of S#S was introduced as radial basis function of model layer into the probabilistic neural network because such function had good fitting ability to non-Gaussian distributed data. And it also improved neural network approximation ability of partial pulse burst. By using 40 groups data of 170 kA operating aluminum smelter from a factory, this method could diagnose five statuses of aluminum reduction cells correctly and had not only stronger adaptability and robustness, but also approximation reliability and fast convergence. (15 refs)
Main heading: Electrolytic cells
Controlled terms: Aluminum - Aluminum metallography - Failure analysis - Gaussian noise (electronic) - Neural networks - Probability density function - Probability distributions - Radial basis function networks
Uncontrolled terms: Alpha-stable distribution - Aluminum reduction cells - Aluminum smelter - Diagnosis methods - Distributed data - Fast convergence - Neural network approximation - Non-Gaussian - Probabilistic distribution - Probabilistic neural networks - Radial basis functions - Training sample
Classification Code: 921 Mathematics - 802.1 Chemical Plants and Equipment - 723.4 Artificial Intelligence - 922.1 Probability Theory - 716 Telecommunication; Radar, Radio and Television - 541.1 Aluminum - 421 Strength of Building Materials; Mechanical Properties - 713 Electronic Circuits
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

112. Comparative study on inflow performance model of short horizontal wells

Ruan, Min (1, 2); Wang, Jing (2); Li, Xiangfang (1)
Source: *Advanced Materials Research*, v 361-363, p 425-432, 2012, *Natural Resources and Sustainable Development*; **ISSN:** 10226680; **ISBN-13:** 9783037852682; **DOI:** 10.4028/www.scientific.net/AMR.361-363.425; **Conference:** 2011 International Conference on Energy, Environment and Sustainable Development, ICEESD 2011, October 21, 2011 - October 23, 2011; **Publisher:** Trans Tech Publications
Author affiliation: (1) Key Laboratory of the Ministry of Education in Oil Engineering, China University of Petroleum, Beijing 02249, China (2) Xi'An Petroleum University, Xi'an, 710065, China
Abstract: High yields and higher efficiency can be acquired by using horizontal well as it has a lager contact area reservoir. So the horizontal well has become a better choice to gas fields all over the world, especially to low permeability oil fields in the world. There are several inflow performance models for horizontal wells. This paper studies several horizontal well models currently widely used in the word through an example of Chinese oil field. These include steady state model of Giger model, Joshi model and Renard and Dupuy model. And pseudo steady model of Babu and Odeh model. The results show that Giger model give greater production rate from our procedure and calculation. © (2012) Trans Tech Publications, Switzerland. (5 refs)
Main heading: Horizontal wells
Controlled terms: Natural gas fields - Oil fields - Gas industry - Petroleum reservoir engineering
Uncontrolled terms: Comparative studies - Contact areas - Gas fields - High yield - Higher efficiency - Inflow performance - Low permeability oil - Production rates - Productivity index - Short horizontal wells - Steady model - Steady-state models
Classification Code: 512.1.1 Oil Fields - 512.1.2 Petroleum Deposits : Development Operations - 512.2.1 Natural Gas Fields - 522 Gas Fuels
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

113. Application research of data warehouse technology in integrated drilling engineering design

Liu, Zhikun (1, 2); Bai, Yanwei (2); Li, Qi (1, 2)
Source: *Advanced Materials Research*, v 421, p 431-435, 2012, *Advanced Design Technology*; **ISSN:** 10226680; **ISBN-13:** 9783037853276; **DOI:** 10.4028/www.scientific.net/AMR.421.431; **Conference:** 2nd International Conference on Advances in Materials and Manufacturing Processes, ICAMMP 2011, December 16, 2011 - December 18, 2011; **Sponsor:** University of Wollongong; Northeastern University; University of Science and Technology Beijing; Hebei Polytechnic University; **Publisher:** Trans Tech Publications
Author affiliation: (1) CMOE Key Laboratory of Petroleum Engineering, China University of Petroleum, Beijing 102249, China (2) Institute of Petroleum Engineering, Xi'an Petroleum University, Shannxi Xi'an 710065, China
Abstract: In the process of drilling engineering design, in order to meet the needs of different departments and designers of different levels, using data warehouse technique, this paper proposes to build a integrated design system of drilling engineering. Through the establishment of data warehouse system, realize the integrated management and application of geological design, drilling design and real time information of drilling. In the process of collaborative design under network environment, provide a convenient and unified data analysis platform for specialists and designers in different fields. This paper describes the design and implementation of data warehouse system in detail. (6 refs)
Main heading: Data warehouses
Controlled terms: Design - Information management
Uncontrolled terms: Application research - Collaborative design - Collaborative Work - Data warehouse systems - Drilling engineering - Drilling engineering design - Integrated design system - Integrated designs - Integrated management - Network environments - Real-time information - Theme
Classification Code: 723.3 Database Systems
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

114. Seismic wavefield separation and denoising for P-P wave and P-S wave by singular value decomposition (SVD)

Shen, Hongyan (1, 2); Li, Qingchun (3)
Source: *Shiyou Diqiu Wuli Kantan/Oil Geophysical Prospecting*, v 47, n 5, p 690-697, October 2012; **Language:** Chinese; **ISSN:** 10007210; **Publisher:** Science Press

Author affiliation: (1) School of Earth Sciences and Engineering, Xi'an Shiyou University, Xi'an, Shaanxi 710065, China (2) Key Laboratory of Tectonics and Petroleum Resources of Ministry of Education, China University of Geosciences(Wuhan), Wuhan, Hubei 430074, China (3) College of Geology Engineering and Geometrics, Chang'an University, Xi'an, Shaanxi 710054, China
Abstract: As one of seismic data processing approaches, singular value decomposition (SVD) filter uses the lateral coherence difference of seismic signals to achieve wavefield separation and denoising. However, the propagation characteristics, apparent velocities and coherences are quite different between P-P wave and P-S wave. In this paper, a new idea of SVD application is proposed. Based on apparent velocities information, we first apply normal moveout(NMO) processing respectively on P-P wave and P-S wave to align P-P wave and P-S wave into the best horizontal coherence. Then we extract reconstructed signals of singular values from target signals by SVD separately on P-P wave and P-S wave, Finally P-P wave and P-S wave separations as well as noise attenuation are obtained. (24 refs)
Main heading: Singular value decomposition
Controlled terms: Seismology - Seismic waves - Separation - Data handling - Signal processing
Uncontrolled terms: De-noising - Normal moveout (NMO) - P waves - S-waves - Wave field separation
Classification Code: 484 Seismology - 484.1 Earthquake Measurements and Analysis - 716.1 Information Theory and Signal Processing - 723.2 Data Processing and Image Processing - 802.3 Chemical Operations - 921 Mathematics
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

115. One-step method for plasma determination of ibuprofen by chemiluminescence-coupled ultrafiltration and application in a pharmacokinetic study

Xiong, Xunyu (1); Zhang, Qunzheng (1); Nan, Yefei (1); Gu, Xuefan (1)
Source: *Luminescence*, v 27, n 5, p 371-378, September-October 2012; **ISSN:** 15227235, **E-ISSN:** 15227243; **DOI:** 10.1002/bio.1360; **Publisher:** John Wiley and Sons Ltd
Author affiliation: (1) College of Chemistry and Chemical Engineering, Xi'An Shiyou University, Xi'an 710065, China
Abstract: A simple one-step method is established for plasma determination of ibuprofen and its pharmacokinetic study. The method involves simple sample pre-treatment by dilution, rapid separation by ultrafiltration (UF) and online sensitive detection by chemiluminescence (CL) based on significant intensity enhancement of ibuprofen on the weak CL of potassium permanganate and sodium sulphite in an acidic system. The calibration curve for ibuprofen is linear in the range 0.1-50.0 μg/mL in rat plasma. Average recoveries of ibuprofen at 0.80, 12.0 and 40.0 μg/mL amounted to 98.0 ± 4.2%, 101.2 ± 3.6% and 99.3 ± 5.4%, respectively. Standard deviations of intra- and inter-day measurement precision and accuracy are within ±10.0%. The detection limit for ibuprofen is 10.0 μg/L in plasma samples. Pharmacokinetic study of ibuprofen by the validated method shows that the mean plasma drug concentration-time course confirms to a classical two-compartment open model with first-order absorption. The proposed method will be an alternative for pre-clinical pharmacokinetic study of ibuprofen and other non-steroidal anti-inflammatory drugs. Copyright © 2011 John Wiley & Sons, Ltd. (45 refs)
Main heading: Chemiluminescence
Controlled terms: Pharmacokinetics - Potash - Sodium compounds - Ultrafiltration
Uncontrolled terms: Calibration curves - Ibuprofen - Intensity enhancement - One-step methods - Pharmacokinetic studies - Rapid separation - Rat plasma - Sample pretreatment - Sensitive detection - Simple++
Classification Code: 461.6 Medicine and Pharmacology - 741.1 Light/Optics - 802.2 Chemical Reactions - 802.3 Chemical Operations - 804.2 Inorganic Compounds
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

116. Finite element simulations of mechanical properties of solid expandable tubular threaded joint

Zhang, Jian Bing (1); Jia, Ying Lin (2); Lv, Xiang Hong (1)
Source: *Advanced Materials Research*, v 421, p 258-262, 2012, *Advanced Design Technology*; **ISSN:** 10226680; **ISBN-13:** 9783037853276; **DOI:** 10.4028/www.scientific.net/AMR.421.258; **Conference:** 2nd International Conference on Advances in Materials and Manufacturing Processes, ICAMMP 2011, December 16, 2011 - December 18, 2011; **Sponsor:** University of Wollongong; Northeastern University; University of Science and Technology Beijing; Hebei Polytechnic University; **Publisher:** Trans Tech Publications
Author affiliation: (1) Xi'an ShiYou University, Xi'an, Shaanxi, China (2) PetroChina Tarim Oilfield, Korla, Xinjiang, China

Abstract: In this paper, threaded joint dedicated for the solid expandable tubular is taken as the basic structure and specific parameters for the threaded joint is set. 16Mn improved material is selected as the material, and MSC/Marc software is adopted to conduct finite element analog study on technical performance of the threaded joint and to analyze the distribution and strain condition of microstress and macrostress for the thread after make-up as well as the tensile strength and sealing property for the joint after make-up. Multiple important data concerning the designed expandable tubular threaded joint have been obtained through the study. It is convinced that the solid expandable tubular threaded joint shall adopt be a flush one with both internal and external walls parallel and level with the tubular body, and the type of thread shall take a shape of reversed hook. Besides, the expandable tubular threaded joint shall adopt the sealing structure with the rubber seal as the main sealing type and metallic seal auxiliary. (3 refs)
Main heading: Finite element method
Controlled terms: Seals - Joints (structural components) - Tensile strength
Uncontrolled terms: Basic structure - Expandable tubular - External walls - Finite Element - Finite element simulations - Macrostresses - Mechanical properties of solids - Microstresses - Rubber seals - Sealing structures - Solid expandable tubular - Solid expandable tubulars - Strain conditions - Technical performance - Tubular joints
Classification Code: 408.2 Structural Members and Shapes - 619.1.1 Pipe Accessories - 921.6 Numerical Methods
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

117. Investigation of phase composition and microstructure characterization of the B4C/BN composites fabricated by hot-pressing process

Jiang, Tao (1)
Source: *Advanced Materials Research*, v 399-401, p 465-468, 2012, *New Materials, Applications and Processes*; **ISSN:** 10226680; **ISBN-13:** 9783037853092; **DOI:** 10.4028/www.scientific.net/AMR.399-401.465; **Conference:** 2011 International Conference on Chemical, Material and Metallurgical Engineering, ICCMME 2011, December 23, 2011 - December 25, 2011; **Sponsor:** Guangxi University; Wuhan University of Science and Technology; Queensland University of Technology; **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Materials Science and Engineering, Xi'an Shiyou University, Xi'an 710065, China
Abstract: The B4C/BN composites were fabricated by hot-pressing process in this research. The B4C/BN composites included the B4C/BN microcomposites and the B4C/BN nanocomposites. The B4C/BN microcomposites were fabricated by hot-pressing process, and the B 4C/BN nanocomposites were fabricated by chemical reaction and hot-pressing process. In this research, the phase composition of the B 4C/BN microcomposites and the B4C/BN nanocomposites were investigated by XRD analysis. The XRD patterns results showed that there existed the B4C phase and h-BN phase in the hot-pressed composites. The microstructure of the B4/BN microcomposites and the B4C/BN nanocomposites sintered bulks were investigated by SEM and TEM. The SEM micrographs showed that the B4C/BN microcomposites and the B 4C/BN nanocomposites sintered bulks exhibited the homogenous and compact microstructure, and the h-BN particles were homogenously distributed in the B4C matrix. The TEM micrographs showed that there existed the weak interface between the B4C matrix grains and h-BN particles as well as the microcracks within the laminate structured h-BN particles. (12 refs)
Main heading: Phase composition
Controlled terms: Composite materials - Microstructure - Boron nitride - Sintering - Transmission electron microscopy - Boron carbide - Fabrication - Hot pressing - Nanocomposites
Uncontrolled terms: Compact microstructure - Hot-pressed composites - Hot-pressing process - matrix - Matrix grains - Micro-composites - Microstructure characterization - SEM and TEM - SEM micrographs - Sintered bulk - Weak interface - XRD analysis - XRD patterns
Classification Code: 641.1 Thermodynamics - 761 Nanotechnology - 804.2 Inorganic Compounds - 812.1 Ceramics - 933 Solid State Physics - 951 Materials Science
Database: Compendex
Data Provider: Engineering Village
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118. New synthesis of 2-benzimidazoleacetates and study of their Knoevenagel reaction

Yang, Peng Hui (1); Zhang, Qun Zheng (1); Yu, Hong Jiang (1)
Source: *Research on Chemical Intermediates*, v 38, n 7, p 1403-1409, September 2012; **ISSN:** 09226168, **E-ISSN:** 15685675; **DOI:** 10.1007/s11164-011-0471-z; **Publisher:** Kluwer Academic Publishers
Author affiliation: (1) College of Chemistry and Chemical Engineering, Xi'An Shiyou University, Xi'an 710065, China
Abstract: To obtain 2-benzimidazolyl acrylate 2, a new efficient synthesis of 2-benzimidazoleacetate, involving esterification of 2-benzimidazole acetic acid at low temperature as the crucial step, was developed. The generality

and efficiency of the process was illustrated by the high-yield synthesis of methyl, ethyl, i-propyl, and n-butyl 2-benzimidazoleacetate. The Knoevenagel reaction of 2-benzimidazoleacetate with aromatic aldehydes was studied. It was found that only in the presence of a catalytic amount of morpholine could the Knoevenagel reaction proceed to give the expected 3-aryl-2-benzimidazolyl acrylate. A mechanism for the morpholinecatalyzed reaction is suggested. © Springer Science+Business Media B.V. 2011. (11 refs)
Main heading: Temperature
Controlled terms: Synthesis (chemical)
Uncontrolled terms: Aromatic aldehyde - Benzimidazoleacetate - Catalytic amounts - Efficient synthesis - High yield synthesis - Knoevenagel reaction - Low temperatures - Morpholines
Classification Code: 641.1 Thermodynamics - 802.2 Chemical Reactions
Funding Details: Number: Z08012, Acronym: -, Sponsor: -; Number: 2010JK782, Acronym: -, Sponsor: -;
Funding text: Acknowledgment This work was supported by the Natural Science Foundation of the Education Bureau of Shaanxi Province, China (2010JK782) and the Foundation of Xi'an Shiyou University (Z08012).
Database: Compendex
Data Provider: Engineering Village
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119. Preparation and evaluation of sodium hydroxymethyl lignosulfonate as eco-friendly drilling fluid additive

Zhang, Jie (1); Chen, Gang (1); Yang, Nai-Wang (1); Wang, Yang-Guang (1)
Source: *Advanced Materials Research*, v 415-417, p 629-632, 2012, *Advanced Materials*; **ISSN:** 10226680; **ISBN-13:** 9783037853252; **DOI:** 10.4028/www.scientific.net/AMR.415-417.629; **Conference:** 2nd International Conference on Advances in Materials and Manufacturing Processes, ICAMMP 2011, December 16, 2011 - December 18, 2011; **Sponsor:** University of Wollongong; Northeastern University; University of Science and Technology Beijing; Hebei Polytechnic University; **Publisher:** Trans Tech Publications
Author affiliation: (1) College of Chemistry and Chemical Engineering, Xi'an Shiyou University, Xi'an, 710065, China
Abstract: Sodium hydroxymethyl lignosulfonate (NaHLS) was prepared by hydroxymethylation of sodium lignosulfonate (NaLS) and formaldehyde to enhance the performance as drilling fluids additive. The performances of the modified drilling fluid with NaLS and NaHLS, such as rheology behavior, filtration reducer and inhibitive ability were evaluated. The results indicate that the NaHLS can enhance the viscosity at low temperature, reduce the viscosity after ageing under 180 °C, which is more effective than that of NaLS. And NaHLS reduces the filtration, as the thickness of the modified fluid mud-cake is much thinner than that of NaLS. Besides, the inhibitive ability of NaHLS for clay hydrous disintegration is more effective than that of NaLS. The properties make NaHLS a potentially effective drilling mud additive. (13 refs)
Main heading: Sodium
Controlled terms: Bentonite - Methanol - Temperature - Viscosity - Drilling fluids
Uncontrolled terms: Drilling fluid additives - Drilling mud - Eco-friendly - Hydroxymethylation - Lignosulfonates - Low temperatures - Rheology behavior - Sodium lignosulfonates
Classification Code: 482.2 Minerals - 549.1 Alkali Metals - 631.1 Fluid Flow, General - 641.1 Thermodynamics - 804.1 Organic Compounds - 931.2 Physical Properties of Gases, Liquids and Solids
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

120. Properties evaluation of polymer-free fluid for fracturing application

Deng, Qiang (1); Xu, Jingfang (1); Gu, Xuefan (1); Tang, Ying (1)
Source: *Advanced Materials Research*, v 482-484, p 1180-1183, 2012, *Advanced Composite Materials*; **ISSN:** 10226680; **DOI:** 10.4028/www.scientific.net/AMR.482-484.1180; **Conference:** 3rd international Conference on Manufacturing Science and Engineering, ICMSE 2012, March 27, 2012 - March 29, 2012; **Sponsor:** Fujian University of Technology; Xiamen University; Fuzhou University; Huaqiao University; University of Wollongong; **Publisher:** Trans Tech Publications
Author affiliation: (1) College of Chemistry and Chemical Engineering, Xi'An Shiyou University, Xi'an, 710065, China
Abstract: A new and easy-to-prepare, surfactant-based polymer-free fluid, CTAB-SA, consists of etradecyl trimethyl ammonium bromide, cetyl trimethyl ammonium bromide and octadecyl trimethyl ammonium bromide with salicylic acid is described. The properties as a fracturing fluid were evaluated with regard to viscoelasticity and proppant carrying capability. The results showed that these water gels have strong proppant-carrying capacity and high viscoelasticity, and the best performance was obtained from the gels derived from octadecyl trimethyl ammonium bromide with

salicylic acid. The viscoelasticity of these gels were increase with the quality ratio of ammonium bromide to acid. © (2012) Trans Tech Publications, Switzerland. (7 refs)
Main heading: Fracturing fluids
Controlled terms: Gels - Salicylic acid - Viscoelasticity - Proppants
Uncontrolled terms: Ammonium bromides - Carrying capability - Cetyl trimethyl ammonium bromides - CTAB-SA - Octadecyltrimethylammonium bromide - Polymer-free - Proppants - Salicylic acids - Trimethyl
Classification Code: 511.1 Oil Field Production Operations - 801.3 Colloid Chemistry - 804 Chemical Products Generally - 804.1 Organic Compounds - 931.2 Physical Properties of Gases, Liquids and Solids
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

121. Investigation of microstructure and mechanical property of the machinable B4C/BN composites fabricated by hot-pressing process

Jiang, Tao (1)
Source: *Advanced Materials Research*, v 415-417, p 335-338, 2012, *Advanced Materials*; **ISSN:** 10226680; **ISBN-13:** 9783037853252; **DOI:** 10.4028/www.scientific.net/AMR.415-417.335; **Conference:** 2nd International Conference on Advances in Materials and Manufacturing Processes, ICAMMP 2011, December 16, 2011 - December 18, 2011; **Sponsor:** University of Wollongong; Northeastern University; University of Science and Technology Beijing; Hebei Polytechnic University; **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Materials Science and Engineering, Xi'an Shiyou University, Xi'an 710065, China
Abstract: The B4C/BN composites were fabricated by hot-pressing process in this research. The B4C/BN composites included the B4C/BN microcomposites and the B4C/BN nanocomposites. The B4C/BN microcomposites were fabricated by hot-pressing process, and the B 4C/BN nanocomposites were fabricated by chemical reaction and hot-pressing process. In this research, the phase composition, microstructure, mechanical property and machinability of the B4C/BN microcomposites and B4C/BN nanocomposites were investigated. The XRD patterns results showed that there existed B4C phase and h-BN phase in the hot-pressed composites. The microstructure of the B4C/BN composites was investigated by SEM and TEM. The B4C/BN microcomposites and the B4C/BN nanocomposites sintered bulks exhibited the homogenous and compact microstructure, and the h-BN particles were homogenously distributed in the B4C matrix. The mechanical property of the B4C/BN microcomposites and the B4C/BN nanocomposites decreased gradually with the increase of h-BN content. The mechanical property of the B 4C/BN nanocomposites was remarkably improved in comparison with the B4C/BN microcomposites. The machinability of the B4C/BN microcomposites and the B4C/BN nanocomposites increased gradually with the increase of h-BN content, the drilling rates of the B4C/BN composites specimens increased gradually with the increase of h-BN content. The relationship between the microstructure and machinability of the B 4C/BN composites was analyzed. The microstructure showed that the weak interface of B4C/BN and cleavage behavior of laminate structured h-BN particles remarkably improved the machinabilty of B4C/BN composites. (12 refs)
Main heading: Nanocomposites
Controlled terms: Laminated composites - Fabrication - Microstructure - Boron carbide - Boron nitride - Hot pressing
Uncontrolled terms: Compact microstructure - Drilling rates - Hot-pressed composites - Hot-pressing process - matrix - Micro-composites - Microstructure and mechanical properties - SEM and TEM - Sintered bulk - Weak interface - XRD patterns
Classification Code: 761 Nanotechnology - 804.2 Inorganic Compounds - 812.1 Ceramics - 933 Solid State Physics - 951 Materials Science
Database: Compendex
Data Provider: Engineering Village
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122. Several reflections on material forming specialized english teaching

He, Zhi (1); Xu, Xueli (1); Zhou, Haobin (1); Peng, Tao (1); Liu, Yanming (1)
Source: *Advances in Intelligent and Soft Computing*, v 146 AISC, p 199-204, 2012, *Emerging Computation and Information Technologies for Education - Proceeding of 2012 International Conference on Emerging Computation and Information Technologies for Education, ECICE 2012*; **ISSN:** 18675662; **ISBN-13:** 9783642284656; **DOI:** 10.1007/978-3-642-28466-3_28; **Conference:** 2012 International Conference on Emerging Computation and InformationteChnologies for Education, ECICE 2012, January 15, 2012 - January 16, 2012; **Sponsor:** Institute of Electronic and Information Technology; Zhejiang Economic and Trade Polytechnic; **Publisher:** Springer Verlag
Author affiliation: (1) College of Material Science and Engineering, Xi'an Shiyou University, Xi'an 710065, China

Abstract: The paper analyses the subsistent disadvantages in material forming specialized English at the present stage. Incorporated with personal teaching practices, this paper puts forward the improving measures in aspects of content, methodology and evaluation methods of material forming specialized English teaching. © 2012 Springer-Verlag GmbH. (4 refs)
Main heading: Teaching
Controlled terms: Software engineering - Soft computing
Uncontrolled terms: English teaching - Evaluation methods - Material forming - Paper analysis - Present stage - Specialized English - Teaching practices
Classification Code: 723 Computer Software, Data Handling and Applications - 723.1 Computer Programming - 921.4 Combinatorial Mathematics, Includes Graph Theory, Set Theory
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

123. Finite element simulations of working characteristics of solid expandable tubular threaded joint

Zhang, Jian Bing (1); Jia, Ying Lin (2); Lv, Xiang Hong (1)
Source: *Advanced Materials Research*, v 399-401, p 1658-1662, 2012, *New Materials, Applications and Processes*; **ISSN:** 10226680; **ISBN-13:** 9783037853092; **DOI:** 10.4028/www.scientific.net/AMR.399-401.1658; **Conference:** 2011 International Conference on Chemical, Material and Metallurgical Engineering, ICCMME 2011, December 23, 2011 - December 25, 2011; **Sponsor:** Guangxi University; Wuhan University of Science and Technology; Queensland University of Technology; **Publisher:** Trans Tech Publications
Author affiliation: (1) Xi'an ShiYou University, Xi'an, Shaanxi, China (2) PetroChina Tarim Oilfield, Korla, Xinjiang, China
Abstract: The performance of solid expandable tubular threaded joint is affected by complicated factors such as material property change, large deformation of geometric dimension and residual stress. Given material nonlinearity, geometrical nonlinearity and contact nonlinearity in the operational process of solid expandable tubular threaded joint, MSC/Marc software was adopted in this paper to conduct simulation study on the sealing property of the threaded joint during expansion and joint strength of the threaded joint after expansion. It was recognized that the solid expandable tubular threaded joint should adopt hook-shaped thread with a negative angle for the bearing surface, the sealing property of metal-to-metal cone seal would decline after expansion of the joint, and the solid expandable tubular threaded joint ought to adopt the rubber-seal-orientated sealing form. Furthermore, it was also found out that the internal thread and the root of the external thread were the vulnerable parts of the solid expandable tubular threaded joint, and the joint would first break down and cease to be effective on these parts under excessive tensile load. (3 refs)
Main heading: Finite element method
Controlled terms: Expansion - Computer software
Uncontrolled terms: Bearing surfaces - Contact nonlinearity - Finite element simulations - First breaks - Geometric dimensions - Geometrical non-linearity - Internal threads - Joint strength - Large deformations - Material non-linearity - Material property - Operational process - Simulation studies - Solid expandable tubular - Solid expandable tubulars - Tensile loads - Tubular joints
Classification Code: 723 Computer Software, Data Handling and Applications - 921.6 Numerical Methods - 951 Materials Science
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

124. Investigation of microstructure and machinable mechanism of the B 4C/BN composites fabricated by hot-pressing process

Jiang, Tao (1)
Source: *Advanced Materials Research*, v 413, p 420-425, 2012, *Materials Science and Engineering Application II*; **ISSN:** 10226680; **ISBN-13:** 9783037853214; **DOI:** 10.4028/www.scientific.net/AMR.413.420; **Conference:** 2nd International Conference on Materials Science and Engineering Application, ICMSEA 2012, January 7, 2012 - January 8, 2012; **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Materials Science and Engineering, Xi'an Shiyou University, Xi'an 710065, China
Abstract: The B4C/BN composites were fabricated by hot-pressing process. The B4C/BN composites included the B4C/BN microcomposites and the B4C/BN nanocomposites. The B4C/BN microcomposites were fabricated by hot-pressing process, and the B4C/BN nanocomposites were fabricated by chemical reaction and hot-pressing process. In this research, the phase composition, microstructure, machinability and machinable mechanism of the

B4C/BN microcomposites and the B 4C/BN nanocomposites were investigated. The microstructure of the B4C/BN composites was investigated by SEM and TEM. The SEM micrographs showed that the B4C/BN microcomposites and the B 4C/BN nanocomposites exhibited the homogenous and compact microstructure, and the h-BN particles were homogenously distributed in the B4C matrix. The TEM micrographs of the B4C/BN composites showed that there existed the weak interface between B4C matrix grains and h-BN particles as well as the microcracks within the laminate structured h-BN particles. The machinability of the B4C/BN microcomposites and the B4C/BN nanocomposites increased gradually with the increase of h-BN content. The drilling rates and materials removal rates of the B 4C/BN composites increased gradually with the increase of h-BN content. The surface roughness of drilled specimens of the B4C/BN composites decreased gradually with the increase of h-BN content. The relationship between the microstructure and machinable mechanism of the B 4C/BN composites was analyzed and discussed. The phase composition and microstructure of drilled debris of drilled specimens of the B 4C/BN composites were investigated by XRD and TEM. The microstructure of drilled surface of drilled specimens of the B4C/BN composites was observed and analyzed by SEM. (15 refs)
Main heading: Surface roughness
Controlled terms: Phase composition - Boron nitride - Composite materials - Transmission electron microscopy - Fabrication - Hot pressing - Nanocomposites - Boron carbide - Microstructure
Uncontrolled terms: Compact microstructure - Drilling rates - Hot-pressing process - matrix - Matrix grains - Micro-composites - Removal rate - SEM and TEM - SEM micrographs - Weak interface - XRD
Classification Code: 641.1 Thermodynamics - 761 Nanotechnology - 804.2 Inorganic Compounds - 812.1 Ceramics - 931.2 Physical Properties of Gases, Liquids and Solids - 933 Solid State Physics - 951 Materials Science
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

125. Determination of nickel in oil product by novel cathodic stripping voltammetry with carbon nanotube paste electrode

Zheng, Li (1)
Source: *Shiyou Xuebao, Shiyou Jiagong/Acta Petrolei Sinica (Petroleum Processing Section)*, v 28, n 3, p 487-493, June 2012; **Language:** Chinese; **ISSN:** 10018719; **DOI:** 10.3969/j.issn.1001-8719.2012.03.022; **Publisher:** Science Press
Author affiliation: (1) College of Chemistry and Chemical Engineering, Xi'an Shiyou University, Xi'an 710065, China
Abstract: A novel cathodic stripping voltammetric method with a multiwall carbon nanotube paste electrode (MWCNT-PE) for the determination of nickel was proposed. In 0.10 mol/L NaOH solution containing 4.0×10-5 mol/L dimethylglyoxime (DMG), Ni(II) was first effectively enriched on the surface of electrode by oxidation to Ni(III) at potential of 0.80 V (versus SCE), and then determined by cathodic stripping voltammetry (CSV) at positive potential windows. The electrochemical properties and the producing condition of the stripping wave of Ni(II) were discussed. Compared with carbon paste electrode, MWCNT-PE had electrocatalytic effect on the voltammetric responses of Ni(II) since the enhanced peak current and the decreased overpotential. Under the optimized experimental conditions, the square-wave voltammetric peak current of the cathodic stripping wave was proportional to the molar concentration of nickel in the range of 8.0×10-9-1.0×10-5 mol/L with 120 s of accumulation. The detection limit was 3.5×10-9 mol/L. By using the proposed method, nickel mass fraction in oil products was evaluated and the results were satisfactory. (19 refs)
Main heading: Sodium hydroxide
Controlled terms: Electrodes - Multiwalled carbon nanotubes (MWCN) - Yarn - Stripping voltammetry - Nickel compounds
Uncontrolled terms: Carbon nanotube paste electrodes - Carbon paste electrode - Cathodic stripping voltammetry - Electrocatalytic effects - Experimental conditions - Oil product - Voltammetric methods - Voltammetric response
Classification Code: 761 Nanotechnology - 801.4.1 Electrochemistry - 804.2 Inorganic Compounds - 819.4 Fiber Products - 933.1 Crystalline Solids
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

126. QSPR studies on n-octanol/water partition coefficient of polychlorinated biphenyls by using artificial neural network

Jiao, Long (1)
Source: *Advanced Materials Research*, v 455-456, p 925-929, 2012, *Future Material Research and Industry Application, FMRIA 2011*; **ISSN:** 10226680; **ISBN-13:** 9783037853009; **DOI:** 10.4028/www.scientific.net/

AMR.455-456.925; **Conference:** 2011 SSITE International Conference on Future Material Research and Industry Application, FMRIA 2011, December 1, 2011 - December 2, 2011; **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Chemistry and Chemical Engineering, Xi'an Shiyou University, Xi'an, 710065, China
Abstract: Quantitative structure property relationship (QSPR) model for predicting the noctanol/water partition coefficient, Kow, of 21 polychlorinated biphenyls (PCBs) was investigated. The structure of the investigated PCBs is mathematically characterized by using molecular distanceedge vector (MDEV) index, a topological index which is developed based on the topological method. The calibration model of Kow was developed by using radial basis function artificial neural network (RBF ANN). Leave one out cross validation was carried out to assess the predictive ability of the developed QSPR model. The R2 between the predicted and experimental logKow is 0.9793. The prediction RMS%RE for the 21 PCBs is 1.92. It is demonstrated that there is a quantitative relationship between the MDEV index and the Kow of the 21 PCBs. RBF ANN is shown to practicable for developing the QSPR model for Kow of PCBs. © (2012) Trans Tech Publications, Switzerland. (15 refs)
Main heading: Topology
Controlled terms: Alcohols - Radial basis function networks - Polychlorinated biphenyls - Organic pollutants - Statistical methods
Uncontrolled terms: Artificial Neural Network - Molecular distance-edge vector index - N-octanol - PCBs - QSPR
Classification Code: 804.1 Organic Compounds - 921.4 Combinatorial Mathematics, Includes Graph Theory, Set Theory - 922.2 Mathematical Statistics
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

127. QSPR study on the soil-water partition coefficient of polychlorinated biphenyls by using artificial neural network

Jiao, Long (1)
Source: *Advanced Materials Research*, v 455-456, p 930-934, 2012, *Future Material Research and Industry Application, FMRIA 2011*; **ISSN:** 10226680; **ISBN-13:** 9783037853009; **DOI:** 10.4028/www.scientific.net/AMR.455-456.930; **Conference:** 2011 SSITE International Conference on Future Material Research and Industry Application, FMRIA 2011, December 1, 2011 - December 2, 2011; **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Chemistry and Chemical Engineering, Xi'an Shiyou University, Xi'an, 710065, China
Abstract: A practicable quantitative structure property relationship (QSPR) model for predicting the soil-water partition coefficient, Koc, of 16 polychlorinated biphenyls (PCBs) was developed. The structure of the investigated PCBs is encoded by five quantum structural descriptors and on topological index. The calibration model of Koc was developed by using artificial neural network (ANN). The input variables of ANN were generated from 6 structural descriptors by using principal component analysis (PCA). Leave one out cross validation was carried out to assess the predictive ability of the developed model. The prediction RMS%RE for the 16 PCBs is 6.35. The R2 between the predicted and experimental logKoc is 0.8522. It is demonstrated that ANN combined with PCA is a practicable method for developing QSPR model for Koc of these PCBs. © (2012) Trans Tech Publications, Switzerland. (17 refs)
Main heading: Principal component analysis
Controlled terms: Organic pollutants - Polychlorinated biphenyls - Soil moisture - Neural networks
Uncontrolled terms: Artificial Neural Network - PCBs - Principal Components - QSPR - Soil-water partition coefficient
Classification Code: 483.1 Soils and Soil Mechanics - 804.1 Organic Compounds - 922.2 Mathematical Statistics
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

128. Preparation and evaluation of polymeric pour point depressant for crude oil

Gu, Xuefan (1); Ma, Yun (1); Chen, Gang (1)
Source: *Advanced Materials Research*, v 524-527, p 1706-1709, 2012, *Natural Resources and Sustainable Development II*; **ISSN:** 10226680; **ISBN-13:** 9783037854174; **DOI:** 10.4028/www.scientific.net/AMR.524-527.1706; **Conference:** 1st International Conference on Energy and Environmental Protection, ICEEP 2012, June 23, 2012 - June 24, 2012; **Publisher:** Trans Tech Publications
Author affiliation: (1) College of Chemistry and Chemical Engineering, Xi'an Shiyou University, Xi'an, 710065, China
Abstract: A series of polyacrylate ester (PAE) was prepared by free-radical polymerization. The PAEs were used as pour point depressant for crude oil from Yumen Oil Field. PAE12 and PAE18 showed potent activity for 2# and 4# samples under the concentration of 500 ppm with the highest $_{\Delta}$ pour point of 10-13°C. In the further study, the effect of the concentration on the pour point was investigated. © (2012) Trans Tech Publications. (7 refs)
Main heading: Crude oil

Controlled terms: Acrylic monomers - Free radicals - Free radical polymerization - Esters - Oil fields
Uncontrolled terms: Potent activity - Pour point depressants - Pour points
Classification Code: 512.1 Petroleum Deposits - 512.1.1 Oil Fields - 804.1 Organic Compounds - 815.2 Polymerization
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

129. Investigation of microstructure characterization and machinability of the B4C/BN nanocomposites bulks fabricated by chemical reaction process and hot-pressing process

Jiang, Tao (1)
Source: *Advanced Materials Research*, v 476-478, p 902-905, 2012, *New Materials and Processes*; **ISSN:** 10226680; **ISBN-13:** 9783037853719; **DOI:** 10.4028/www.scientific.net/AMR.476-478.902; **Conference:** 3rd International Conference on Manufacturing Science and Engineering, ICMSE 2012, March 27, 2012 - March 29, 2012; **Sponsor:** Fujian University of Technology; Xiamen University; Fuzhou University; Huaqiao University; University of Wollongong; **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Materials Science and Engineering, Xi'an Shiyou University, Xi'an 710065, China
Abstract: The B4C/BN nanocomposites were fabricated by hot-pressing process in this research. The B4C/BN nanocomposite powders were fabricated by chemical reaction and heat treatment process. The B 4C/BN nanocomposites sintered bulks were fabricated by hot-pressing process at 1850°C for 1h under the pressure of 30MPa. In this research, the phase composition, microstructure, mechanical property and machinability of the B4C/BN nanocomposites fabricated by hot-pressing process were investigated. The XRD patterns results showed that there existed the B 4C phase and h-BN phase in hot-pressed B4C/BN composites. The microstructure of the B4C/BN nanocomposites was investigated by SEM and TEM. The SEM micrographs showed that the B4C/BN nanocomposites bulks exhibited the homogenous and compact microstructure, and the h-BN particles were homogenously distributed in the B4C matrix. The TEM micrographs showed that there existed the weak interface between the B4C matrix grains and h-BN particles, as well as the microcracks within the laminate structured h-BN particles. The mechanical property of the B4C/BN nanocomposites decreased gradually with the increase of h-BN content. The B4C/BN nanocomposites exhibited the high mechanical property. The machinability of B4C/BN nanocomposites increased gradually with the increase of h-BN content, the drilling rates of the B 4C/BN nanocomposites increased gradually with the increase of h-BN content. © (2012) Trans Tech Publications. (12 refs)
Main heading: Nanocomposites
Controlled terms: Boron nitride - Hot pressing - Powders - Transmission electron microscopy - Chemical reactions - Boron carbide - Fabrication - Microstructure
Uncontrolled terms: Chemical reaction process - Compact microstructure - Drilling rates - Heat treatment process - High mechanical properties - Hot-pressing process - Matrix grains - Microstructure characterization - Nano-composite powders - SEM and TEM - SEM micrographs - Sintered bulk - Weak interface - XRD patterns
Classification Code: 761 Nanotechnology - 802.2 Chemical Reactions - 804.2 Inorganic Compounds - 812.1 Ceramics - 933 Solid State Physics - 951 Materials Science
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

130. Synthesis and regiochemistry of spiro indane-1,3-dione compounds

Chen, Gang (1); Zhang, Jie (1); Wu, Ya (1)
Source: *Research on Chemical Intermediates*, v 38, n 2, p 413-420, February 2012; **ISSN:** 09226168, **E-ISSN:** 15685675; **DOI:** 10.1007/s11164-011-0357-0; **Publisher:** Kluwer Academic Publishers
Author affiliation: (1) College of Chemistry and Chemical Engineering, Xi'an Shiyou University, Xi'an 710065, China
Abstract: Spiro indane-1,3-dione compounds have been synthesized by 1,3-dipolar cycloaddition of ninhydrin, L-proline, and an alkene (either a chalcone or an (E)-β-arylnitrostyrene). All these reactions proceed with good yield and with high regioselectivity and stereoselectivity. The structures were studied by NMR spectroscopy, MS, and X-ray diffraction analysis. It was found that these two kinds of alkene lead to different regioselectivity. This study has provided information about the regioselectivity of 1,3-dipolar cycloaddition reactions: regioselectivity may be controlled by π–π stacking state; the order of stability of stacking of the Ar and EWG part with the indane-1,3-dione part is: benzoyl group[phenyl group[nitro group. © Springer Science+Business Media B.V. 2011. (14 refs)
Main heading: Regioselectivity
Controlled terms: Nuclear magnetic resonance spectroscopy - Cycloaddition - X ray diffraction analysis - Hydrocarbons

Uncontrolled terms: 1 ,3-Dipolarcycloaddition - Benzoyl group - L-proline - Nitro group - Phenyl group - Pi-stacking - Regiochemistry - Spiro compounds
Classification Code: 802.2 Chemical Reactions - 804.1 Organic Compounds
Funding Details: Number: 50874092, Acronym: NSFC, Sponsor: National Natural Science Foundation of China; Number: 08JK413,11JK0560, Acronym: -, Sponsor: Education Department of Shaanxi Province;
Funding text: Acknowledgment This work was financially supported by the grants from National Science Foundation of China (no. 50874092) and Scientific Research Program Funded by Shaanxi Provincial Education Department (program no. 08JK413, 11JK0560).
Database: Compendex
Data Provider: Engineering Village
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131. Improve the temperature resistance of Guar gum by silanization

Zhang, Jie (1); Chen, Gang (1)
Source: *Advanced Materials Research*, v 415-417, p 652-655, 2012, *Advanced Materials*; **ISSN:** 10226680; **ISBN-13:** 9783037853252; **DOI:** 10.4028/www.scientific.net/AMR.415-417.652; **Conference:** 2nd International Conference on Advances in Materials and Manufacturing Processes, ICAMMP 2011, December 16, 2011 - December 18, 2011; **Sponsor:** University of Wollongong; Northeastern University; University of Science and Technology Beijing; Hebei Polytechnic University; **Publisher:** Trans Tech Publications
Author affiliation: (1) College of Chemistry and Chemical Engineering, Xi'an Shiyou University, Xi'an, 710065, China
Abstract: For gelating agent in hydraulic fracturing fluid, the temperature resistance is required. To improve the temperature resistance of Guar gum (GG), it was modified by silanization. The reaction conditions were investigated, and the optimized conditions were as following: the reaction temperature of 85°C, 5: 1 molar ratio of guar gum to TMS-Cl and 4-6 h of reaction time. The viscosity of silanized guar gum (SGG) aqueous gel was greatly improved even high temperature at 80°C. (8 refs)
Main heading: Fracturing fluids
Controlled terms: Temperature control - Hydraulic fracturing
Uncontrolled terms: Guar gums - High temperature - Modification - Molar ratio - Optimized conditions - Reaction conditions - Reaction temperature - Silanizations - Temperature resistance - Temperature resistances
Classification Code: 512.1.2 Petroleum Deposits : Development Operations - 731.3 Specific Variables Control
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

132. Investigation of microstructure and mechanical property of the Fe 3Al/Al2O3 composites fabricated by mechanical alloying process and hot-pressing process

Jiang, Tao (1); Shi, Xiaoping (1)
Source: *Key Engineering Materials*, v 492, p 102-106, 2012, *Testing and Evaluation of Inorganic Materials II*; **ISSN:** 10139826, **E-ISSN:** 16629795; **ISBN-13:** 9783037852514; **DOI:** 10.4028/www.scientific.net/KEM.492.102; **Conference:** 2nd Annual Meeting on Testing and Evaluation of Inorganic Materials, TEIM-2, May 30, 2011 - June 1, 2011; **Publisher:** Trans Tech Publications Ltd
Author affiliation: (1) School of Materials Science and Engineering, Xi'an Shiyou University, Xi'an 710065, China
Abstract: The Fe3Al/Al2O3 composites were fabricated by hot-pressing process in this research. The Fe3Al intermetallics compounds powders were fabricated by mechanical alloying and heat treatment, then the Fe3Al powders and Al2O3 powders were mixed and the Fe3Al/Al2O3 composite powders were prepared, so the Fe3Al/Al2O3 composites were fabricated by hot-pressing process at 1300oC for 2h under the pressure of 35MPa. The phase composition and microstructure of the Fe 3Al intermetallics compounds powders produced by mechanical alloying and heat treatment were investigated. The phase composition, microstructure and mechanical properties of the Fe3Al/Al2O3 composites sintered bulks were investigated. The XRD patterns results showed that there existed Fe3Al phase and Al2O3 phase in the sintered composites. The Fe3Al/Al2O3 composites sintered bulks exhibited the homogenous and compact microstructure, the Fe3Al particles were homogenously distributed in the Al 2O3 matrix, the mean particles size of Fe3Al intermetallics compounds was about 3-4μm. The Fe3Al/Al 2O3 composites exhibited more homogenous and compact microstructure with the increase of Fe3Al content in the Al 2O3 matrix. The density and relative density of the Fe3Al/Al2O3 composites increased gradually with the increase of Fe3Al content. The fracture strength and fracture toughness of the Fe3Al/Al2O3 composites increased gradually with the increase of Fe3Al content. The elastic modulus and hardness (HRA) of the Fe3Al/Al2O3 composites decreased gradually with the increase of Fe3Al content. © (2012) Trans Tech Publications. (15 refs)
Main heading: Microstructure

Controlled terms: Aluminum oxide - Mechanical alloying - Alumina - Fabrication - Iron alloys - Sintering - Binary alloys - Intermetallics - Powders - Fracture toughness - Hot pressing - Fracture - Phase composition
Uncontrolled terms: Compact microstructure - Composite powders - Hot-pressing process - Intermetallics compounds - Microstructure and mechanical properties - Particles sizes - Relative density - Sintered bulk
Classification Code: 531 Metallurgy and Metallography - 531.1 Metallurgy - 545.2 Iron Alloys - 641.1 Thermodynamics - 804.2 Inorganic Compounds - 951 Materials Science
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

133. Investigation of microstructure and thermal shock resistance of the B 4C/BN composites fabricated by hot-pressing process

Jiang, Tao (1); Tian, Chenchao (1)
Source: *Key Engineering Materials*, v 512-515, p 748-752, 2012, *High-Performance Ceramics VII*; **ISSN:** 10139826, **E-ISSN:** 16629795; **ISBN-13:** 9783037854259; **DOI:** 10.4028/www.scientific.net/KEM.512-515.748; **Conference:** 7th China International Conference on High-Performance Ceramics, CICC-7, November 4, 2011 - November 7, 2011; **Publisher:** Trans Tech Publications Ltd
Author affiliation: (1) School of Materials Science and Engineering, Xi'an Shiyou University, Xi'an 710065, China
Abstract: The B4C/BN microcomposites were fabricated by hot-pressing process, and the B4C/BN nanocomposites were fabricated by chemical reaction and hot-pressing process. The phase composition, microstructure, mechanical property and thermal shock resistance of the microcomposites and nanocomposites were investigated. Both composites exhibited the homogenous and compact microstructure, and the h-BN particles were homogenously distributed in the B4C matrix. The mechanical property of the microcomposites and nanocomposites decreased gradually with the increase of h-BN content, but the nanocomposites exhibited the higher mechanical property than that of the microcomposites. The thermal shock resistances of the B4C monolith and the composites were measured by water-quenching method. The thermal shock resistances of the microcomposites and the nanocomposites were remarkably improved in comparison with the monolith. The thermal shock resistance of the nanocomposites was much better than that of the microcomposites. The thermal shock temperature difference (#Tc) of the B4C monolith was about 300°C, the #Tc of the microcomposites was about 500°C and the #Tc of the nanocomposites was about 600°C. The B4C/BN composites exhibited the high thermal shock resistance due to the high fracture strength and low elastic modulus. The microstructure showed that the weak interface of B4C/BN and cleavage behavior of laminate structured h-BN particles would remarkably improve the thermal shock resistance of the B 4C/BN composites. © (2012) Trans Tech Publications. (12 refs)
Main heading: Nanocomposites
Controlled terms: Fabrication - Fracture toughness - Boron nitride - Ceramic materials - Microstructure - Laminated composites - Boron carbide - Hot pressing
Uncontrolled terms: Compact microstructure - Hot-pressing process - Low elastic modulus - Micro-composites - Shock temperature - Thermal shock resistance - Water quenching methods - Weak interface
Classification Code: 761 Nanotechnology - 804.2 Inorganic Compounds - 812.1 Ceramics - 933 Solid State Physics - 951 Materials Science
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

134. Corrosion behavior analysis of various ions in the soil to the X80 buried pipeline

Xu, Shiqi (1); Xie, Ruilin (2); Na, Li (3)
Source: *Advanced Materials Research*, v 535-537, p 701-705, 2012, *Advanced Engineering Materials II*; **ISSN:** 10226680; **ISBN-13:** 9783037854464; **DOI:** 10.4028/www.scientific.net/AMR.535-537.701; **Conference:** 2nd International Conference on Advanced Engineering Materials and Technology, AEMT 2012, July 6, 2012 - July 8, 2012; **Publisher:** Trans Tech Publications
Author affiliation: (1) Southwest Petroleum University, Department of Petroleum Engineering, Xi'an Shiyou Univervity, Xi'an, China (2) Bachelor candidate, Xi'an Shiyou Univervity, Xi'an, China (3) Southwest Petroleum University, Senior Engineer,, CNOOC Tianjin Engineering Design Co, Ltd, Tanggu, Tianjin, China
Abstract: Through physico-chemical analysis of soil under the buried pipeline, the corrosion influence factor of different ions such as Cl -, SO2-4, CO2-3 and HCO-3 on X80 has been studied. The result shows that when the ions concentration of Cl-, CO2-3, HCO-3 increases, the corrosion rate of X80 steel also rises and then reaches the maximum. After that, the corrosion rate begins decreasing. While for the case of SO2-4 ions, the corrosion rate of X80 steel keeps increasing with the concentration increase. Through detail analyzing the corrosion mechanism of different

negative ions on buried pipeline steel and studying the soil corrosion rules, we can provide theoretical basis for the corrosion preventing work, which is very important and meaningful. © (2012) Trans Tech Publications, Switzerland. (5 refs)
Main heading: Corrosion rate
Controlled terms: Negative ions - Soils
Uncontrolled terms: Buried pipelines - Corrosion behavior - Corrosion mechanisms - Physico-chemical analysis - Soil corrosion - Theoretical basis - X80 steel
Classification Code: 423 Non Mechanical Properties and Tests of Building Materials - 483.1 Soils and Soil Mechanics - 801 Chemistry - 813 Coatings and Finishes
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

135. Computation of time-dependent AIT responses for various reservoirs using dynamic invasion model

Liu, Jianhua (1); Liu, Zhenhua (2); Zhang, Jianhua (3)
Source: *Lecture Notes in Electrical Engineering*, v 125 LNEE, n VOL. 2, p 823-828, 2012, *Recent Advances in Computer Science and Information Engineering*; **ISSN:** 18761100, **E-ISSN:** 18761119; **DOI:** 10.1007/978-3-642-25789-6_113; **Conference:** 2009 11th IEEE International Conference on e-Health Networking, Applications and Services, Healthcom 2009, December 16, 2009 - December 18, 2009; **Publisher:** Springer Verlag
Author affiliation: (1) Key Laboratory of Read Construction Technique and Equipment of the Ministry of Education, School of Construction Machinery, Chang'an University, Xi'an, China (2) School of Mechanical Engineering, Xi'an Shiyou University, Xi'an, China (3) Science College, Xi'an Shiyou University, Xi'an, China
Abstract: When a formation was opened, the drill mud was used and invasion occurred during the process of well drilling in the petroleum prospection. Since the dynamic invasion process changes with time during drilling while mud filtrate was used, the logging response is time dependent. Dynamic invasion responses of Array Induction Tools (AIT) were modeled and programmed to study the effects of mud filtrate invading into a reservoir dynamically on AIT and sight into the behaviors of responses during dynamic invasion for the new array induction tools. The characters of AIT responses were discussed for the cases of mud filtrate invading into an oil reservoir, a water zone, and a reservoir containing both water and hydrocarbon, respectively. The present computation model provides the foundational behaviors for reservoir evaluation. © 2012 Springer-Verlag GmbH. (8 refs)
Main heading: Petroleum reservoir engineering
Controlled terms: Oil well drilling - Petroleum reservoirs
Uncontrolled terms: Computation model - Induction tool - Invasion process - Logging response - Mud filtrate - Oil reservoirs - Time dependent - Water zone
Classification Code: 512.1.1 Oil Fields - 512.1.2 Petroleum Deposits : Development Operations
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

136. Research on main constraints in sustainable development of china oil-gas upstream industry (*Open Access*)

Chen, Longlong (1, 2); Liu, Yifei (1, 2)
Source: *Energy Procedia*, v 14, p 325-330, 2012, *2011 2nd International Conference on Advances in Energy Engineering, ICAEE 2011*; **ISSN:** 18766102; **DOI:** 10.1016/j.egypro.2011.12.887; **Conference:** 2011 2nd International Conference on Advances in Energy Engineering, ICAEE 2011, December 27, 2011 - December 28, 2011; **Sponsor:** Asia Pacific Human-Computer Interaction Research Center; **Publisher:** Elsevier Ltd
Author affiliation: (1) Xi'an Shiyou University, Xi'an, 710065, China (2) Treatment Engineering Research Center, Ministry of education, Xi'an, 710065, China
Abstract: Though the long term exploration and development of China oil and gas resources, the yield and consumption have been increasing, but there are also many problems, including low grade oil reserve account for large percent in the future oil-gas replacement reserve, subtle reservoir exploration measures are immature, reservoir monitoring and management level need to be improved, oil-gas exploration and development advanced technologies are shortage, and so on. so, it must fully understand to these many problems in China oil-gas resources exploration and development, moreover, the effective implementation and completion our country oil-gas resources development targets must depend on the reasonable planning. This article is based on the analysis to present China oil-gas reserve, and point out that the current our country oil-gas resources station and problems in oil-gas resources exploration,

development and utilization, meanwhile, the relative suggestion are put forward. © 2011 Published by Elsevier Ltd. (15 refs)
Main heading: Sustainable development
Controlled terms: Energy resources - Reservoir management - Proven reserves - Planning - Gases
Uncontrolled terms: Advanced technology - China oil-gas resources , sustainable development - Development and utilizations - Development targets - Exploration and development - Oil strategic storage , environment protections - Reservoir monitoring - Upstream industry
Classification Code: 512.1.2 Petroleum Deposits : Development Operations - 525.1 Energy Resources and Renewable Energy Issues - 912.2 Management
Open Access type(s): All Open Access, Gold, Green
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

137. Aluminizing coating prepared on oil casing steel N80 by low-temperature pack cementation

Yu, Wang (1); Min, Huang (1)
Source: *Advanced Materials Research*, v 368-373, p 2180-2184, 2012, *Advances in Civil Engineering and Architecture Innovation*; **ISSN:** 10226680; **ISBN-13:** 9783037852781; **DOI:** 10.4028/www.scientific.net/AMR.368-373.2180; **Conference:** 4th International Conference on Technology of Architecture and Structure, ICTAS 2011, September 22, 2011 - September 24, 2011; **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Materials Science and Engineering, Xi'an Shiyou University, Xi'an, Shaanxi 710065, China
Abstract: Aluminizing has been verified to be an effective way to improve the corrosion resistance of steel due to the formation of continuous Al 2O3 layer, but traditional aluminizing processing carried out at high temperature can not be used to prepare aluminide layer on the surface of oil casing steel. In this paper, an aluminide coating was prepared on oil casing steel N80 by a low-temperature pack cementation only at 803 K for 2 hours by adding zinc in the pack powder and pre-treatment of N80 substrate by surface mechanical attrition. The phase composition, microstructure, element distribution and properties of as-aluminized oil casing steel N80 were characterized by means of XRD, SEM, EDS, micro-hardness test and electrochemical corrosion measurements. The results indicate that aluminide coating mainly consists of FeAl3, Fe2Al5 and FeAl. The continuous aluminide coating with an average thickness around 50 μm could be successfully formed on the surface of oil casing steel N80 which shows a good coherence with as-packed substrate. After preparation of aluminide coating, oil casing steel N80 shows a higher microhardness in the range of aluminizing coating than that of the virgin material because of the formation of iron aluminide. The exception noted is that the proposed low-temperature aluminizing processing does not have any damaging impact on the mechanical properties of steel substrates. Moreover, it is concluded that oil casing steel N80 with aluminizing coating shows a better corrosion resistance than that of original N80 by analyzing of electrochemical test results. (13 refs)
Main heading: Corrosion resistance
Controlled terms: Binary alloys - Cementing (shafts) - Temperature - Microhardness - Alumina - Aluminum coatings - Aluminum oxide - Electrochemical corrosion - High temperature corrosion - Substrates - Corrosion resistant coatings - Microstructure - Steel corrosion - Zinc coatings - Aluminum corrosion
Uncontrolled terms: Aluminide coating - Aluminides - Electrochemical test - Element distribution - High temperature - Iron aluminides - Low temperatures - Microhardness tests - Mircrohardness - Oil casing steel N80 - Pack cementation - Pre-Treatment - Steel substrate - Surface mechanical attrition - Virgin materials - XRD
Classification Code: 539.1 Metals Corrosion - 539.2 Corrosion Protection - 541.1 Aluminum - 545.3 Steel - 641.1 Thermodynamics - 801.4.1 Electrochemistry - 802.2 Chemical Reactions - 804.2 Inorganic Compounds - 813.2 Coating Materials - 951 Materials Science
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

138. A multiaxial fatigue reliability analysis method of casing drilling in casing string

Wang, Ping (1); Qu, Zhan (1, 2); Zhang, Jiong (1); Zhang, Jian Bing (3); Wang, Liang (2)
Source: *Advanced Materials Research*, v 347-353, p 1749-1753, 2012, *Renewable and Sustainable Energy*; **ISSN:** 10226680; **ISBN-13:** 9783037852651; **DOI:** 10.4028/www.scientific.net/AMR.347-353.1749; **Conference:** 2011 International Conference on Energy, Environment and Sustainable Development, ICEESD 2011, October 21, 2011 - October 23, 2011; **Publisher:** Trans Tech Publications

Author affiliation: (1) School of Aeronautics, Northwestern Polytechnical University, No.127 youyi xilu, Xi'an, Shanxi 710072, China (2) Xi'An Shiyou University, No.18,2nd East Dianzi Road, Xi'an, Shanxi, 710065, China (3) School of Mechanical Engineering, Xi'An Shiyou University, No.18,2nd East Dianzi Road, Xi'an, Shanxi, 710065, China
Abstract: The Von Mises equivalent stress criteria is used to equivalent convert and correct the uniaxial and biaxial fatigue reliability experimental study of the casing material. And the probabilistic fatigue P-S-N curve of the casing is gained. The fatigue limit and fatigue life in test is equivalent convert to actual casing by combined stress correction factor. A multiaxial fatigue life calculation formula is proposed by correcting the probabilistic fatigue P-S-N curve. © (2012) Trans Tech Publications, Switzerland. (8 refs)
Main heading: Fatigue of materials
Controlled terms: Reliability analysis
Uncontrolled terms: Biaxial fatigue - Calculation formula - Casing drilling - Casing materials - Casing strings - Combined stress - Correction factors - Experimental studies - Fatigue Limit - Multi-axial fatigue - Multiaxial fatigue life - P-S-N curves - Probabilistic fatigue - Von Mises equivalent stress
Classification Code: 951 Materials Science
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

139. Improving the output spectral flatness of fiber ASE source with three-stage double-pump configuration

Liu, Ying-Gang (1); Jia, Zhen-An (1); Qiao, Xue-Guang (1); Fu, Hai-Wei (1); Li, Li (1)
Source: *Guangdianzi Jiguang/Journal of Optoelectronics Laser*, v 23, n 11, p 2061-2065, November 2012; **Language:** Chinese; **ISSN:** 10050086; **Publisher:** Board of Optronics Lasers
Author affiliation: (1) Shaanxi Key Laboratory of Photoelectric Sensing Logging, Xi'an Shiyou University, Xi'an 710065, China
Abstract: In order to satisfy the demands for the spectral bandwidth and flatness of light source in fiber Bragg grating (FBG) sensing and wavelength division multiplexing (WDM) fiber optic communication system, using the method of adjusting structural parameters and gain filtering technique, the output spectrum of erbium-doped fiber amplified spontaneous emission (ASE) source with three-stage double-pump configuration is flattened. Through optimizing the lengths of three stages of erbium-doped fibers (EDFs) and adjusting the forward and backward pump power, the output spectrum covers conventional-wavelength band (C-band) and long-wavelength band (L-band), and the spectral protrusion near 1570 nm is flattened. Meanwhile, according to the characteristics of the output spectrum, we design a long period fiber grating (LPFG)-based gain flattening filter, and eliminate the spectral protrusion near the 1532 nm absorption peak of EDF, which is the secondary flattening for the output spectrum. The results show that the ASE spectral flatness is better than 0.76 dBm, and the 3 dB spectral bandwidth is more than 80 nm in C+L-band. (17 refs)
Main heading: Fiber optics
Controlled terms: Absorption spectroscopy - Light sources - Optical fiber communication - Bandwidth - Erbium - Photonic bandgap fibers - Spontaneous emission - Fiber Bragg gratings
Uncontrolled terms: Absorption peaks - Amplified spontaneous emission source - ASE source - Backward pumps - Erbium doped fibers - Fiberoptic communication systems - Filtering technique - Flatness - Gain flattening filters - In-fiber Bragg gratings - Long period fiber grating - Long-wavelength bands - Output spectral - Output spectrum - Spectral bandwidth - Spectral flatness - Spectrum - Structural parameter
Classification Code: 547.2 Rare Earth Metals - 711 Electromagnetic Waves - 716.1 Information Theory and Signal Processing - 717.1 Optical Communication Systems - 741.1.2 Fiber Optics - 951 Materials Science
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

140. Study on a data acquisition system for logging while drilling

Shenghu, Liu (1); Xing, Yamin (2)
Source: *Applied Mechanics and Materials*, v 198-199, p 1246-1249, 2012, *Applied Mechanics, Mechatronics Automation and System Simulation*; **ISSN:** 16609336, **E-ISSN:** 16627482; **DOI:** 10.4028/www.scientific.net/AMM.198-199.1246; **Conference:** 2012 International Applied Mechanics, MechatronicsAutomation and System Simulation Meeting, AMMASS 2012, June 24, 2012 - June 26, 2012; **Publisher:** Trans Tech Publications
Author affiliation: (1) Key Laboratory of photoelectric logging and detecting of oil and gas, Ministry of Education, Xi'an Shiyou University, Xi'an, Shaanxi, 710065, China (2) Quality supervision and inspection center of Petroleum industry instruments, CNPC Xi'an Shiyou University, Xi'an, Shaanxi, 710065, China

Abstract: This electronic Logging while drilling (LWD) is a new sort of well drilling technology developed in recent years. As to the traditional cable borehole survey, the LWD method has many advantages because of its higher accuracy, higher geologic strata resolution capacity, much less time and cost. To meet the current logging technology needs, A data acquisition and processing system for logging while drilling is designed. It minutely introduces the collection system structure, acquisition Program, the digital design of LWD and discusses the design and the implementation of each functional module. The system which designed on the basis of the high precise DSP and FPGA implements signal pretreatment, high speed A/D control and digitalization of the phase sensitive demodulation etc, optimizes the acquisition and processing system and supplies a new way for the development of logging while drilling. Experimental results show that system performance has attained the design requirement. © (2012) Trans Tech Publications, Switzerland. (9 refs)
Main heading: Digital signal processing
Controlled terms: Logging while drilling - Data handling - Electromagnetic logging - Analog to digital conversion - Data acquisition - Drilling
Uncontrolled terms: Acquisition programs - Collection systems - Data acquisition and processing systems - Data acquisition system - Design requirements - Digital designs - Drilling technology - Functional modules - High speed a/d - Logging while drilling - Phase sensitive demodulation - Phase sensitive detection - Pre-Treatment - Processing systems - Resistivity logging
Classification Code: 512.1.2 Petroleum Deposits : Development Operations - 701 Electricity and Magnetism - 723.2 Data Processing and Image Processing
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

141. Research on LWD transmit circuit based on DDS technology

Xing, Yamin (1); Liu, Shenghu (2)
Source: *Applied Mechanics and Materials*, v 220-223, p 1052-1055, 2012, *Advances in Manufacturing Technology*; **ISSN:** 16609336, **E-ISSN:** 16627482; **ISBN-13:** 9783037855034; **DOI:** 10.4028/www.scientific.net/AMM.220-223.1052; **Conference:** 2nd International Conference on Advanced Design and Manufacturing Engineering, ADME 2012, August 16, 2012 - August 18, 2012; **Publisher:** Trans Tech Publications
Author affiliation: (1) Quality supervision and inspection center of Petroleum industry instruments, CNPC Xi'an Shiyou University, Xi'an, Shaanxi, 710065, China (2) Key Laboratory of photoelectric logging and detecting of oil and gas, Ministry of Education, Xi'an Shiyou University, Xi'an, Shaanxi, 710065, China
Abstract: A new type of logging transmit circuit applied to measurement while drilling (MWD) based on DDS technology is presented. As for logging instrument, Electromagnetic wave source is very important. The logging transmit circuit adopts TMS320VC33 series digital signal processing chip as main controller, in addition, LWD(logging while drilling) signal waveform generation circuit, peripheral signal processing circuit, DDS module, DSP and AD9850 interfaces, etc have been given.2MHz and 400KHz digital transmit circuit mainly composed of DDS AD9850, which carries out the shift of the phase and the limit of the amplitude easily, has been designed and debugged successfully. it is used to substitute for the conventional transmit circuit, so the all-digital transmit channel of phase shift is achieved. The experimental results show that the logging transmit circuit for MWD is feasible. © (2012) Trans Tech Publications, Switzerland. (6 refs)
Main heading: Electromagnetic waves
Controlled terms: Logging while drilling - Timing circuits - Digital signal processing - Low power electronics
Uncontrolled terms: Direct digital synthesizer - Electro-magnetic resistivities - Frequency stabilization - Low Power - Measurement while drillings
Classification Code: 512.1.2 Petroleum Deposits : Development Operations - 711 Electromagnetic Waves - 713.4 Pulse Circuits
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

142. Electronic transport properties of single-walled zigzag silicon carbide nanotubes with antisite defects

Song, Jiuxu (1); Liu, Hongxia (2)
Source: *Advanced Materials Research*, v 403-408, p 1130-1134, 2012, *MEMS, NANO and Smart Systems*; **ISSN:** 10226680; **ISBN-13:** 9783037853122; **DOI:** 10.4028/www.scientific.net/AMR.403-408.1130; **Conference:** 2011 7th International Conference on MEMS, NANO and Smart Systems, ICMENS 2011, November 4, 2011 - November 6,

2011; **Sponsor:** Int. Assoc. Comput. Sci. Inf. Technol.; Singapore Institute of Electronics; **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Electronic Engineering, Xi'an Shiyou University, Xi'an, China (2) Xi'an Institute of Microelectronic Technology, Xi'an, China
Abstract: The electronic transport properties are the basis for investigations on silicon carbide nanotube (SiCNT), which are suitable to develop novel nanometer electronic devices. The electronic transport properties of single-walled (8, 0) SiCNTs with antisite defects are investigated with the method combined non-equilibrium Green's function with density functional theory. Results show that the similarity on electronic transport properties of the nanotube with different defects is high. Under a bias value greater than 1.0 V, a nearly exponential relationship between the bias and the current is achieved, which originates from more orbital participating in its transport properties caused by the increase of the bias. © (2012) Trans Tech Publications, Switzerland. (11 refs)
Main heading: Transport properties
Controlled terms: Nanotubes - Point defects - Yarn - Silicon carbide - Density functional theory
Uncontrolled terms: Anti-site defect - Electronic device - Electronic transport properties - Non-equilibrium Green's function - SiCNT - Silicon carbide nanotubes - Single-walled
Classification Code: 761 Nanotechnology - 804.2 Inorganic Compounds - 819.4 Fiber Products - 922.1 Probability Theory - 931.2 Physical Properties of Gases, Liquids and Solids - 931.3 Atomic and Molecular Physics - 931.4 Quantum Theory; Quantum Mechanics - 933.1 Crystalline Solids - 933.1.1 Crystal Lattice
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

143. Electronic transport properties of SiC nanotube with antisite defect

Song, Jiuxu (1); Liu, Hongxia (2)
Source: *Applied Mechanics and Materials*, v 110-116, p 5495-5499, 2012, *Mechanical and Aerospace Engineering*; **ISSN:** 16609336, **E-ISSN:** 16627482; **ISBN-13:** 9783037852620; **DOI:** 10.4028/www.scientific.net/AMM.110-116.5495; **Conference:** 2nd International Conference on Mechanical and Aerospace Engineering, ICMAE 2011, July 29, 2011 - July 31, 2011; **Sponsor:** Int. Assoc. Comput. Sci. Inf. Technol. (IACSIT); **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Electronic Engineering, Xi'an Shiyou University, Xi'an, China (2) Xi'an Institute of Microelectronic Technology, Xi'an, China
Abstract: The electronic transport properties of an (8, 0) SiC nanotube (SiCNT) with antisite defect are investigated with the method combined non-equilibrium Green's function with density functional theory, in which the defect is formed with a carbon atom being substituted by a silicon atom. In transmission spectrum of the nanotube, a transmission valley about 1.68 eV near the Fermi energy is discovered, which indicates that the nanotube is a wide band-gap semiconductor. In its current-voltage characteristic, turn-on voltages of ±1.0 V are found under positive and negative bias. This originates from more orbital participating in its electronic transport properties caused by the bias. These results are meaningful to investigations on working mechanisms of SiCNT electronic devices. © (2012) Trans Tech Publications, Switzerland. (8 refs)
Main heading: Wide band gap semiconductors
Controlled terms: Bias voltage - Density functional theory - Silicon carbide - Transport properties - Yarn - Nanotubes - Current voltage characteristics - Defect density - Energy gap - Point defects
Uncontrolled terms: A-carbon - Anti-site defect - Electronic device - Electronic transport properties - Negative bias - Non-equilibrium Green's function - SiC nanotubes - SiCNT - Silicon atoms - Transmission spectrums - Wide-band-gap semiconductor - Working mechanisms
Classification Code: 712.1 Semiconducting Materials - 713 Electronic Circuits - 761 Nanotechnology - 804.2 Inorganic Compounds - 819.4 Fiber Products - 922.1 Probability Theory - 931.2 Physical Properties of Gases, Liquids and Solids - 931.3 Atomic and Molecular Physics - 931.4 Quantum Theory; Quantum Mechanics - 933.1 Crystalline Solids - 933.1.1 Crystal Lattice - 933.3 Electronic Structure of Solids
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

144. Evaluation of multistage fracturing by hydrajet, swellable packer and comprehensive packer techniques in horizontal openhole wells (SPE 153328)

Zhang, Y. (1); Mu, L. (1); Ma, X. (1); Ling, Y. (1); Gu, Y. (1); Zhou, D. (2)
Source: *74th European Association of Geoscientists and Engineers Conference and Exhibition 2012 Incorporating SPE EUROPEC 2012: Responsibly Securing Natural Resources*, p 1742-1748, 2012; **ISBN-13:** 9781629937908;
Conference: 74th European Association of Geoscientists and Engineers Conference and Exhibition 2012

Incorporating SPE EUROPEC 2012: Responsibly Securing Natural Resources, June 4, 2012 - June 7, 2012; **Sponsor:** Dong Energy; et al.; ExxonMobil; Maersk Oil; Shell; Statoil; **Publisher:** European Association of Geoscientists and Engineers, EAGE
Author affiliation: (1) Petro China Exploration and Development Research Inst, China (2) Xian Petroleum University, China
Abstract: Horizontal openhole wells are commonly fractured by one of the three hydraulic fracturing techniques of hydrajet, swellable parker and compressive packer techniques. The paper reviews the application of 23 wells fractured by hydrajet (12 wells), swellable parker (4 wells) and compressive packer (7 wells) in tight gas sands in China. None method is overwhelming in the view of increasing production rate from the paper. The paper presented that different treatment pressures among stages may not a signal of perfect isolation. Created traverse fracture by hydraulic stimulation may not be at the middle of two packers or at the place of opened sleeve port for swellable packer and mechanical packer stimulation. Hydrajetting is a good choice to stimulate a specific place along the entire wellbore. Unlike in vertical wells, hydrajetting may not reduce the breakdown pressure in horizontal well treatment. The presented comprehensive comparison and discussion of the three fracturing methods will help operators understand the three methods better and accomplish production goals. (7 refs)
Main heading: Packers
Controlled terms: Hydraulic fracturing - Horizontal wells - Tight gas - Fracture
Uncontrolled terms: Breakdown pressure - Comprehensive comparisons - Different treatments - Fracturing techniques - Hydraulic stimulations - Increasing production - Multistage fracturing - Production goals
Classification Code: 511.2 Oil Field Equipment - 512.1.1 Oil Fields - 512.1.2 Petroleum Deposits : Development Operations - 512.2 Natural Gas Deposits - 522 Gas Fuels - 951 Materials Science
Database: Compendex
Data Provider: Engineering Village
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145. A study of downhole drillable pulsing cementing device with low frequency self-excited hydraulic oscillation and its field application

Nie, Cui Ping (1); Ye, Deng Sheng (2)
Source: *Advanced Materials Research*, v 450-451, p 1536-1539, 2012, *Trends in Building Materials Research*;
ISSN: 10226680; **ISBN-13:** 9783037853481; **DOI:** 10.4028/www.scientific.net/AMR.450-451.1536; **Conference:** 2nd International Conference on Structures and Building Materials, ICSBM 2012, March 9, 2012 - March 11, 2012; **Sponsor:** Beijing Univ. Technol., Coll. Archit. Civ. Eng.; Zhejiang Univ. Technol., Sch. Civ. Eng. Archit.; **Publisher:** Trans Tech Publications
Author affiliation: (1) Xi'an ShiYou University, Xi'an, Shaanxi, China (2) ChuanQing Drilling and Exploration Engineering Ltd., ChengDu, SiChuan, China
Abstract: Usually we pay more attention on how to improve gas well cementing quality in engineering design and field operations, and there are so many studies on cement agents but few researches on cement slurry injection technology. The field practice proved that conventional cementing technology can not ensure the cementing quality especially in gas well and some abnormal pressure wells. Most of the study is concentrated on cement agents and some cementing aspects such as wellbore condition, casing centralization etc. All the factors analysis on cementing quality has pointed out that a combination of good agents and suitable measurements can improve cementing quality effectively. The essential factor in cementing is to enhance the displacement efficiency, but normal hole condition and casing centralization are the fundamental for cementing only. Pulsing cementing is the technology that it can improve the displacement efficiency especially in reservoir well interval, also it can shorten the period from initial to ultimate setting time for cement slurry or improve thickening characteristics, and then to inhibit the potential gas or water channeling. Based on systematically research, aiming at improving in 7? liner cementing, where there are multi gas reservoirs in long interval in SiChuan special gas field, well was completed with upper 7? liner and down lower 5? liner, poor cementing bonding before this time. So we stressed on the study of a downhole low frequency self-excited hydraulic oscillation pulsing cementing drillable device and its application, its successful field utilization proved that it is an innovative tool, and it can improve cementing quality obviously. © (2012) Trans Tech Publications, Switzerland. (9 refs)
Main heading: Cements
Controlled terms: Gases - Natural gas well production - Natural gas wells - Cementing (shafts) - Gas industry - Setting
Uncontrolled terms: Abnormal pressure - Cement slurry - Cementing quality - Cementing technology - Displacement efficiency - Downholes - Engineering design - Factors analysis - Field application - Field operation - Gas fields - Gas reservoir - Gas well - Low frequency - Self-excited hydraulic oscillation - Setting time - Sichuan - Wellbore
Classification Code: 412.1 Cement - 512.2.1 Natural Gas Fields - 522 Gas Fuels
Database: Compendex

Data Provider: Engineering Village
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146. Application of air-cooled Close-loop Self-circulation evaporative cooling system on wind power generator

Li, Jingming (1); Song, Fuchuan (2); Gu, Guobiao (2); Tian, Xindong (2)
Source: *Advanced Materials Research*, v 512-515, p 675-678, 2012, *Renewable and Sustainable Energy II*; **ISSN:** 10226680; **ISBN-13:** 9783037854143; **DOI:** 10.4028/www.scientific.net/AMR.512-515.675; **Conference:** 1st International Conference on Energy and Environmental Protection, ICEEP 2012, June 23, 2012 - June 24, 2012; **Publisher:** Trans Tech Publications
Author affiliation: (1) Xi'an Shiyou University, Xi'an, China (2) Institute of Electrical Engineering, Chinese Academy of Science, Beijing, China
Abstract: The application of evaporative cooling technology in the cooling of large wind power generator is a new attempt in the discovery of wind power energy. In some particular circumstances, the air-cooling condenser must be adopted as the secondary cooler in the evaporative cooling system of large wind generator. For the cooling medium in the air-cooling condenser is the air and the distribution of temperature is uneven along the cooling tube, so it's necessary to do deep research on it. Experiments are carried out to study the heat transfer characteristics of the air-cooling condenser used in the Close-loop Self-circulating (CLSC) evaporative cooling system. The temperature distribution and the heat transfer can be acquired from the experiment. Thorough study is carried out on restart up of the close-loop evaporative cooling system of the wind power generator. Experiments are done in the laboratory and real wind power generator, and it's found that there is a critical point in the restart up of the generator. Only if the flow head overcome the critical point can the wind power generator restart automatically. The result shows that heat transfer can be enhanced by some special method and the air-cooling condenser can satisfy the demand of the cooling system. © (2012) Trans Tech Publications, Switzerland. (7 refs)
Main heading: Evaporative cooling systems
Controlled terms: Evaporation - Wind power - Cooling - Thermoelectric equipment
Uncontrolled terms: Air-cooling condenser - Auto-start - Close loop - Cooling medium - Cooling tubes - Critical points - Distribution of temperature - Evaporative cooling - Heat transfer characteristics - Power energy - Self-circulation - Wind generator systems
Classification Code: 615.4 Thermoelectric Energy - 615.8 Wind Power (Before 1993, use code 611) - 641.2 Heat Transfer - 802.3 Chemical Operations
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

147. The survey and research on application of cloud computing

Ma, Wenqing (1, 2); Zhang, Jing (1)
Source: *ICCSE 2012 - Proceedings of 2012 7th International Conference on Computer Science and Education*, p 203-206, 2012, *ICCSE 2012 - Proceedings of 2012 7th International Conference on Computer Science and Education*; **ISBN-13:** 9781467302425; **DOI:** 10.1109/ICCSE.2012.6295057; **Article number:** 6295057; **Conference:** 2012 7th International Conference on Computer Science and Education, ICCSE 2012, July 14, 2012 - July 17, 2012; **Sponsor:** University of Melbourne; **Publisher:** IEEE Computer Society
Author affiliation: (1) School of Computer Science and Engineering, Xi'an University of Technology, Xi'an, China (2) Xi'an Shiyou University, Xi'an, China
Abstract: Cloud computing has now become the largest hearing field and question in IT industry and each industry join in the development of cloud. This article studies the popular cloud platforms and cloud services on the basis of three types of cloud services, introduces the Google's cloud computing technology - GFS, MapReduce, Bigtable which has the most application prospects. And it analysis the application scene and prospect of the three types of clouds, forecasts that the cloud technology is the most mainstream development direction in IT in 21 century. And cloud computing offer opportunities and challenges not only to the IT manufacturers but also to every country. © 2012 IEEE. (10 refs)
Main heading: Web services
Controlled terms: Software as a service (SaaS) - Audition - Infrastructure as a service (IaaS) - Distributed database systems - Application programs - Platform as a Service (PaaS)
Uncontrolled terms: Application prospect - Cloud computing technologies - Cloud platforms - Cloud services - Cloud technologies - Development directions - IT industry - Map-reduce
Classification Code: 461.4 Ergonomics and Human Factors Engineering - 722.4 Digital Computers and Systems - 723 Computer Software, Data Handling and Applications - 723.3 Database Systems - 941.1 Acoustical Instruments

Database: Compendex
Data Provider: Engineering Village
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148. Analysis of influence to the connect and seal ability of tubing connection of inner pressures

Dou, Yihua (1); Cao, Yinping (1); Zhang, Fuxiang (2); Yang, Xiangtong (2)
Source: *Advanced Materials Research*, v 503-504, p 790-793, 2012, *Frontiers of Manufacturing Science and Measuring Technology II*; **ISSN:** 10226680; **ISBN-13:** 9783037854044; **DOI:** 10.4028/www.scientific.net/AMR.503-504.790; **Conference:** 2012 2nd International Conference on Frontiers of Manufacturing Science and Measuring Technology, ICFMM 2012, June 12, 2012 - June 13, 2012; **Sponsor:** Control Engineering and Information Science Research Association; Int. Front. Sci. Technol. Res. Assoc.; Trans Tech Publications; Chin-Yi University of Technology; **Publisher:** Trans Tech Publications
Author affiliation: (1) Xi'an Shiyou University, Xi'an, Shaanxi, 710065, China (2) Tarim Oilfield Company, CNPC, Korla, Xinjiang 841000, China
Abstract: To know the stress distribution of tubing connections with varied inner pressures for further understanding of the influence of pressures to the connection and seal ability, finite element model of API tubing connection was established and the Vo n Mises stresses and contact pressures of tubing connection was analyze by full make-up torque and varied inner pressures with nonlinear finite element method. It was found that the contact pressures and stresses on engagement threads may be increased with limited inner pressure. Meanwhile, stresses of engagement threads on both ends increased more sharply than others. And plastic deformation even breakage of engagement threads may occur if the inner pressure exceeds 70MPa. © (2012) Trans Tech Publications. (5 refs)
Main heading: Finite element method
Controlled terms: Tubing
Uncontrolled terms: Connect ability - Contact pressures - Finite Element - Finite element models - Inner pressure - Make-up torque - Mises stress - Nonlinear finite element method - Seal-ability
Classification Code: 619.1 Pipe, Piping and Pipelines - 921.6 Numerical Methods
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

149. Analysis of "CPOE62"workover platform's bottom stability

Bao, Zefu (1); Hong, Cai (2); Jiang, Yazhou (1); Wang, Jiangping (1)
Source: *Advanced Materials Research*, v 452-453, p 1312-1317, 2012, *Management, Manufacturing and Materials Engineering*; **ISSN:** 10226680; **ISBN-13:** 9783037853511; **DOI:** 10.4028/www.scientific.net/AMR.452-453.1312; **Conference:** 2011 International Conference on Management, Manufacturing and Materials Engineering, ICMMM 2011, December 8, 2011 - December 10, 2011; **Sponsor:** Int. Assoc. Manage. Sci. Eng. Technol. (IAMSET); **Publisher:** Trans Tech Publications
Author affiliation: (1) Xian Petroleum University, Shaanxi, China (2) China National Offshore Oil Corporation, Beijing, China
Abstract: "CPOE62"platform is a self-elevating workover platform. Under the construction and service process,because of the particularity of work environment,Not only does it bear its own weight and variable load, but also bears the role of environmental load all the time. Sometimes this environment load will have an enormous destruction. Based on the analysis of environmental load, the author checks the bottom stability and verifies it through ANSYS. These will provide some useful information for the deep sea platform research in Bohai Sea deep-water oil and gas development, which achieves higher security and economic efficiency. © (2012) Trans Tech Publications. (2 refs)
Main heading: Economic efficiency
Uncontrolled terms: Ansys - Bohai Sea - Deep sea - Deepwater - Economic efficiency - Environment load - Environmental loads - Oil and gas - Service process - Variable loads - Work environments - Workover
Classification Code: 911.2 Industrial Economics
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

150. Development of fault diagnosis system for Telemetry Equipment based on the virtual instrument technology

Biao, Lai (1); Jia, Huiqin (2)
Source: *Applied Mechanics and Materials*, v 128-129, p 571-574, 2012, *Measuring Technology and Mechatronics Automation IV*; **ISSN:** 16609336, **E-ISSN:** 16627482; **ISBN-13:** 9783037852842; **DOI:** 10.4028/www.scientific.net/AMM.128-129.571; **Conference:** 4th International Conference on Measuring Technology and Mechatronics Automation, ICMTMA 2012, January 6, 2012 - January 7, 2012; **Sponsor:** Hunan University of science and Technology; Changsha University of Science and Technology; Huan instrument and Control Society; **Publisher:** Trans Tech Publications
Author affiliation: (1) 50 Unit of 91245 Army, Huludao 125001, China (2) Xi'An Shiyou University, Xi'an, Shannxi 710065, China
Abstract: A fault diagnosis system based on the Client/Server mode is developed, which realizes the purpose of diagnosing the Telemetry Equipment placing on the station address through local or IP network. And the fault method uses the fault tree to describe the logic relation between fault nodes. And the fault tree is realized by virtual instrument. The signal acquisition module uses PXI architecture, the interactive user interface is develops under LabVIEW graphical software and the data storage uses SQL server database platform. The developed fault diagnosis system can realize the functions of information management on instrument and fault node, fault detection or location, and device remote control. Now this system is used in test area, which improves the telemetry equipment maintenance rate. (9 refs)
Main heading: Failure analysis
Controlled terms: Remote control - Fault detection - Electric fault currents - Digital storage - User interfaces - Information management - Computer programming languages - Digital instruments - Signal processing - Telemetering equipment
Uncontrolled terms: Client/server - Data storage - Database - Fault diagnosis systems - Fault-trees - Interactive user interfaces - IP networks - LabViEW - Signal acquisitions - SQL servers - Telemetry equipment - Virtual instrument - Virtual instrument technology
Classification Code: 701.1 Electricity: Basic Concepts and Phenomena - 716.1 Information Theory and Signal Processing - 722.1 Data Storage, Equipment and Techniques - 722.2 Computer Peripheral Equipment - 723.1.1 Computer Programming Languages - 731.1 Control Systems
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

151. Torque calibration device for hydraulic tubing tongs and its experiment

Zhang, Fuxiang (1); Li, Yuanbin (1); Yang, Xiangtong (1); Dou, Yihua (2)
Source: *Advanced Materials Research*, v 503-504, p 1146-1149, 2012, *Frontiers of Manufacturing Science and Measuring Technology II*; **ISSN:** 10226680; **ISBN-13:** 9783037854044; **DOI:** 10.4028/www.scientific.net/AMR.503-504.1146; **Conference:** 2012 2nd International Conference on Frontiers of Manufacturing Science and Measuring Technology, ICFMM 2012, June 12, 2012 - June 13, 2012; **Sponsor:** Control Engineering and Information Science Research Association; Int. Front. Sci. Technol. Res. Assoc.; Trans Tech Publications; Chin-Yi University of Technology; **Publisher:** Trans Tech Publications
Author affiliation: (1) Tarim Oilfield Company, CNPC, Korla, Xinjiang, 841000, China (2) Xi'an Shiyou University, Xi'an, Shaanxi, 710065, China
Abstract: Because of big error of torque measured by hydraulic tubing tongs, tubing connections may be over or less engaged, which will result in leakage of tubing connection and abnormal annular casing pressure. The primary reason of big error was that systematic error couldn't be verified because of indirect of hydraulic tubing tongs. To solve this problem, 10000N.m and 15000N.m hydraulic tubing tongs were designed and manufactured. The devices have received two national patents and accredited by authority of the State Department. Experimental procedures and regulations were developed. It was found that hydraulic tubing tongs worked in a stable situation and values recorded by hydraulic tubing tongs were more accurate. © (2012) Trans Tech Publications. (3 refs)
Main heading: Errors
Controlled terms: Calibration - Tubing
Uncontrolled terms: Casing pressure - Completed strings - Experimental procedure - Experimental rules
Classification Code: 619.1 Pipe, Piping and Pipelines
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

152. A downward signal processing method for rotary steerable drilling system based on signal similarity

Tang, Nan (1); Wang, Yuelong (1); Huo, Aiqing (1); Cheng, Weibin (1)
Source: *Shiyou Kantan Yu Kaifa/Petroleum Exploration and Development*, v 39, n 1, p 111-117, February 2012;
Language: Chinese; **ISSN:** 10000747; **Publisher:** Science Press
Author affiliation: (1) Shaanxi Key Laboratory of Oil-Drilling Rigs Controlling Technique, Xi'an Shiyou University, Xi'an 710065, China
Abstract: To identify downhole command signals accurately and efficiently with negative fluid pulse intervals in the rotary steerable drilling engineering and solve the complex operation and high error rate problems in the command identification and explanation process of downhole receivers, this paper presents a signal process method based on signal similarity principle. In this method, command instructions expressed by drilling fluid pulse width signal are obtained by comparing the self-correlation degree of sampling signal amplitudes at each interval, and the downhole sampling signals are compared interval by interval according to a fixed rule, and command identification is achieved by three steps, i. e. judgment for the start of signal, calculation for digital bits of the command, and assembling of command word. The recursive practical algorithms suitable for downhole processing are proposed. The results show that the method can simplify operation program and improve the reliability and ability of interference killing for the signal identification, and is especially good for overcoming the effects of peak and periodic interference on time counting and the effects of inertia of transmitting channel and low frequency noise on signal jump edge judging. (15 refs)
Main heading: Signal sampling
Controlled terms: Signal processing - Drilling fluids - Processing - Signal receivers
Uncontrolled terms: Complex operations - Correlation function - Downhole processing - Drilling fluid pulse - Low-Frequency Noise - Rotary-steerable drilling - Signal identification - Similarity principle
Classification Code: 716.1 Information Theory and Signal Processing - 723.2 Data Processing and Image Processing - 913.4 Manufacturing - 922 Statistical Methods
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

153. On resistance of coolant in air-cooling condenser of self-circulating close-loop evaporative cooling system of wind power generator

Li, Jingming (1); Song, Fuchuan (2); Gu, Guobiao (2); Tian, Xindong (2)
Source: *Advanced Materials Research*, v 512-515, p 743-746, 2012, *Renewable and Sustainable Energy II*; **ISSN:** 10226680; **ISBN-13:** 9783037854143; **DOI:** 10.4028/www.scientific.net/AMR.512-515.743; **Conference:** 1st International Conference on Energy and Environmental Protection, ICEEP 2012, June 23, 2012 - June 24, 2012;
Publisher: Trans Tech Publications
Author affiliation: (1) Xi'an Shiyou University, Xi'an, China (2) Institute of Electrical Engineering, Chinese Academy of Science, Beijing, China
Abstract: As a clean and renewable energy, the wind power has attracted the attention of all nations in the world. Evaporative cooling technology has successfully been used in the research and development of wind power generator, but some key technique has to be studied in advance to insure the reliability of the very technology. The application of evaporative cooling technology in the cooling of large wind power generator is a new attempt in the discovery of wind power energy. Thorough study is carried out on the key technique of the application of close-loop self-circulation (CLSC) evaporative cooling technology on the running of wind power generator. The flow resistance of the coolant in the air cooling condenser is discussed in this paper, and a new approach is founded for the improvement of the reliability. © (2012) Trans Tech Publications, Switzerland. (7 refs)
Main heading: Wind power
Controlled terms: Cooling - Evaporative cooling systems - Evaporation - Coolants - Semiconductor junctions
Uncontrolled terms: Air cooling - Air-cooling condenser - Close loop - Evaporative cooling - Flow resistance - Key techniques - On-resistance - Power energy - Renewable energies - Research and development - Self-circulation
Classification Code: 615.8 Wind Power (Before 1993, use code 611) - 641.2 Heat Transfer - 714.2 Semiconductor Devices and Integrated Circuits - 802.3 Chemical Operations - 803 Chemical Agents and Basic Industrial Chemicals
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

154. A study of hydraulic jet fracturing in shallow reservoir

Nie, CuiPing (1); Dai, XuChao (2); Ning, Chuang (2)
Source: *Advanced Materials Research*, v 538-541, p 1769-1772, 2012, *Materials Processing Technology II*; **ISSN:** 10226680; **ISBN-13:** 9783037854471; **DOI:** 10.4028/www.scientific.net/AMR.538-541.1769; **Conference:** 2nd

International Conference on Advanced Engineering Materials and Technology, AEMT 2012, July 6, 2012 - July 6, 2012; **Publisher:** Trans Tech Publications
Author affiliation: (1) Xi'an ShiYou University, Xi'an, Shaanxi,710065, China (2) Yanchang Oilfield Co. Ltd, Yanan, Shaanxi,716001, China
Abstract: The C6 reservoir of YC formation is shallowly buried in QiLiCun oilfield, Ordos basin. It's a layered, ultra-low permeable and low pressure oil pool with poor productivity. Hydraulic fracturing is the necessary and only effective stimulation way for economic oil production. There are several calcareous interbeds in it, the thin and heterogeneous oil-bearing layers here are poorly connected or even unconnected in vertical. And it is prone to forming artificially horizontal hydraulic fracture for its particular payzone in-situ stresses. In conventional fracturing stimulation, only 1 or 2 fractures are feasible. Then few producing layers were employed only in production. Aiming at multiple horizontal fractures should be located exactly in hole, based on its affecting factors intensive analyzing in fracturing and field technological stimulation mechanism research, a study and application of hydraulic jet fracturing (HJF) has been introduced. A 2 stage fracturing of 2.5m space has been finished. It's a breakthrough or milestone for conventional operation. The successful pilot test has proved that fracture can be located exactly by HJF and then well productivity is enhanced obviously also. According to the operation practice, some feasible operation measures improvement has been discussed in detail. HJF should be the predominant technology for the field. © (2012) Trans Tech Publications, Switzerland. (5 refs)
Main heading: Fracture
Controlled terms: Hydraulic fracturing - Oil fields
Uncontrolled terms: Affecting factors - Effective stimulation - Horizontal fracture stimulation - Horizontal fractures - Hydraulic fracture - Insitu stress - Low permeable reservoirs - Low pressures - Multi-fractures stimulation - Oil pools - Oil production - Ordos Basin - Pilot tests - Shallow reservoirs - Stimulation mechanism - Study and applications - Well productivity
Classification Code: 421 Strength of Building Materials; Mechanical Properties - 511 Oil Field Equipment and Production Operations - 512.1.2 Petroleum Deposits : Development Operations - 951 Materials Science
Database: Compendex
Data Provider: Engineering Village
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155. Design and fabrication of vibration measurement device for completion tubing strings in high pressure gas well

Zhang, Fuxiang (1); Ji, Xiaohong (1); Yang, Xiangtong (1); Dou, Yihua (2)
Source: *Advanced Materials Research*, v 503-504, p 1318-1321, 2012, *Frontiers of Manufacturing Science and Measuring Technology II*; **ISSN:** 10226680; **ISBN-13:** 9783037854044; **DOI:** 10.4028/www.scientific.net/AMR.503-504.1318; **Conference:** 2012 2nd International Conference on Frontiers of Manufacturing Science and Measuring Technology, ICFMM 2012, June 12, 2012 - June 13, 2012; **Sponsor:** Control Engineering and Information Science Research Association; Int. Front. Sci. Technol. Res. Assoc.; Trans Tech Publications; Chin-Yi University of Technology; **Publisher:** Trans Tech Publications
Author affiliation: (1) Tarim Oilfield Company, CNPC, Korla, Xinjiang, 841000, China (2) Xi'an Shiyou University, Xi'an, Shaanxi, 710065, China
Abstract: The vibration of completion tubing strings and mechanical analysis were not accurately verified by field experiment because of the limited downhole space and the difficulty of downhole measurement. So vibration measurement device for completion tubing strings was designed and fabricated. The device was fixed in thousands of meters downhole with tubing strings. The vibration data of the tubing strings was recorded in the well testing process and compared with the theoretical calculation result to perfect the theory research and analysis results. The device design referred to downhole electronic pressure gauge and other downhole tools and was proved to meet design requirements by laboratory experiments and field. Through the device of the built-in accelerometer measuring string vibration acceleration, the vibration state of completion tubing strings were known and vibration frequency of tubing strings were estimated. Vibration state was proved to exist in completion tubing string of high pressure gas well by field testing. © (2012) Trans Tech Publications. (5 refs)
Main heading: Fabrication
Controlled terms: Natural gas wells - Tubing - Well testing - Vibration analysis
Uncontrolled terms: Design requirements - Device design - Down-hole tool - Downhole measurements - Downholes - Electronic pressure - Field experiment - Field testing - High pressure gas - Laboratory experiments - Mechanical analysis - Research and analysis - String vibrations - Testing process - Theoretical calculations - Tubing string - Vibration data - Vibration frequency - Vibration state
Classification Code: 512.2.1 Natural Gas Fields - 619.1 Pipe, Piping and Pipelines
Database: Compendex
Data Provider: Engineering Village

Compilation and indexing terms, Copyright 2023 Elsevier Inc.

156. Nonlinear dynamics model of servo platform for steering drilling tool

Wang, Yue-Long (1); Yang, Ying-Na (1); Tang, Nan (1); Huo, Ai-Qing (1); Cheng, Wei-Bin (1)
Source: *Proceedings of 2012 International Conference on Measurement, Information and Control, MIC 2012*, v 2, p 892-895, 2012, *Proceedings of 2012 International Conference on Measurement, Information and Control, MIC 2012*; **ISBN-13:** 9781457716027; **DOI:** 10.1109/MIC.2012.6273430; **Article number:** 6273430; **Conference:** 2012 International Conference on Measurement, Information and Control, MIC 2012, May 18, 2012 - May 20, 2012;
Publisher: IEEE Computer Society
Author affiliation: (1) Shaanxi Key Laboratory of Oil-Drilling Rigs Controlling Technique, Xi'an Shiyou University, Xi'an 710065, China
Abstract: The function of the servo platform is to control the borehole's deviation and orientation by using an automatic control method to drive the platform suspending at a special angle. However, it is not an easy job to control this cylindrical and rotating platform at a particular angle under the complex downhole environment. The key to solve this problem is to establish a suitable nonlinear model. Based on the structure analysis of the platform, a general law of dynamics equation is obtained by analyzing friction, drilling fluid shock, eccentric action, etc. A hydraulic driving torque test has been done, which indicates that the dynamics analysis is reasonable. The model lies the foundation for the research of platform's control method and the improvement of mechanical design. © 2012 IEEE. (11 refs)
Main heading: Drilling fluids
Controlled terms: Automation - Dynamics - Process control - Nonlinear analysis
Uncontrolled terms: Dynamics analysis - Dynamics equation - Mechanical design - Non-linear dynamics model - Rotating platform - Servo platforms - Structure analysis - Torque analysis
Classification Code: 731 Automatic Control Principles and Applications
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

157. Coated and tapered fiber transmission characteristics based on temperature variation

Fu, Haiwei (1); Xu, Shichao (1); Qiao, Xueguang (1, 2); Liu, Yinggang (1); Zhou, Hong (1); Luo, Mingshi (3); Qiu, Shuwei (1)
Source: *Zhongguo Jiguang/Chinese Journal of Lasers*, v 39, n 3, March 2012; **Language:** Chinese; **ISSN:** 02587025; **DOI:** 10.3788/CJL201239.0305001; **Article number:** 0305001; **Publisher:** Science Press
Author affiliation: (1) Key Laboratory of Photoelectric Gas and Oil Logging and Detecting of Ministry of Education, Xi'an Shiyou University, Xi'an, Shaanxi 710065, China (2) Department of Physics, Northwest University, Xi'an, Shaanxi 710069, China (3) School of Computer Science, Xi'an Shiyou University, Xi'an, Shaanxi 710065, China
Abstract: Based on the basic principles of tapered optic fiber transmission, this paper primarily analyzes the transmission characteristics of fused tapered optic fiber which is coated with refractive index-matching fluid versus the index-matching liquids' temperature variations. The transmission loss curves of computer simulation and experiment are very close in tendency. The results show the relationship between the transmission characteristics of tapered optic fiber and the temperature changes. With the temperature increment of outside ambient, the refractive index of index-matching liquids declines. Based on this, the ratio of the optical power carried by the tapered fiber to the total optical power increases. As a result, transmission loss is reduced. Based on the transmission characteristics of this optical device, a temperature-controlled short-pass filter is proposed, the cut-off wavelength of this filter becomes longer with the temperature increased. The rejection efficiency can be above 35 dB and the temperature coefficient of this filter is 40 nm/°C. (13 refs)
Main heading: Temperature distribution
Controlled terms: Refractive index - Wave transmission - Fibers
Uncontrolled terms: Optic fiber - Optic-fiber transmissions - Refractive index matching - Rejection efficiency - Temperature coefficient - Temperature increment - Temperature variation - Transmission characteristics
Classification Code: 641.1 Thermodynamics - 741.1 Light/Optics
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

158. Study on the combination of multilayer piezoelectric seismometer

Xing, Yamin (1); Liu, Shenghu (2)
Source: *Advanced Materials Research*, v 503-504, p 1108-1111, 2012, *Frontiers of Manufacturing Science and Measuring Technology II*; **ISSN:** 10226680; **ISBN-13:** 9783037854044; **DOI:** 10.4028/www.scientific.net/

AMR.503-504.1108; **Conference:** 2012 2nd International Conference on Frontiers of Manufacturing Science and Measuring Technology, ICFMM 2012, June 12, 2012 - June 13, 2012; **Sponsor:** Control Engineering and Information Science Research Association; Int. Front. Sci. Technol. Res. Assoc.; Trans Tech Publications; Chin-Yi University of Technology; **Publisher:** Trans Tech Publications
Author affiliation: (1) Quality Supervision and Inspection Center of Oil Industry Instruments, CNPC, Xi'an Shiyou University, Xi'an, Shannxi, 710065, China (2) Key Laboratory of Photoelectric Logging and Detecting of Oil and Gas, Ministry of Education, Xi'an Shiyou University, Xian, Shannxi, 710065, China
Abstract: The key problem on seismic exploration is how to improve accuracy and resolution, A kind of multilayer piezoelectricity acceleration geophone is studied and discussed. carried on its amplitude frequency, phase-frequency characteristic theoretically, obtained the primary factor of the influence on frequency response, and improved in the piezoelectric crystal choice and geophone structure. The theory and the field test result indicated that, this piezoelectricity acceleration geophone has advantages over conventional geophones in frequency spectrum, resolution and high-frequency response, it is one better detection method, and the upgrade product of traditional geophone. © (2012) Trans Tech Publications. (9 refs)
Main heading: Piezoelectricity
Controlled terms: Crystal structure - Frequency response - Multilayers - Crystallography - Seismology - Piezoelectric devices
Uncontrolled terms: Amplitude frequency - Detection methods - Field test - Frequency spectra - High frequency response - Phase-frequency characteristics - Piezoelectric crystals - Primary factors - Seismic exploration - Sensitivity
Classification Code: 484.1 Earthquake Measurements and Analysis - 701.1 Electricity: Basic Concepts and Phenomena - 933.1 Crystalline Solids - 933.1.1 Crystal Lattice
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

159. Design and research on piezoelectric acceleration geophone

Xing, Yamin (1); Liu, Shenghu (2); Wang, Dongxu (1)
Source: *Advanced Materials Research*, v 468-471, p 826-830, 2012, *Automation Equipment and Systems*; **ISSN:** 10226680; **DOI:** 10.4028/www.scientific.net/AMR.468-471.826; **Conference:** 3rd international Conference on Manufacturing Science and Engineering, ICMSE 2012, March 27, 2012 - March 29, 2012; **Sponsor:** Fujian University of Technology; Xiamen University; Fuzhou University; Huaqiao University; University of Wollongong; **Publisher:** Trans Tech Publications
Author affiliation: (1) Quality Supervision and Inspection Center of Oil Industry Instruments, CNPC, Xi'an Shiyou University, Xi'an, Shannxi, 710065, China (2) Key Laboratory of photoelectric logging and detecting of oil and gas, Ministry of Education, Xi'an Shiyou University, Xian, Shannxi, 710065, China
Abstract: A kind of piezoelectricity acceleration geophone is studied and discussed. carried on its amplitude frequency, phase-frequency characteristic theoretically, obtained the primary factor of the influence on frequency response, and improved in the piezoelectric crystal choice and geophone structure. The theory and the field test result indicated that, this piezoelectricity acceleration geophone has better response characteristic on low frequency and the high-frequency as well as a higher sensitivity, it is one better detection method. © (2012) Trans Tech Publications. (8 refs)
Main heading: Piezoelectricity
Controlled terms: Frequency response - Crystal structure - Piezoelectric devices - Crystallography
Uncontrolled terms: Amplitude frequency - Detection methods - Field test - Geophone - High frequency HF - High resolution - Low frequency - Phase-frequency characteristics - Piezoelectric crystals - Primary factors - Response characteristic - Sensitivity
Classification Code: 701.1 Electricity: Basic Concepts and Phenomena - 933.1 Crystalline Solids - 933.1.1 Crystal Lattice
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

160. A robust broadband beam forming method of constant beam width

Gan, Tian (1); Wang, Yingmin (2)
Source: *Shengxue Xuebao/Acta Acustica*, v 37, n 1, p 18-24, January 2012; **Language:** Chinese; **ISSN:** 03710025; **Publisher:** Science Press
Author affiliation: (1) School of Electronic Engineering, Xi'an ShiYou University, Xi'an 710072, China (2) College of Marine, Northwestern Polytechnical University, Xi'an 710072, China

Abstract: Because of the signal information error of direction, the robustness of the broadband focusing transform beamforming methods deteriorates. To overcome the shortcoming, a robust broadband beam forming method based on the focusing transform approach was presented. To achieve a constant beamwidth for acoustic detection, the proposed method mainly applies the idea of second-order cone programming. The beam forming methods can get more exact weights and then reduce the focused data error. Thus it can improve the robustness performance of the focused beamformer. The beam forming on the circular sensor array is optimized by the computer and demonstrated in the experiment. The experimental results show that the method has a good tolerance to the signal message error and we can achieve a constant beam width beam pattern. So it can be applied to real sonar detection. And it has higher robustness than the traditional second-order cone method of constant beam width. (13 refs)
Main heading: Errors
Controlled terms: Sonar - Beamforming - Second-order cone programming
Uncontrolled terms: Acoustic detection - Beamforming methods - Broadband beams - Constant beamwidth - Second order cone - Second-order cone programming - Signal information - Sonar detection
Classification Code: 711.2 Electromagnetic Waves in Relation to Various Structures - 752.1 Acoustic Devices - 921.5 Optimization Techniques
Database: Compendex
Data Provider: Engineering Village
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161. Analysis on basic conditions and main control factors of accumulation in eastern area of Yishan Slope of Ordos Basin

Shi, Baohong (1); Wang, Juan (1); Zhang, Yan (2)
Source: *Advanced Materials Research*, v 524-527, p 10-15, 2012, *Natural Resources and Sustainable Development II*; **ISSN:** 10226680; **ISBN-13:** 9783037854174; **DOI:** 10.4028/www.scientific.net/AMR.524-527.10; **Conference:** 1st International Conference on Energy and Environmental Protection, ICEEP 2012, June 23, 2012 - June 24, 2012; **Publisher:** Trans Tech Publications
Author affiliation: (1) Xi'an Shiyou University, Xi'an, 710065, Shaanxi, China (2) Changqing Oil and Gas Branch Company, 710021, Shaanxi, China
Abstract: The group of reservoir and cap-rock in Chang4+5 and Chang6 has good basic conditions of accumulation in eastern area of Yishan Slope of Ordos Basin, because it located up the high quality sources rocks (Chang7) and had a lot of hydrocarbon migrated from western areas. The reservoirs were the sand bodies formed in the distributary channels of delta plain and subaqueous distributary channels of delta front. The cap-rocks were the mudstones and compacted siltites formed in the floodplain and interdistributary areas. They composed lithologic traps. The types of petroleum reservoirs belong to lithologic hydrocarbon reservoir. The distribution of oil layers controlled by depositional microfacies and the excellent quality group of reservoir and cap-rock and migration conditions. © (2012) Trans Tech Publications. (14 refs)
Main heading: Hydrocarbons
Controlled terms: Petroleum reservoirs - Petroleum reservoir engineering - Metamorphic rocks - Sustainable development - Quality control - Reservoirs (water)
Uncontrolled terms: Conditions of accumulation - Main control factor - Ordos Basin - Yanchang Formation - Yishan Slope
Classification Code: 441.2 Reservoirs - 512.1.1 Oil Fields - 512.1.2 Petroleum Deposits : Development Operations - 804.1 Organic Compounds - 913.3 Quality Assurance and Control
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

162. A vein based biometric experiment and some new developments

Wu, Wenhai (1); Lu, Feiyuan (2); Cheng, Guojian (2); Shi, Caiyun (2)
Source: *Proceedings - 2012 3rd Global Congress on Intelligent Systems, GCIS 2012*, p 131-135, 2012, *Proceedings - 2012 3rd Global Congress on Intelligent Systems, GCIS 2012*; **ISBN-13:** 9780769548609; **DOI:** 10.1109/GCIS.2012.74; **Article number:** 6449501; **Conference:** 2012 3rd Global Congress on Intelligent Systems, GCIS 2012, November 6, 2012 - November 8, 2012; **Sponsor:** Wuhan University of Technology; **Publisher:** IEEE Computer Society
Author affiliation: (1) Xi'an Electric Power College, Xi'an 710032, China (2) School of Computer Science, Xi'an Shiyou University, Xi'an 710065, China
Abstract: The pattern of blood veins is unique, even in identical twins. The human palms have a broad and complicated vascular pattern and thus contain many kinds of features. The Vein Based Biometric (VBB) depends

on measurement of the vascular pattern made by the blood vessels on the back of the hand. The VBB technology is the world's leading and most promising biometric technology and can bring security and convenience to people in many areas. This paper firstly reviews the concepts and types of biometrics; then discusses VBB and vein image processing. According to the study of existing algorithms and techniques, a hand vein image segmentation and refinement algorithm is introduced in this section, a normalized image of the hand veins is processed by the Gaussian filtering and median filtering, in order to remove certain amount of speckle noise. By using local dynamic threshold segmentation NiBlack algorithm, a coarse vein image is produced. An image of veins lines with smaller distortion is obtained by refinement algorithm. It is also show some experimental results of VBB. The last section of this paper is about some new developments of biometrics. © 2012 IEEE. (10 refs)
Main heading: Image segmentation
Controlled terms: Median filters - Biometrics - Blood vessels
Uncontrolled terms: Biometric technology - Gaussian filtering - Median filtering - Multi-modal biometrics - Normalized image - Refinement algorithms - Vascular patterns - Vein recognition
Classification Code: 461 Bioengineering and Biology - 461.2 Biological Materials and Tissue Engineering - 703.2 Electric Filters - 716.1 Information Theory and Signal Processing
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

163. Optimize oil field simulation measures through multi-factor comprehensive evaluation method based on fuzzy mathematics and grey correlation

Liu, Zhikun (1); Li, Qi (1); Zhang, Shaoxiang (2)
Source: *Advanced Materials Research*, v 524-527, p 1503-1506, 2012, *Natural Resources and Sustainable Development II*; **ISSN:** 10226680; **ISBN-13:** 9783037854174; **DOI:** 10.4028/www.scientific.net/AMR.524-527.1503; **Conference:** 1st International Conference on Energy and Environmental Protection, ICEEP 2012, June 23, 2012 - June 24, 2012; **Publisher:** Trans Tech Publications
Author affiliation: (1) Institute of Petroleum Engineering, Xi'an Shiyou University, Shannxi Xi'an 710065, China (2) CNPC International (Turkmenistan), Beijing 100101, China
Abstract: This paper adopts the multi-factor comprehensive evaluation method combining fuzzy mathematics and gray relational analysis to conduct oil field stimulation measures optimization. It overcomes the one-sidedness of the man-made assignment through the replacing correlation of ray correlation analysis with weight set of fuzzy comprehensive evaluation. The paper first analyzed the factors that affect the oil field stimulation measures, and then created a multi-factor comprehensive evaluation theoretical model, finally based on the instance to evaluate the model. The results show that the method is feasible and has high application value. © (2012) Trans Tech Publications. (6 refs)
Main heading: Factor analysis
Controlled terms: Oil well flooding
Uncontrolled terms: Comprehensive evaluation - Correlation analysis - Field simulation - Fuzzy comprehensive evaluation - Fuzzy mathematics - Gray relational analysis - Grey correlation - High application value - Multi-factor - Stimulation measure - Theoretical models - Weight set
Classification Code: 511.1 Oil Field Production Operations - 922.2 Mathematical Statistics
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

164. Photocatalytic H2 evolution under visible-light irradiation on modified TiO2 catalysts

Liang, Huirong (1, 2); Guo, Liejin (2)
Source: *Advanced Materials Research*, v 512-515, p 1426-1431, 2012, *Renewable and Sustainable Energy II*; **ISSN:** 10226680; **ISBN-13:** 9783037854143; **DOI:** 10.4028/www.scientific.net/AMR.512-515.1426; **Conference:** 1st International Conference on Energy and Environmental Protection, ICEEP 2012, June 23, 2012 - June 24, 2012; **Publisher:** Trans Tech Publications
Author affiliation: (1) Xi'an Shiyou University, Xi'an, China (2) State Key Laboratory of Multiphase Flow in Power Engineering, Xi'an Jiaotong University, Xi'an, China
Abstract: This TiO2 catalyst is modified by two means of doping and dye-sensitization to decompose the water into hydrogen under visible light irradiation in this paper. By exploring the mechanisms of the modification with two ways, it is found that the modification can make TiO2 semiconductor with only UV photocatalytic activity become a catalyst with the visible-light activity. The experiments demonstrate that quantum efficiency and energy conversion efficiency of the doped catalyst is respectively 1.5% and 0.5%, and that of the sensitized catalyst is respectively 2.13% and 0.89%. By

comparison the doped TiO2 catalysts have better prospect in the application because of the instability of the sensitized catalyst. © (2012) Trans Tech Publications, Switzerland. (32 refs)
Main heading: Titanium dioxide
Controlled terms: Catalyst activity - Semiconductor doping - Photocatalysts - Irradiation - Magnetic semiconductors - Energy conversion efficiency - Light
Uncontrolled terms: Doped-TiO - Dye sensitization - Hydrogen evolution - Photo-catalytic - Photocatalytic activities - TiO - Visible-light activity - Visible-light irradiation
Classification Code: 525.2 Energy Conservation - 525.5 Energy Conversion Issues - 708.4 Magnetic Materials - 712.1 Semiconducting Materials - 741.1 Light/Optics - 803 Chemical Agents and Basic Industrial Chemicals - 804 Chemical Products Generally - 804.2 Inorganic Compounds
Database: Compendex
Data Provider: Engineering Village
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165. Experimental research on characteristic of particles transportation in low-permeability gas reservoirs

He, Zhiwu (1); Yang, Quanan (1); Liu, Yifei (2)
Source: *Advanced Materials Research*, v 402, p 693-697, 2012, *Advances in Metallurgical and Mining Engineering*; **ISSN:** 10226680; **ISBN-13:** 9783037853108; **DOI:** 10.4028/www.scientific.net/AMR.402.693; **Conference:** 2011 International Conference on Chemical, Material and Metallurgical Engineering, ICCMME 2011, December 23, 2011 - December 25, 2011; **Sponsor:** Guangxi University; Wuhan University of Science and Technology; Queensland University of Technology; **Publisher:** Trans Tech Publications
Author affiliation: (1) Oil and Gas Technology Research Institute, PetroChina Changqing Oilfield Company, 710021, China (2) Xi'an Shiyou University, 710065, China
Abstract: Characteristics and reasons of particles migration in low-permeability gas reservoirs are studied in this paper based on indoor experiments. In order to control the migration of clays, applying effect of two clays stabilizing agents compared and analyzed. The results show that particles transportation and blockage is a serious damage fact of which producing pressure differential is the main reason in low-permeability gas reservoirs. Stabilizing agents can effectively control the expansion and diffusion of clays, but the effect on fine silt is limited. (4 refs)
Main heading: Gas permeability
Controlled terms: Petroleum reservoir engineering - Low permeability reservoirs
Uncontrolled terms: Experimental research - Fine silt - Formation damage - Indoor experiment - Low-permeability gas reservoir - Pressure differential - Stabilizing agents
Classification Code: 512.1 Petroleum Deposits - 512.1.2 Petroleum Deposits : Development Operations - 931.2 Physical Properties of Gases, Liquids and Solids
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

166. Research on carbon dioxide corrosion of cement stones of oil well casings under high temperature and high pressure

Wang, Ping (1); Qu, Zhan (1); Zhang, Jian Bing (1)
Source: *Advanced Materials Research*, v 413, p 24-28, 2012, *Materials Science and Engineering Application II*; **ISSN:** 10226680; **ISBN-13:** 9783037853214; **DOI:** 10.4028/www.scientific.net/AMR.413.24; **Conference:** 2nd International Conference on Materials Science and Engineering Application, ICMSEA 2012, January 7, 2012 - January 8, 2012; **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Mechanical Engineering, Xi'An Shiyou University, No.18, 2nd East Dianzi Road, Xi'an, Shanxi, 710065, China
Abstract: The effect of CO2 on seal capacity of cement mantle causes casing corrosion and reduces the life of oil well. The corrosion proof of cement system is studied to improve the integrity and seal properties of the cement stone under acidic medium. The CO2 corrosion test of 5 blocks cement under high temperature and high pressure was conducted. Compressive strength, permeability and corrosion depth were measured and morphology after corrosion was observed by scanning electron microscope. A density cement slurry formulations was selected by analyzing the experimental data. It not only has excellent corrosion resistance, but also has properties of anti-gas breakthrough, reduction of free water and stability. It can meet cementing requirement of different well depth conditions. (11 refs)
Main heading: Cements
Controlled terms: Scanning electron microscopy - Oil well cementing - Carbon dioxide - Compressive strength - High temperature corrosion - High pressure effects - High pressure engineering - Corrosion resistance - Oil well flooding

Uncontrolled terms: A-density - Acidic mediums - Carbon dioxide corrosion - Cement mantle - Cement slurry - Cement stones - Cement system - Corrosion depth - Corrosion tests - Corrosion-proof - Effect of CO - Erosion resistance - Excellent corrosion resistances - Experimental data - Free water - High temperature and high pressure - Oil well cement - Scanning Electron Microscope - Seal property - Well depth
Classification Code: 412.1 Cement - 511.1 Oil Field Production Operations - 512.1.2 Petroleum Deposits : Development Operations - 539.1 Metals Corrosion - 804.2 Inorganic Compounds
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

167. Displacement characteristics and influencing factors in deep section high pressure and low-permeability sandstone reservoir

Wang, Rui-Fei (1); Lü, Xin-Hua (2); Guo, Dian-Bin (2)
Source: *Zhongnan Daxue Xuebao (Ziran Kexue Ban)/Journal of Central South University (Science and Technology)*, v 43, n 3, p 1072-1079, March 2012; **Language:** Chinese; **ISSN:** 16727207; **Publisher:** Central South University of Technology
Author affiliation: (1) College of Petroleum Engineering, Xi'an Shiyou University, Xi'an 710065, China (2) Zhongyuan Oilfield Company, SINOPEC, Puyang 457001, China
Abstract: The displacement characteristics and influencing factors of deep section high pressure and low-permeability sandstone reservoir in Dongpu Sag were analyzed with the water and N2 flooding experiment. The result shows that the better the permeability, the wider the two-phase region, and the better the displacement effect. The distribution of the two-phase point of intersection is relatively focused in water flooding experiment, and the distribution of relative permeability curves of gas phase is relatively emanative. The effect of gas flooding in ultra-low permeability reservoir is better, while that of water flooding is better in low permeability reservoir. The factors that affect displacement characteristics mainly include displacement rate, effective overburden pressure, start-up pressure gradient of two phases, and reservoir properties. There is a prime displacement rate in ultra-low permeability reservoir. The effective overburden pressure should be minimal in displacement. The oil displacement efficiency can not be largely improved. The differences of displacement characteristics between N2 flooding and water flooding lie in the differences of mobility ratio, wettability, micro-pore structure and the seepage law. (25 refs)
Main heading: Pressure gradient
Controlled terms: Pore structure - Reservoirs (water) - Sandstone - Floods - Oil well flooding - Gas permeability - Efficiency - Low permeability reservoirs - Petroleum reservoir engineering
Uncontrolled terms: Deep section high pressure and low-permeability sandstone reservoirs - Displacement characteristic - Micro-pore structures - Oil-displacement efficiency - Start-up pressure gradient of two phasis
Classification Code: 441.2 Reservoirs - 482.2 Minerals - 511.1 Oil Field Production Operations - 512.1 Petroleum Deposits - 512.1.2 Petroleum Deposits : Development Operations - 913.1 Production Engineering - 931.2 Physical Properties of Gases, Liquids and Solids - 944.4 Pressure Measurements
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

168. The influence of microstructures on the corrosion properties of X80 pipeline steel in near-neutral pH soil

Luo, Jinheng (1); Xu, Congmin (2)
Source: *Advanced Materials Research*, v 476-478, p 212-217, 2012, *New Materials and Processes*; **ISSN:** 10226680; **ISBN-13:** 9783037853719; **DOI:** 10.4028/www.scientific.net/AMR.476-478.212; **Conference:** 3rd International Conference on Manufacturing Science and Engineering, ICMSE 2012, March 27, 2012 - March 29, 2012; **Sponsor:** Fujian University of Technology; Xiamen University; Fuzhou University; Huaqiao University; University of Wollongong; **Publisher:** Trans Tech Publications
Author affiliation: (1) CNPC, Tubular Goods Research Institute, Xi'an 710065, China (2) School of Materials Science and Engineering, Xi'an Shiyou University, Xi'an 710065, China
Abstract: The influence of microstructures with different heat treatments on corrosion properties of X80 pipeline steel was investigated in near-neutral pH soil using electrochemical measurement and surface analysis(SEM, EDS and XRD). The results showed that the microstructure of X80 steel affected the properties of corrosion product layers. Generally, X80 steels with heat treatments had a higher corrosion rate than the as-received steel. The increase of pearlite content enhanced the corrosion of ferrite through a galvanic effect. The appearance of upper bainite and martenite increased further the activity of the steel. The corrosion product layer formed on as-received X80 steel was compact and complete, provided an effective protection to the underneath steel. However, the corrosion product

layers on the heat-treated X80 steels were generally inhomogeneous, loose, porous and defective, and provided minor protectiveness. The cathodic/anodic reactions of X80 steel are dominated by the oxygen reduction and formation of iron oxides that deposit on the steel surface which was through a physical block effect to afford the protection. © (2012) Trans Tech Publications. (16 refs)
Main heading: Microstructure
Controlled terms: Pipeline corrosion - Corrosion protection - Iron oxides - Soils - Surface analysis - Heat treatment - Steel pipe - Electrolytic reduction - Pipelines - Corrosion rate - Corrosive effects - Steel corrosion - Underground corrosion
Uncontrolled terms: Block effects - Corrosion products - Corrosion property - Electrochemical measurements - Galvanic effect - Near-neutral pH - Oxygen Reduction - Steel surface - Upper bainite - X-80 pipeline - X80 steel - XRD
Classification Code: 483.1 Soils and Soil Mechanics - 533.1 Ore Treatment - 537.1 Heat Treatment Processes - 539.1 Metals Corrosion - 539.2 Corrosion Protection - 545.3 Steel - 619.1 Pipe, Piping and Pipelines - 802.2 Chemical Reactions - 804.2 Inorganic Compounds - 951 Materials Science
Database: Compendex
Data Provider: Engineering Village
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169. Effect of volume fraction of bainite on microstructure and mechanical properties of X80 pipeline steel with excellent deformability

Zhang, Xiaoyong (1); Gao, Huilin (1); Zhang, Xueqin (2); Yang, Yan (1)
Source: *Materials Science and Engineering A*, v 531, p 84-90, 01 January 2012; **ISSN:** 09215093; **DOI:** 10.1016/j.msea.2011.10.035; **Publisher:** Elsevier Ltd
Author affiliation: (1) School of Materials Science and Engineering, Xi'an Shiyou University, Xi'an 710065, China (2) CNPC Tubular Goods Research Institute, Xi'an 710065, China
Abstract: Pipeline steel with excellent deformability and dual-phase microstructure consisting of ferrite and bainite was obtained by inter-critical accelerated cooling. Dual-phase microstructure was adopted to obtain high deformation capacity, enabling the prevention of structural failure during geological disasters such as landslides and earthquakes. The effect of the volume fraction of bainite on the mechanical properties of the dual-phase pipeline steel was investigated by microscopic analysis and testing of mechanical properties. Results indicate that both the yield strength and ultimate tensile strength of the steel increases almost linearly with the increasing volume fraction of bainite, whilst ductility, work hardening exponent, and impact absorption energy decrease. At a 50% volume fraction of bainite, the yield strength, yield strength/tensile strength ratio (Y/. T), work hardening exponent, uniform elongation, and impact absorption energy of X80 dual-phase pipeline steel are 665. MPa, 0.8, 0.12, 8%, and 245. J, respectively. At this stage, the microstructure of the dual-phase pipeline steel consists mainly of small bainitic ferrite, supplemented by small polygonal ferrite with high-density dislocation. This dual-phase microstructure endows the pipeline steel with excellent strength and toughness, as well as good deformation characteristics. © 2011 Elsevier B.V. (18 refs)
Main heading: Microstructure
Controlled terms: Ferrite - Steel testing - Tensile strength - Pipelines - Strain hardening - Volume fraction - Yield stress - Deformation - Steel pipe - Bainite - Disaster prevention - Fracture mechanics - Tensile testing
Uncontrolled terms: Deformation Characteristics - Dual phase microstructure - Microscopic analysis - Microstructure and mechanical properties - Pipeline steel - Strength and toughness - Ultimate tensile strength - Work hardening exponent
Classification Code: 531.2 Metallography - 537.1 Heat Treatment Processes - 545.3 Steel - 619.1 Pipe, Piping and Pipelines - 641.1 Thermodynamics - 914.1 Accidents and Accident Prevention - 931.1 Mechanics - 951 Materials Science
Funding Details: Number: 50874090, Acronym: NSFC, Sponsor: National Natural Science Foundation of China;
Funding text: The authors acknowledge the support of the National Natural Science Foundation of China (No. 50874090) and Materials Processing Engineering key subject of Shaanxi province at the Xi'an Shiyou University .
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

170. 3D-FE simulation of inhomogeneous stress and strain distributions in cold profiled ring rolling process under different hardening coefficients

Li, Lanyun (1); Li, Xiao (1); He, Zhi (1)
Source: *International Journal of Materials and Product Technology*, v 44, n 1-2, p 47-66, July 2012; **ISSN:** 02681900; **DOI:** 10.1504/IJMPT.2012.048192; **Publisher:** Inderscience Publishers

Author affiliation: (1) Key Laboratory of Materials Processing Engineering, School of Material Science and Engineering, Xi'An Shiyou University, Xi'an, 710065, China
Abstract: Cold profiled ring rolling is an advanced continuous local metal forming technology widely used for manufacturing various seamless complex-section rings. Investigating the stress and strain distributions (SSD) is very significant for rapidly predicting the defects and improving the quality of deformed rings. The non-uniform SSD in T-shaped cold ring rolling with different hardening exponents are investigated based on 3D-FE simulation. The results show: despite the difference in hardening exponent, the compressive effect of stress is larger near the outer-surface and decreases toward the core; it increases from the core to contact inner-surface but decreases from the core to the non-contact inner surface the deformation around the groove fillet is larger and more non-uniform the surface layer of the filling part near the fillet deforms a little smaller but still non-uniformly, the tensile principal stress components increases and the hydrostatic stress is positive, resulting in poor plasticity. Copyright © 2012 Inderscience Enterprises Ltd. (16 refs)
Main heading: Finite element method
Controlled terms: Hardening - Strain - Stresses - Cold rolling
Uncontrolled terms: 3D FE simulation - Cold profiled ring rollings - Cold ring rolling - Forming technology - Hardening coefficient - Hardening exponent - Hydrostatic stress - Stress and strain distribution
Classification Code: 535.1.2 Rolling Mill Practice - 537.1 Heat Treatment Processes - 921.6 Numerical Methods - 951 Materials Science
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

171. P2P-oriented manufacturing resource modeling and sharing system for virtual enterprises

Wang, Xue-Long (1, 2); Zhang, Jing (1)
Source: *International Journal of Digital Content Technology and its Applications*, v 6, n 22, p 666-675, 2012; **ISSN:** 19759339, **E-ISSN:** 22339310; **DOI:** 10.4156/jdcta.vol6.issue22.76; **Publisher:** Advanced Institute of Convergence Information Technology
Author affiliation: (1) School of Computer Science and Engineering, Xi'an University of Technology, China (2) School of Computer Science, Xi'an Shiyou University, China
Abstract: Aimed at a large number of manufacturing resources sharing demand in virtual enterprises, the existing classification and modeling methods of manufacturing resources are analyzed. A classification method based on the form of resources existence is provided. The graphic and formalism of manufacturing resources are described. Moreover, taking the document resources as an example, a P2P sharing system prototype is realized based on the JXTA. Experiment results show that the P2P overlay has fewer construction cost and better scalability. And the model and the prototype system can solve the issues which are lack of the whole description and practicality of the existing model. (9 refs)
Main heading: Virtual corporation
Controlled terms: Peer to peer networks - Distributed computer systems - Manufacture
Uncontrolled terms: Classification methods - Construction costs - Manufacturing resource - Peer to peer - Prototype system - Sharing - Sharing systems - Virtual enterprise
Classification Code: 537.1 Heat Treatment Processes - 722 Computer Systems and Equipment - 722.4 Digital Computers and Systems - 912.2 Management - 913.4 Manufacturing
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

172. Flicking light design for stage lighting with HPS lamp

Cheng, Weibin (1); Zissis, Georges (2)
Source: *Conference Record - IAS Annual Meeting (IEEE Industry Applications Society)*, 2012, *2012 IEEE Industry Applications Society Annual Meeting, IAS 2012*; **ISSN:** 01972618; **ISBN-13:** 9781467303309; **DOI:** 10.1109/IAS.2012.6374053; **Article number:** 6374053; **Conference:** 2012 IEEE Industry Applications Society Annual Meeting, IAS 2012, October 7, 2012 - October 11, 2012; **Publisher:** Institute of Electrical and Electronics Engineers Inc.
Author affiliation: (1) Xi'an Shiyou University, 18 Dianzi erlu, Xi'an, 710065, China (2) CNRS, LAPLACE, 118 Route de Narbonne, 31062, Toulouse, France
Abstract: Stage lighting with high intensity discharge lamp is always regarded as an important method to present artistic scenery, stage lighting changed with rhythm and/or theatricality and/or voice would bring about more visual convulsion to the audiences. A novel flicking idea for stage lighting is proposed in this paper, the operation principle

for light flicking with high pressure sodium lamp is analyzed, the flicking power is deduced, the design diagram and its basic functions are discussed in detail, with these basic functions combined, many dream effects can be gotten, a sample is also made for experiment test, and the local test shows that many combined effects can be realized with remote program to make the stage more splendid and evoke the audience's feelings, it is really a new selection for design of stage lighting. © 2012 IEEE. (16 refs)
Main heading: Pulse width modulation
Controlled terms: High pressure effects - Sodium - Software testing - Voltage control
Uncontrolled terms: Basic functions - Combined effect - Design diagrams - Experiment tests - High intensity discharge lamps - High pressure sodium lamps - Lighting controls - Stage lighting
Classification Code: 549.1 Alkali Metals - 723.5 Computer Applications - 731.3 Specific Variables Control
Database: Compendex
Data Provider: Engineering Village
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173. Research on the grid-based production management system for digital oil field

Xian-Wei, Zhang (1, 2); Jing, Zhang (1)
Source: *International Journal of Digital Content Technology and its Applications*, v 6, n 8, p 80-88, May 2012; **ISSN:** 19759339, **E-ISSN:** 22339310; **DOI:** 10.4156/jdcta.vol6.issue8.10; **Publisher:** Advanced Institute of Convergence Information Technology
Author affiliation: (1) School of Computer Science and Engineering, Xi'an University of Technology, China (2) School of Petroleum Resources, Xi'an Shiyou University, China
Abstract: With the development of Internet and information technology, many petroleum data management providers begin to research and develop their own data management platform in succession. Yet few of them pay much attention on the integrating of several services like automatically charging, resource description and searching, load balancing, which hinder the further application of data sharing and application. To overcome this shortcoming, Grid-based Production Management System for Digital Oil field is proposed and the architecture, components and workflow are described in detail. finally the classical application of data grid in digital oil field are proposed, which validate the validity of the system described in the paper. (12 refs)
Main heading: Oil well flooding
Controlled terms: Search engines - Grid computing - Research and development management - Workflow management
Uncontrolled terms: Data Grid - Digital oil field - Grid-based - Management platforms - Production management systems - Resource description
Classification Code: 511.1 Oil Field Production Operations - 722.4 Digital Computers and Systems - 723 Computer Software, Data Handling and Applications - 901.3 Engineering Research - 912.2 Management
Database: Compendex
Data Provider: Engineering Village
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174. Fatigue crack propagation behaviour of steels with different microstructures

Xu, Tianhan (1); Feng, Yaorong (2); Song, Shengyin (2); Wang, Danghui (1)
Source: *Materials Science and Engineering A*, v 551, p 110-115, August 15, 2012; **ISSN:** 09215093; **DOI:** 10.1016/j.msea.2012.04.103; **Publisher:** Elsevier Ltd
Author affiliation: (1) School of Materials Science and Engineering, Xi'an Shiyou University, Xi'an 710065, China (2) Tubular Goods Research Centre of CNPC, Xi'an 710065, China
Abstract: The fatigue crack propagation behaviour of steels with different microstructures was investigated. The results show that the Paris constant m values of the different steel microstructures have a linear relationship with the yield strengths for the same or approximate material composition, and that the ratio of the fatigue crack propagation threshold value to fracture toughness (#Kth0/Kc) has a linear relationship with both the m values and the yield strengths. The crack propagation rates at the Paris regime were governed by the yield strengths, whereas the crack propagation paths at the threshold regime were governed by the microstructures. © 2012 Elsevier B.V. (30 refs)
Main heading: Microstructure
Controlled terms: Fracture toughness - Fatigue crack propagation - Yield stress
Uncontrolled terms: Casing drilling steels - Crack propagation path - Crack propagation rate - Linear relationships - Material compositions - Paris constant m - Steel microstructure - Threshold-value
Classification Code: 951 Materials Science
Funding Details: Number: 2006AA06A107, Acronym: -, Sponsor: -; Number: 2008A-3005, Acronym: CNPC, Sponsor: China National Petroleum Corporation;

Funding text: This study was supported by the State 863 Project (Grant No. 2006AA06A107), the Fundamental Research Subject of the Key Laboratory of China National Petroleum Corporation (CNPC, Grant No. 2008A-3005), and the Materials Process Engineering Key Subject of Xi'an Shiyou University (Grant No. YS32030203). The authors would like to thank CNPC for the financial and technical support as well as for their kind permission to publish this work.
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

175. Research on excellent engineer of chemical machinery cultivating system

Chen, Bing (1); Meng, Xiaomei (2); Fan, Yuguang (1)
Source: *Advanced Materials Research*, v 391-392, p 1431-1434, 2012, *Chemical Engineering and Material Properties*; **ISSN:** 10226680; **ISBN-13:** 9783037853337; **DOI:** 10.4028/www.scientific.net/AMR.391-392.1431; **Conference:** 2011 International Symposium on Chemical Engineering and Material Properties, ISCEMP 2011, November 4, 2011 - November 6, 2011; **Sponsor:** Shenyang University of Technology; Harbin University of Science and Technology; **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Mechanical Engineering, Xi'an Shiyou University, Xi'an, 710065, China (2) Xi'an High-tech Research Institute, Xi'an, 710025, China
Abstract: The research and formulation of chemical machinery excellent engineer cultivation system is an important basic work to realize the plan of cultivating excellent engineer. Take the process equipment and control engineering profession of our university as example, this paper introduces professional status, analyses and discusses cultivation target, opportunity and facing problems of machinery excellent engineer. (5 refs)
Main heading: Engineers
Controlled terms: Engineering research - Professional aspects - Machinery
Uncontrolled terms: Chemical machinery - Control engineering - Excellent engineer cultivation plan - Process equipments
Classification Code: 901.1 Engineering Professional Aspects - 901.3 Engineering Research
Database: Compendex
Data Provider: Engineering Village
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176. Research on digital oilfield resources sharing based on the grid technology

Zhang, Xian-wei (1); Zhang, Jing (2)
Source: *Journal of Convergence Information Technology*, v 7, n 8, p 211-219, May 2012; **ISSN:** 19759320, **E-ISSN:** 22339299; **DOI:** 10.4156/jcit.vol7.issue8.24; **Publisher:** Advanced Institute of Convergence Information Technology
Author affiliation: (1) School of Computer Science and Engineering, Xi'an University of Technology, China (2) School of Petroleum Resources, Xi'an Shiyou University, China
Abstract: With the continuous development of the grid technology, the grid technology applications in all fields are more and more abundant. The digital oilfield resource sharing researched in this paper is based on grid platform, through this platform we can realize dynamic scheduling task, effective coordination and distribution grid resources so as to complete the data resources sharing. This paper proposes the resource sharing problems of digital oilfield enterprises facing, after expounding the latest development of the grid technology, grid system structure and key techniques of the grid. In order to solve the resource sharing problems, we construct the grid resource sharing management system. In addition, we expound the building of the grid resource sharing management model, and the time optimization of tasks execution in scheduling management. From the application we can see that the use of the grid technology can well solve the problem of digital oilfield resources sharing. (13 refs)
Main heading: Scheduling
Controlled terms: Problem solving - Oil well flooding
Uncontrolled terms: Continuous development - Dynamic scheduling - Grid technologies - Latest development - Management Model - Management systems - Resource sharing problem - Resources sharing
Classification Code: 511.1 Oil Field Production Operations - 912.2 Management
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

177. The influence of surfactant concentration on rheology and proppant-carrying capacity of VES fluids

Wang, Zhiguo (1, 2); Wang, Shuzhong (1); Sun, Xiao (1)
Source: *Advanced Materials Research*, v 361-363, p 574-578, 2012, *Natural Resources and Sustainable Development*; **ISSN:** 10226680; **ISBN-13:** 9783037852682; **DOI:** 10.4028/www.scientific.net/AMR.361-363.574; **Conference:** 2011 International Conference on Energy, Environment and Sustainable Development, ICEESD 2011, October 21, 2011 - October 23, 2011; **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Energy and Power Engineering, Xi'An Jiaotong University, Xi'an 710065, China (2) School of Mechanical Engineering, Xi'An Shiyou University, Xi'an 710065, China
Abstract: Polymer-free VES fluids are used to minimize damage to the proppant pack to efficiently transport proppants into fractures. Proper investigation of the rheological properties and the proppant settling of the fluids play an important role in fracturing enginering.In this paper,the rheology and viscosity-temperature properties of the VES fracturing fluid were researched at the range of 1wt% to 6wt% of VES concentration using the HAAKE RS300 Stress-Controlled Rheometer. Proppant settling experiments are performed in static VES fluid. The results show that VES system behaves as a non-Newtonian shear-thinning fluid and the power law model can be used to describe fluid rheology within a certain range of shear rate and temperature. However, with the increase of shear rate and temperature, the fluid trends to Newtonian fluid. Apparant viscocity of the fluid first increases slightly with the temperature rising from 28°C, then, It would drastically reduce after reaching a peak. The temperature correspongding to the peak value increases with the concentration of VES,as well as the shear rates. When VES concentration is 4wt%, the fluid may generates stable micro-mesh wormlike micelle structure, which results in good viscoelasticity and high proppant-carrying capacity. © (2012) Trans Tech Publications, Switzerland. (6 refs)
Main heading: Proppants
Controlled terms: Newtonian liquids - Shear deformation - Viscoelasticity - Shear thinning - Fracturing fluids - Surface active agents - Elasticity - Non Newtonian flow - Rheology
Uncontrolled terms: Fluid rheology - Newtonian fluids - Non-newtonian - Peak values - Power law model - Proppant packs - Proppant-carrying capacity - Proppants - Rheological property - Shear rates - Shear thinning fluids - Surfactant concentrations - Temperature rising - Viscoelastic surfactant-based (VES) fluids - Viscosity-temperature - Worm-like micelles
Classification Code: 511.1 Oil Field Production Operations - 631.1 Fluid Flow, General - 803 Chemical Agents and Basic Industrial Chemicals - 931.1 Mechanics - 931.2 Physical Properties of Gases, Liquids and Solids
Database: Compendex
Data Provider: Engineering Village
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178. Study on predicting rock drillability based on the method of gray theory

Liu, Zhidi (1); Tang, Xiaoyan (2)
Source: *Advanced Materials Research*, v 496, p 423-426, 2012, *Functional Materials and Nanotechnology*; **ISSN:** 10226680; **ISBN-13:** 9783037853931; **DOI:** 10.4028/www.scientific.net/AMR.496.423; **Conference:** 2012 International conference on Function Materials and Nanotechnology, FMN 2012, May 19, 2012 - May 20, 2012; **Sponsor:** Wuhan Institute of Technology; Beijing Material Research Center; International Material Research Society; **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Petroleum Resources, Xi'an Shiyou University, China (2) College of Geology and Environment, Xi'an University of Science and Technology, China
Abstract: The conventional prediction model of rock drillability is based on regression analysis using well logging data. Regression analysis directly uses initial data to establish model, so its precision is not satisfied. By accumulating initial data, gray theory model (GM (0,N)) is able to weaken the random of initial data. Therefore, a practical approach to calculate the rock drillability, which base on GM(0,N) using well logging data, is presented in this paper. Based on the inherent relation of well logging information and rock drillability, a lot of logging parameters are selected closely to rock drillability, and the prediction model of rock drillability are established by GM(0,N). This method is applied to logging data process of Du4 well in SC oil field, the results show that it can improve predicting accuracy of rock drillability, and can easily frame rock drillability profile in some areas. © (2012) Trans Tech Publications, Switzerland. (4 refs)
Main heading: Regression analysis
Controlled terms: Oil fields - Forecasting - Rocks - Well logging
Uncontrolled terms: Gray theories - Logging data - Prediction model - Rock drillability - Well logging data
Classification Code: 512.1.1 Oil Fields - 922.2 Mathematical Statistics
Database: Compendex
Data Provider: Engineering Village
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179. Welding robot applied in delong heavy truck weld line

Dong, Pengmin (1); Chen, Dayan (2); Shang, Genshe (3); Dang, Xiaoli (4); Du, Guoqing (5)
Source: *Applied Mechanics and Materials*, v 229-231, p 2290-2293, 2012, *Mechanical and Electrical Technology IV*; **ISSN:** 16609336, **E-ISSN:** 16627482; **ISBN-13:** 9783037855102; **DOI:** 10.4028/www.scientific.net/AMM.229-231.2290; **Conference:** 4th International Conference on Mechanical and Electrical Technology, ICMET 2012, July 24, 2012 - July 26, 2012; **Sponsor:** Science and Engineering Institute; Universiti Putra Malaysia; **Publisher:** Trans Tech Publications
Author affiliation: (1) Mechanical Engineering, Xi'an ShiYou University, No.18 East Section Second Dianzi Rode, Xi'an 710065, ShanXi, China (2) Shaanxi Automobile Group Co., LTD, Xi'an, Shanxi, China (3) Changqing Oilfield Third Plant, 717500, ShunNing, Shanxi, China (4) Xi'an ShiYou University, Xi'an, Shanxi, China (5) WDEC TuHa Mud Logging and Engineering Company, 838202, Xinjiang, China
Abstract: With the development of manufacturing techniques and the size of the economy, the heavy duty truck market competition is becoming increasingly fierce. Higher requirements on the welding equipment have been forward in the present market environment. Welding robot which has been used in main welding production line of Shanxi Automobile Delong is characterized by good quality of welding seam, high productive efficiency and good flexibility. This paper summarizes useful experience and existing problem of welding robot technology in practical application. © (2012) Trans Tech Publications, Switzerland. (4 refs)
Main heading: Industrial robots
Controlled terms: Robot applications - Trucks - Competition - Seam welding - Commerce - Production efficiency
Uncontrolled terms: Cab - Existing problems - Heavy duty trucks - Heavy truck - Manufacturing techniques - Market competition - Market environment - Programmable logical controller - Weld lines - Welding equipment - Welding production - Welding robots
Classification Code: 538.2.1 Welding Processes - 663.1 Heavy Duty Motor Vehicles - 731.6 Robot Applications - 911.2 Industrial Economics - 913 Production Planning and Control; Manufacturing - 913.4 Manufacturing
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

180. Review of data-parallel programming model

Hou, Ke (1, 2); Zhang, Jing (1); Li, Jun-Huai (1)
Source: *ICCSE 2012 - Proceedings of 2012 7th International Conference on Computer Science and Education*, p 629-633, 2012, *ICCSE 2012 - Proceedings of 2012 7th International Conference on Computer Science and Education*; **ISBN-13:** 9781467302425; **DOI:** 10.1109/ICCSE.2012.6295154; **Article number:** 6295154; **Conference:** 2012 7th International Conference on Computer Science and Education, ICCSE 2012, July 14, 2012 - July 17, 2012; **Sponsor:** University of Melbourne; **Publisher:** IEEE Computer Society
Author affiliation: (1) Institute of Computer Science and Engineering, Xi'an University of Technology, Xi'an, China (2) School of Economic Management, Xi'an Shiyou University, Xi'an, China
Abstract: Data-parallel programming model (DPPM for short) specialized for data-intensive computing becomes considerable popular because it simplifies the development of distributed parallel programs. DPPMs are classified into two categories: 1) MapReduce, Dryad; and 2) Piccolo, Function Flow, etc. based on their maturity. We analyze and compare these typical models by deployment, application, data partition, communication, fault tolerance and so on. Finally, we pay more attention to discussing development of key technologies which are deployment of storage and computation, task partition and fault tolerance in DPPM. © 2012 IEEE. (29 refs)
Main heading: Fault tolerance
Controlled terms: Parallel programming - MapReduce - Digital storage - Data handling
Uncontrolled terms: Data partition - Data-intensive computing - Data-parallel programming - Deployment of storage and computations - DPPM - Key technologies - Parallel program - Task partition
Classification Code: 722.1 Data Storage, Equipment and Techniques - 723.1 Computer Programming - 723.2 Data Processing and Image Processing - 723.5 Computer Applications
Database: Compendex
Data Provider: Engineering Village
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181. Quasi-continuous accumulation model of large tight sandstone gas field in Ordos Basin

Zhao, Jingzhou (1); Fu, Jinhua (2); Yao, Jingli (2); Liu, Xinshe (2); Wang, Hong'e (2); Cao, Qing (1); Wang, Xiaomei (1); Ma, Yanping (1); Fan, Yuanfang (1)
Source: *Shiyou Xuebao/Acta Petrolei Sinica*, v 33, n SUPPL.1, p 37-52, August 2012; **Language:** Chinese; **ISSN:** 02532697; **Publisher:** Science Press

Author affiliation: (1) School of Earth Sciences and Engineering, Xi'an Shiyou University, Xi'an 710065, China (2) PetroChina Changqing Oilfield Company, Xi'an 710021, China
Abstract: Large gas fields in Ordos Basin are mostly hosted in the tight sandstone reservoir of the Upper Paleozoic, and are widely distributed in the lower and middle formations of the Upper Paleozoic, especially in Shanxi Formation and Xiashihezi Formation of Permian. Studies have shown that tight sandstone gas fields in Ordos Basin are neither typical discontinuous conventional gas reservoir nor typical continuous unconventional gas reservoir, but a transitional type between the conventional and unconventional or between the discontinuous and continuous, being known as quasi-continuous gas accumulation. This type of accumulations features that the natural gas is oceurred in large-area and quasi-continuous in distribution without defined boundary; the trapping is between conventional trapping and actually no trap and mainly composed of unconventional lithologic traps and dynamic traps; gas and water distribution is complex and there is no obvious edge-bottom water; gas migration is subject to non-buoyancy driving and proximal accumulation. The formation and distribution of this large gas field is mainly controlled by factors such as hydrocarbon source rocks, reservoirs and so on, of which the distribution and quality of source rocks is predominant. Since it is subject to proximal migration and accumulation and the tight reservoir itself can play the role of seal-capping, the minimum gas generation intensity (GGI) of large tight sandstone gas fields of the Upper Paleozoic in Ordos Basin can be as low as about 10 × 108m3/km2. The proposal of quasi-continuous tight sandstone gas accumulation model implies that there are a greater natural gas resource endowment and exploration potential in the Upper Paleozoic of Ordos Basin. However, the confirmation of quasi-continuous accumulation model also means that the research ideas and exploration philosophy of conventional oil and gas geology are not fully applicable in Ordos Basin. (87 refs)
Main heading: Tight gas
Controlled terms: Sandstone - Water supply systems - Metamorphic rocks - Natural gas fields - Gas industry - Gases - Natural gas - Energy resources
Uncontrolled terms: Conventional oil and gas - Hydrocarbon source rocks - Large gas field - Migration and accumulation - Ordos Basin - Quasi-continuous accumulations - Tight sandstone reservoirs - Upper Paleozoic
Classification Code: 446.1 Water Supply Systems - 482.2 Minerals - 512.2 Natural Gas Deposits - 512.2.1 Natural Gas Fields - 522 Gas Fuels - 525.1 Energy Resources and Renewable Energy Issues
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

182. Tone mapping algorithm based on adaptive regionalization

Luo, Xuemei (1); Zeng, Ping (1, 2); Zheng, Haihong (1); Xie, Kun (1)
Source: *Huazhong Keji Daxue Xuebao (Ziran Kexue Ban)/Journal of Huazhong University of Science and Technology (Natural Science Edition)*, v 40, n 11, p 93-96, November 2012; **Language:** Chinese; **ISSN:** 16714512; **Publisher:** Huazhong University of Science and Technology
Author affiliation: (1) School of Computer Science, Xidian University, Xi'an 710071, China (2) School of Computer Science, Xi'an Shiyou University, Xi'an 710065, China
Abstract: A tone mapping algorithm based on adaptive regionalization was presented for high dynamic range (HDR) image reproduction. Firstly, the chrominance and luminance of the HDR image were separated, the luminance was regionalized adaptively according to the histogram characteristic, and a piecewise linear tone scale function was constructed to allocate the range of display luminance for different regions, which raised perceptual contrast of the image. Then the details of the image was extracted through bilateral filtering technology, which maintained details of the original image. Finally, the chromatic and achromatic image was fused, and the lose of chromaticity resulted from luminance compressing was corrected. Experiments show that the proposed algorithm gains advantages over the traditional ones in dynamic range compressing, details maintaining, and the performance of color. (14 refs)
Main heading: Luminance
Controlled terms: Conformal mapping - Image processing - Color - Piecewise linear techniques
Uncontrolled terms: Adaptive regionalization - Color correction - Detail recompense - High dynamic range images - Tone mapping
Classification Code: 723.2 Data Processing and Image Processing - 741.1 Light/Optics - 921.4 Combinatorial Mathematics, Includes Graph Theory, Set Theory
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

183. Fracture characteristics and main control factors of Triassic sand reservoir in Dongpu sag

Wang, Rui-Fei (1); Lü, Xin-Hua (2); Guo, Dian-Bin (2); Su, Hui (2); Huang, Xin-Wen (2)

Source: *Jilin Daxue Xuebao (Diqiu Kexue Ban)/Journal of Jilin University (Earth Science Edition)*, v 42, n 4, p 1003-1010, July 2012; **Language:** Chinese; **ISSN:** 16715888; **Publisher:** Editorial Board of Jilin University
Author affiliation: (1) College of Petroleum Engineering, Xi'an Shiyou University, Xi'an 710065, China (2) Zhongyuan Oilfield Company, SINOPEC Group, Puyang 457001, Henan, China
Abstract: In order to analyze the fracture characteristics, the origin mechanism and the controlling factors of Triassic sand reservoir in Dongpu sag, the techniques of field outcrop section observation, core overview, sample analysis, conventional logging, imaging logging, NMR logging, and rock mechanics experiment, and so on, were applied to study the fractures of Triassic sand reservoir in Wenmingzhai area. The research showed that there were three kinds of structure fractures as NNE, NE and nearly EW. The fracture trend was nearly parallel or perpendicular to the main faults. Fractures following tectonic highs appeared like belt. There were mainly high angle fractures (60°-90°), then low angle ones (30°-50°). They were mutually interlaced and formed the fracture network systems. Core analysis and porosity logging showed that the fracture porosity was 2.60%-3.20%, and the tectonic stress field was the external factor which controlled fracture growth in reservoir, while the reservoir lithology, the sand reservoir thickness, the rock mechanics nature were the internal ones. (25 refs)
Main heading: Fracture
Controlled terms: Rock mechanics - Factor analysis - Rocks - Lithology - Porosity - Sand - Tectonics
Uncontrolled terms: Controlling factors - Conventional logging - Dongpu sag - Fracture characteristics - Main control factor - Origin mechanism - Tectonic stress fields - Triassic
Classification Code: 481.1 Geology - 483.1 Soils and Soil Mechanics - 922.2 Mathematical Statistics - 931.2 Physical Properties of Gases, Liquids and Solids - 951 Materials Science
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

184. The elasticity-plasticity analysis of composite foundation with lime-soil pile by FEM

Cui, Ying (1, 2); Zhang, Guangwei (1)
Source: *Applied Mechanics and Materials*, v 170-173, p 762-765, 2012, *Progress in Civil Engineering*; **ISSN:** 16609336, **E-ISSN:** 16627482; **ISBN-13:** 9783037854228; **DOI:** 10.4028/www.scientific.net/AMM.170-173.762;
Conference: 2nd International Conference on Civil Engineering, Architecture and Building Materials, CEABM 2012, May 25, 2012 - May 27, 2012; **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Mechanical Engineering, Xi'an Shiyou University, Xi'an 710065, China (2) School of Civil Engineering, Chang'an University, Xi'an 710061, China
Abstract: With a certain actual lime-soil pile composite foundation project for background, the Finite Element Method (FEM) model of composite foundation was carried out by using the Drucker-Prager theory and ANSYS FEM procedure. By imitating the status of composite foundation under the construction load and analyzing the factors such as stress, settlement, stress ratio between pile and soil, carrying capacity of composite foundation with lime-soil pile has been gained. The conclusions offer some beneficial references to design and construction of actual projects. © (2012) Trans Tech Publications, Switzerland. (4 refs)
Main heading: Piles
Controlled terms: Soils - Lime - Finite element method - Foundations
Uncontrolled terms: ANSYS procedure - Composite foundations - Construction loads - Design and construction - Drucker-Prager - Elasticity-plasticity - FEM models - Finite element method FEM - Lime-soil - Pile composite foundation - Stress ratio between pile and soil
Classification Code: 408.2 Structural Members and Shapes - 483.1 Soils and Soil Mechanics - 483.2 Foundations - 804.2 Inorganic Compounds - 921.6 Numerical Methods
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

185. Study the displacement characteristics of foam flooding after polymer flooding on NMR

Zhao, Jinsheng (1); Li, Tiantai (1); Zhang, Ming (1); Li, Zhaomin (2)
Source: *Advanced Materials Research*, v 361-363, p 493-498, 2012, *Natural Resources and Sustainable Development*; **ISSN:** 10226680; **ISBN-13:** 9783037852682; **DOI:** 10.4028/www.scientific.net/AMR.361-363.493;
Conference: 2011 International Conference on Energy, Environment and Sustainable Development, ICEESD 2011, October 21, 2011 - October 23, 2011; **Publisher:** Trans Tech Publications
Author affiliation: (1) College of Petroleum Engineering, Xi'an Shiyou University, Xi'an, China (2) College of Petroleum Engineering, China University of Petroleum, Dongying, China

Abstract: Through parallel cores with different permeability contrast, the displacement process of foam flooding after polymer flooding is experimental studied. Using the experiment technology of nuclear magnetic resonance, the fluid distribution in cores with different diameter was studied. The distribution area of bore diameter in which oil is sweepouted of water flooding, polymer flooding and foam flooding under different processes and various heterogeneity conditions. The results show, against water flooding and polymer flooding, the distribution area of bore diameter in which oil is sweepouted is broadened. Foam can plugging the wide aperture in which water and polyer channeling, and foam can sweep the bore diameter which can't be swept by water and polymer. Foam can not only advance the recovery of low permeability core but also sweep the oil in microbore of high permeability core. © (2012) Trans Tech Publications, Switzerland. (9 refs)
Main heading: Nuclear magnetic resonance
Controlled terms: Oil well flooding - Floods
Uncontrolled terms: Bore diameter - Different process - Displacement characteristic - Displacement characteristics - Displacement process - Distribution area - Fluid distribution - High permeability - Low permeability - Permeability contrasts - Polymer flooding
Classification Code: 511.1 Oil Field Production Operations
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

186. Feature parameters of micro pore throat in deep section high pressure and low-permeability sandstone reservoir

Wang, Rui-Fei (1); Lv, Xin-Hua (2); Guo, Dian-Bin (2)
Source: *Zhongguo Kuangye Daxue Xuebao/Journal of China University of Mining and Technology*, v 41, n 1, p 64-68+73, January 2012; **Language:** Chinese; **ISSN:** 10001964; **Publisher:** China University of Mining and Technology
Author affiliation: (1) College of Petroleum Engineering, Xi'an Shiyou University, Xi'an, Shaanxi 710065, China (2) Zhongyuan Oilfield Company, SINOPEC, Puyang, Henan 457001, China
Abstract: The feature parameters of micro-pore structure in deep section high pressure and low-permeability sandstone reservoir of Wendong oil field in Dongpu sag were analyzed with the technology of conventional mercury penetration. The ejection saturation (SE) parameter was defined, and the product of ejection efficiency (EW) and ejection saturation (SE) was put forward as the classified appraisal index (E) of the micro-pore structures. The result shows that the types of pores and throats are various, and the heterogeneity of micro-pore structure is intense. There are direct correlations between the physical properties of reservoir and the sorting coefficient of pore throat, that is reverse to the pore throat of the conventional middle-high permeability sandstone reservoir's and similar to the pore throat of the conventional super-low one. The correlation between the SE/EW and the physical parameters is low, which differs from the conventional sandstone reservoir's. The micro-pore structure in deep section high pressure and low-permeability sandstone reservoir of Wendong oil field was classified into three types. The parameter classified assessment indexes (E) of I, II and III were above 11.21, from 2.90 to 11.21 and below 2.90, respectively. From the viewpoint of the feature parameters of micro-pore structure, the deep section high pressure and low-permeability sandstone reservoirs differs from the conventional middle-high permeability one, and so does the low one, it belongs to unconventional reservoir. The main factor that affects the development is the reservoir heterogeneity. (17 refs)
Main heading: Sandstone
Controlled terms: Low permeability reservoirs - Petroleum reservoir engineering - Pore structure - Oil well flooding
Uncontrolled terms: Deep section high pressure and low-permeability sandstone reservoirs - Dongpu sag - Ejection efficiency - Micro-pore structures - Micropores - Reservoir heterogeneity - Sandstone reservoirs - Unconventional reservoirs
Classification Code: 482.2 Minerals - 511.1 Oil Field Production Operations - 512.1 Petroleum Deposits - 512.1.2 Petroleum Deposits : Development Operations - 931.2 Physical Properties of Gases, Liquids and Solids
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

187. Experimental study of foaming agent screening and performance evaluation of nitrogen foam flooding in daqing oilfield

Zhao, Jinsheng (1); Chen, Ronghuan (2); Xu, Ziqiang (2)
Source: *Advanced Materials Research*, v 550-553, p 2873-2877, 2012, *Advances in Chemical Engineering II*; **ISSN:** 10226680; **ISBN-13:** 9783037854556; **DOI:** 10.4028/www.scientific.net/AMR.550-553.2873; **Conference:** 2nd

International Conference on Chemical Engineering and Advanced Materials, CEAM 2012, July 13, 2012 - July 15, 2012; **Publisher:** Trans Tech Publications
Author affiliation: (1) College of Petroleum Engineering, Xi'an Shiyou University, Xi'an, China (2) Research Institute of Oil and Gas Technology, Changqing Oil field Company, Xi'an, China
Abstract: Through the laboratory experiment, the foaming properties of six kinds of foaming agent was evaluated comprehensively. Through the primary selection, foaming agent concentration selection and salt tolerance evaluation, HY-2 foaming agent was selected in follow-up experiments. The Liquid viscosity effect for foaming performance showed that there exists an optimal value of the liquid viscosity, corresponding to the concentration of foam stabilizing agent should not be less than 700mg/l. The impact of temperature on the performance of foaming agent was mainly on the foam stability, the higher the temperature, the stability of the bubble the worse. Due to the presence of crude oil, foaming volume and stability of the foam appeared a downward trend, the character of which is very advantageous to adjust fluidity difference between the layers of high permeable formation and low permeable formation. © (2012) Trans Tech Publications, Switzerland. (4 refs)
Main heading: Floods
Controlled terms: Oil well flooding - Crude oil
Uncontrolled terms: Daqing oilfields - Experimental studies - Foam stability - Foaming properties - Laboratory experiments - Liquid viscosity - Nitrogen foam - Optimal values - Performance evaluation - Permeable formations - Salt tolerance - Stabilizing agents
Classification Code: 511.1 Oil Field Production Operations - 512.1 Petroleum Deposits
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

188. Time-varying ramp compensation mode and global dynamic optimization experiment of peak current control PFC boost converter

Cheng, Wei-Bin (1); Jin, Jin (1, 2); Guo, Ying-Na (1); Kang, Si-Min (1)
Source: *Tien Tzu Hsueh Pao/Acta Electronica Sinica*, v 40, n 11, p 2336-2341, November 2012; **Language:** Chinese; **ISSN:** 03722112; **DOI:** 10.3969/j.issn.0372-2112.2012.11.031; **Publisher:** Chinese Institute of Electronics
Author affiliation: (1) School of Electronic Engineering, Xi'an Shiyou University, Xi'an Shaanxi 710065, China (2) Shaanxi Gas Group Corporation Limited, Xi'an, Shaanxi 710016, China
Abstract: A time-varying model of power-factor-correction (PFC) Boost converter with peak continuous current control is built up, and the fast scale unstable phenomenon is analyzed dynamically, the shortage of ramp compensation with constant value is studied with circuit experiments. A global optimization theory and strategy of dynamic ramp compensation is proposed to get sinusoidal input line current. The experimental results show that this global compensation can eliminate fast-scale instability and get unity input power factor with the strongest stabilizing power at the same time, and arrive at global optimal compensation. (12 refs)
Main heading: Boost converter
Controlled terms: Site selection - Electric power factor correction - Global optimization - Electric current control
Uncontrolled terms: BOOST converter - Global dynamics - Ramp compensation - Time varying - Unstability
Classification Code: 704.1 Electric Components - 731.3 Specific Variables Control - 921.5 Optimization Techniques
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

189. The application of lock-in amplifier in weak signal detection

Zhang, Jiatian (1); Liu, Gang (1)
Source: *Advanced Materials Research*, v 403-408, p 2650-2653, 2012, *MEMS, NANO and Smart Systems*; **ISSN:** 10226680; **ISBN-13:** 9783037853122; **DOI:** 10.4028/www.scientific.net/AMR.403-408.2650; **Conference:** 2011 7th International Conference on MEMS, NANO and Smart Systems, ICMENS 2011, November 4, 2011 - November 6, 2011; **Sponsor:** Int. Assoc. Comput. Sci. Inf. Technol.; Singapore Institute of Electronics; **Publisher:** Trans Tech Publications
Author affiliation: (1) Key Laboratory of Photoelectricity Gas and Oil Logging and Detecting, Ministry of Education, Xi'an Shiyou University, Shaanxi Xi'an 710065, China
Abstract: The paper introduces the lock-in amplifier, the basic concept of weak signal detection, and analyzes its application in weak electric signal detection.The results show that: lock-in amplifier has a very strong resistance to noise. Compared to band-pass filter, the output signal is not amplify input signal, but amplify the AC signal and turn it into DC signal. © (2012) Trans Tech Publications, Switzerland. (3 refs)
Main heading: Bandpass filters

Controlled terms: Locks (fasteners) - Signal detection
Uncontrolled terms: AC signals - Band pass - Basic concepts - Dc signals - Input signal - Lock-in amplifier - Noise - Output signal - Weak electric signal - Weak signal detection
Classification Code: 703.2 Electric Filters - 716.1 Information Theory and Signal Processing
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

190. A novel self-adaptive quantum genetic algorithm

Sha, Lin-Xiu (1, 2); He, Yu-Yao (1)
Source: *Proceedings - International Conference on Natural Computation*, p 618-621, 2012, *Proceedings - 2012 8th International Conference on Natural Computation, ICNC 2012*; **ISSN:** 21579555; **ISBN-13:** 9781457721311; **DOI:** 10.1109/ICNC.2012.6234563; **Article number:** 6234563; **Conference:** 2012 8th International Conference on Natural Computation, ICNC 2012, May 29, 2012 - May 31, 2012; **Sponsor:** Chongqing University of Posts and Telecommunications; **Publisher:** IEEE Computer Society
Author affiliation: (1) College of Marine, Northwestern Polytechnical University, Xi'an, 710072, China (2) Key Laboratory of Drilling Rigs Controlling Technique, Xi'an Shiyou University, China
Abstract: The current quantum evolution algorithms have slow convergence rate and poor robustness. In order to overcome the two shortages, a novel self-adaptive quantum genetic algorithm is proposed. Firstly, the new algorithm adopts an encoding method which is based on the Bloch spherical coordinates. Secondly, in the process of searching the optimal solution, a self-adaptive factor is introduced to reflect the relative change rates which are relative to the difference of the best individual's objective fitness between the parent generation and the child generation. The convergence rate and direction of the algorithm can be improved by adjusting the factor. The rules of updating the rotation angle and are constructed. Finally, using hadamard gate of the quantum in the mutation strategy, it can enhance the diversity of population. The simulation results of the optimizing problem of the multidimensional complex functions show that the new algorithm has not only avoided effectively the premature and improved the convergence rate, but also boosted strikingly efficiency and stability robustness of the algorithm. © 2012 IEEE. (10 refs)
Main heading: Quantum computers
Controlled terms: Genetic algorithms
Uncontrolled terms: Adaptive factors - Convergence rates - Diversity of populations - Quantum evolution algorithms - Quantum genetic algorithm - Slow convergences - Spherical coordinates - Stability robustness
Classification Code: 722 Computer Systems and Equipment
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

191. Quantitative evaluation of micro pore throat characteristics in extra low permeability sandstone oil reservoir of Yanchang group in Ordos basin using constant rate mercury penetration technique

Gao, Hui (1); Sun, Wei (2)
Source: *Advanced Materials Research*, v 361-363, p 408-413, 2012, *Natural Resources and Sustainable Development*; **ISSN:** 10226680; **ISBN-13:** 9783037852682; **DOI:** 10.4028/www.scientific.net/AMR.361-363.408; **Conference:** 2011 International Conference on Energy, Environment and Sustainable Development, ICEESD 2011, October 21, 2011 - October 23, 2011; **Publisher:** Trans Tech Publications
Author affiliation: (1) College of Petroleum Engineering, Xi'An Shiyou University, Xi'an 710065, Shaanxi, China (2) Department of Geology, Northwest University, Xi'an 710069, Shaanxi, China
Abstract: Micro pore throat characteristics of extra low permeability sandstone oil reservoir of Yangchang group in Ordos basin are analyzed using constant rate mercury penetration technique. The results show that pore radius distributes similarly, in 100#200μm, peak values are about 140μm in extra low permeability sandstone oil reservoir. The lower the permeability is, the narrower the distribution ranges of throat are, content of smaller throats become high and variation is more sensitive to permeability, distribution ranges of pore throat radius ratio are wide and permeability has bigger influence on input mercury saturation of throat in extra low permeability sandstone oil reservoir. The difference of pore throat characteristics mainly depends on throat in extra low permeability sandstone oil reservoir. The impacts of pore and throat on total capillary curve are various to different permeability cores, Throat development should be paid more attention in middle or later stage of oil development to extra low permeability sandstone oil reservoir. © (2012) Trans Tech Publications, Switzerland. (17 refs)
Main heading: Sandstone
Controlled terms: Petroleum reservoir engineering - Low permeability reservoirs - Metamorphic rocks

Uncontrolled terms: Constant rate mercury penetration - Extra low-permeability - Ordos Basin - Pore throat - Quantitative evaluation
Classification Code: 482.2 Minerals - 512.1 Petroleum Deposits - 512.1.2 Petroleum Deposits : Development Operations
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

192. Security enhancing algorithm in network computing environment based on periodic condition monitoring

Zhang, Xian-Wei (1, 2); Zhang, Jing (1)
Source: *ICCSE 2012 - Proceedings of 2012 7th International Conference on Computer Science and Education*, p 564-567, 2012, *ICCSE 2012 - Proceedings of 2012 7th International Conference on Computer Science and Education*; **ISBN-13:** 9781467302425; **DOI:** 10.1109/ICCSE.2012.6295138; **Article number:** 6295138; **Conference:** 2012 7th International Conference on Computer Science and Education, ICCSE 2012, July 14, 2012 - July 17, 2012; **Sponsor:** University of Melbourne; **Publisher:** IEEE Computer Society
Author affiliation: (1) School of Computer Science and Engineering, Xi'an University of Technology, Xi'an Shanxi, China (2) School of Petroleum Resources, Xi'an Shiyou University, Xi'an Shanxi, China
Abstract: As a novel computing model, network computing the computing resources distributed on the internet, and providing required service through the unified interface, which bring great convenience to people's daily life. However, the existence of security related threats in internet hinder the further application of network computing. Regarding this problem, this paper propose a security enhancing technology based on periodic security condition monitoring, which is aware the security state of network computing environment and suitable action is chosen for the security defending of network domain. © 2012 IEEE. (10 refs)
Main heading: Condition monitoring
Controlled terms: Network security - Distributed computer systems
Uncontrolled terms: Computing model - Computing resource - Daily lives - Network computing - Network domains - Periodic condition monitoring - Security enhancing - Technology-based
Classification Code: 722.4 Digital Computers and Systems - 723 Computer Software, Data Handling and Applications
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

193. Separation of hydrogen sulfide from wastewater by emulsion liquid membranes

Hu, Y. (1); Zhang, N. (1, 2); Qu, C. (2)
Source: *Chemical Engineering and Technology*, v 35, n 2, p 341-346, February 2012; **ISSN:** 09307516, **E-ISSN:** 15214125; **DOI:** 10.1002/ceat.201100283; **Publisher:** Wiley-VCH Verlag
Author affiliation: (1) Xi'an Jiaotong University, School of Energy and Power Engineering, Xi'an, China (2) Xi'an Shiyou University, School of Chemistry and Chemical Engineering, Xi'an, China
Abstract: Hydrogen sulfide was separated from highly saline wastewater by emulsion liquid membranes (ELMs). Such membranes consist of polyalkenyl succinimide as emulsifying agent, diethanolamine as carrier, kerosene as membrane, and sodium hydroxide as stripping solution. The effect of four surfactants on the stability of ELMs was investigated and every operational parameter was tested. The highest achievable separation efficiency was 99.73% for a 100mgL-1 solution. Obviously, the salinity of the external phase has a negligible effect on the separation of H2S using ELMs. © 2012 WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim. (26 refs)
Main heading: Hydrogen sulfide
Controlled terms: Liquids - Emulsification - Sodium hydroxide - Liquid membranes - Sulfur determination - Desulfurization - Separation
Uncontrolled terms: Diethanolamine - Emulsifying agents - Emulsion liquid membrane (ELM) - External phase - Operational parameters - Saline wastewater - Separation efficiency - Stripping solution
Classification Code: 801 Chemistry - 802.3 Chemical Operations - 804.2 Inorganic Compounds
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

194. Poisson log-linear regression model for rural signalized intersection

Zhiping, Ren (1)

Source: *Advanced Materials Research*, v 594-597, p 1391-1394, 2012, *Advances in Industrial and Civil Engineering*; **ISSN:** 10226680; **ISBN-13:** 9783037855362; **DOI:** 10.4028/www.scientific.net/AMR.594-597.1391; **Conference:** 2012 Global Conference on Civil, Structural and Environmental Engineering, GCCSEE 2012 and the 3rd International Symposium on Multi-field Coupling Theory of Rock and Soil Media and Its Applications, MCTRSM 2012, October 20, 2012 - October 21, 2012; **Publisher:** Trans Tech Publications
Author affiliation: (1) Key Laboratory of photoelectric logging and detecting of oil and gas, Ministry of Education, Xi'an Shiyou University, P.O. Box 710065, China
Abstract: Safety performance of rural signalized intersections is critical for identifying high-risk sites and predicting the hazardousness. This paper aims to develop a predictive model that will describe the safety of rural signalized intersections based on various input variables. Data are examined from 124 rural signalized intersections over three states, and Poisson log-linear regression model is presented, which connected traffic number and the average traffic volumes, geometric characteristics and signalization characteristics variables together. The model and associated data analysis reveal that average daily traffic, media width, speed limit, degree of horizontal curvature and left-turn lane are the factors that have greatest overall effect on safety. The results show that the Poisson log-linear regression model is able to describe the rural signalized intersection safety accurately. Using this model, effective countermeasures can be applied for improving traffic safety. © (2012) Trans Tech Publications, Switzerland. (10 refs)
Main heading: Linear regression
Controlled terms: Safety engineering - Intersections - Traffic signals
Uncontrolled terms: Average daily traffics - Geometric characteristics - Hazardousness - Input variables - Poisson regression models - Predictive models - Regression model - Safety performance - Signalized intersection - Speed limit - Traffic safety - Traffic volumes
Classification Code: 432.4 Highway Traffic Control - 914 Safety Engineering - 922.2 Mathematical Statistics
Database: Compendex
Data Provider: Engineering Village
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195. The solute redistribution during solidification of Al-Si-Mg alloys

He, Zhi (1); Zhou, Haobin (1); Zhang, Zhongyao (2); Li, Lanyun (1)
Source: *Advanced Materials Research*, v 368-373, p 979-982, 2012, *Advances in Civil Engineering and Architecture Innovation*; **ISSN:** 10226680; **ISBN-13:** 9783037852781; **DOI:** 10.4028/www.scientific.net/AMR.368-373.979; **Conference:** 4th International Conference on Technology of Architecture and Structure, ICTAS 2011, September 22, 2011 - September 24, 2011; **Publisher:** Trans Tech Publications
Author affiliation: (1) College of Material Science and Engineering, Xi'an Shiyou University, 710065, Xi'an, China (2) Construction Engineering Department, Petrochina Changqing Oilfield, 710086, Xi'an, China
Abstract: The solution redistribution was an important phenomenon during the solidification of multi-component alloys. The changing disciplines during solidification of different component Al-Si-Mg alloys were calculated in this paper. The calculations were coupled with CALPHAD technology. The interaction of solutes would change the solute redistribution coefficients during the solidification especially in the ends of solidification. So in the ends of the solidification, the slope of the curves turned to bigger and bigger. The results of the calculating of the eutectic fraction of the alloys show that errors exist under assuming the partition coefficients of solutes as a constant due to the interaction between solutes in ternary alloys. The predicted eutectic fractions of Al-Si-Mg alloys agree well with the experimental results for using the CALPHAD methods. (8 refs)
Main heading: Ternary alloys
Controlled terms: Aluminum alloys - Eutectics - Silicon alloys - Magnesium alloys - Solidification
Uncontrolled terms: Al-Si-Mg alloy - Calphad - CALPHAD method - Multi-component alloy - Partition coefficient - Solute redistribution
Classification Code: 531.2 Metallography - 541.2 Aluminum Alloys - 542.2 Magnesium and Alloys - 549.2 Alkaline Earth Metals - 549.3 Nonferrous Metals and Alloys excluding Alkali and Alkaline Earth Metals - 802.3 Chemical Operations
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

196. AD Hoc network link performance inference method

Yuan, Xinrui (1); Shuaiwei, Zheng (2)
Source: *IET Conference Publications*, v 2012, n 598 CP, p 342-348, 2012, *International Conference on Automatic Control and Artificial Intelligence, ACAI 2012*; **ISBN-13:** 9781849195379; **DOI:** 10.1049/cp.2012.0988; **Conference:**

International Conference on Automatic Control and Artificial Intelligence, ACAI 2012, March 3, 2012 - March 5, 2012;
Publisher: Institution of Engineering and Technology
Author affiliation: (1) Center of Current Education Technology, Northwest University, Xi'an city, 710069, China (2) Center of Information, Xi'An Shiyou Univerisity, Xi'an city, 710065, China
Abstract: In linear analysis model on Ad Hoc network link inference, when the rank of routing matrix is not equal to that of its augmented matrix, there is no solution for the nonhomogeneous linear equations. In order to solve this problem, The paper brings forth a link performance inference method based on multi-objective optimization. Firstly, link performance inference problem was transformed to a multiobjectives optimal one through simple mathematical transformation in the paper, Secondly, genetic algorithm was used to obtain a sub-optimal solution. The simulation experiment verifies the effectiveness and correctness of the method in this paper. (17 refs)
Main heading: Ad hoc networks
Controlled terms: Inference engines - Mathematical transformations - Multiobjective optimization - Genetic algorithms - Matrix algebra
Uncontrolled terms: Augmented matrices - Inference methods - Inference problem - Linear analysis - Link performance - Network tomography - Non-homogeneous - Suboptimal solution
Classification Code: 722.3 Data Communication, Equipment and Techniques - 723 Computer Software, Data Handling and Applications - 723.4.1 Expert Systems - 921.1 Algebra - 921.3 Mathematical Transformations - 921.5 Optimization Techniques
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

197. Through-casing resistivity logging signal acquisition and processing techniques

Yan, Zheng-Guo (1); Su, Juan (1)
Source: *Advanced Materials Research*, v 403-408, p 2659-2662, 2012, *MEMS, NANO and Smart Systems*; **ISSN:** 10226680; **ISBN-13:** 9783037853122; **DOI:** 10.4028/www.scientific.net/AMR.403-408.2659; **Conference:** 2011 7th International Conference on MEMS, NANO and Smart Systems, ICMENS 2011, November 4, 2011 - November 6, 2011; **Sponsor:** Int. Assoc. Comput. Sci. Inf. Technol.; Singapore Institute of Electronics; **Publisher:** Trans Tech Publications
Author affiliation: (1) Key Laboratory of Photoelectric Logging and Detecting of Oil and Gas, Ministry of Education, Xi'An Shiyou University, Xi'an, Shaanxi 710065, China
Abstract: Weak signal detection is the key technique in developing through-casing resistivity logging tool. In this paper, ultra-low-noise preamplifier, oversampling method, sampling integration and sampling average method, digital phase-sensitive detection technique are applied in detecting logging signals and 30nV is achieved. The indoor calibration test and field experiment of through-casing resistivity logging model machine with those weak signal detection techniques were carried out. The result showed that the measurement range of formation resistivity is $0\sim200$ #.m. © (2012) Trans Tech Publications, Switzerland. (9 refs)
Main heading: Signal detection
Controlled terms: Signal sampling
Uncontrolled terms: Average method - Calibration tests - Field experiment - Formation resistivity - Key techniques - Measurement range - Model machine - Over sampling - Phase-sensitive detection - Processing technique - Resistivity logging - Signal acquisitions - Through-casing resistivity logging - Ultra-low-noise preamplifier - Weak signal detection
Classification Code: 716.1 Information Theory and Signal Processing - 723.2 Data Processing and Image Processing - 922 Statistical Methods
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

198. Novel fiber bragg grating accelerometer based on diaphragm

Liu, Qin Peng (1, 2); Qiao, Xue Guang (1); Zhao, Jan Lin (1); Jia, Zhen An (3); Gao, Hong (3); Shao, Min (1)
Source: *IEEE Sensors Journal*, v 12, n 10, p 3000-3004, 2012; **ISSN:** 1530437X; **DOI:** 10.1109/JSEN.2012.2201464; **Article number:** 6208807; **Publisher:** Institute of Electrical and Electronics Engineers Inc.
Author affiliation: (1) Shanxi Key Laboratory of Optical Information Technology, Northwestern Polytechnical University, Xi'an 710072, China (2) Xi'an Shiyou University, Xi'an 710065, China (3) Shiyou University, Xi'an 710065, China
Abstract: We present the modeling, design, fabrication, optimization, and characterization of a novel fiber Bragg grating (FBG) accelerometer based on a diaphragm. The principle of the FBG accelerometer and the acceleration response versus FBG wavelength are analyzed theoretically. Experimental results indicate that the FBG accelerometer

provides a linear response over a broad frequency range from 10 to 200 Hz, with a high sensitivity of 36.6 pm/G, which agrees well with the theoretical sensitivity; linear fitting is 99.8% and relative error is 3.68%. Dynamic resolution is 2 mG/#Hz in flat range, cross-axis sensitivity less than 1.3% of the main-axis sensitivity, and it has a strong anti-interference capacity, so it is a good candidate for cross well seismic wave measurement (>50). © 2012 IEEE. (12 refs)
Main heading: Diaphragms
Controlled terms: Accelerometers - Acceleration measurement - Fiber Bragg gratings
Uncontrolled terms: Acceleration response - Anti-interference - Broad frequency range - Cross-axis sensitivity - Dynamic resolution - Fiber bragg grating accelerometer - High sensitivity - Wave measurement
Classification Code: 601.2 Machine Components - 943.1 Mechanical Instruments - 943.2 Mechanical Variables Measurements
Funding Details: Number: 2008ZDGC14,2009ZKC01-19, Acronym: -, Sponsor: -; Number: 60727004,Grant 61077060, Acronym: NSFC, Sponsor: National Natural Science Foundation of China; Number: Grant Z08119, Acronym: MOE, Sponsor: Ministry of Education of the People's Republic of China; Number: Grant 2008CR1063, Acronym: MOST, Sponsor: Ministry of Science and Technology of the People's Republic of China; Number: 2007AA03Z413,Grant 2009AA06Z203, Acronym: -, Sponsor: National High-tech Research and Development Program;
Funding text: Manuscript received January 17, 2012; revised April 16, 2012; accepted May 17, 2012. Date of publication May 30, 2012; date of current version August 7, 2012. This work was supported in part by the National Natural Science Foundation under Grant 60727004 and Grant 61077060, in part by the National 863 Program under Grant 2007AA03Z413 and Grant 2009AA06Z203, in part by the Ministry of Education Project of Science and Technology Innovation under Grant Z08119, in part by the Ministry of Science and Technology Project of International Cooperation under Grant 2008CR1063, and in part by the Shanxi Province Project of Science and Technology Innovation under Grant 2009ZKC01-19 and Grant 2008ZDGC14. The associate editor coordinating the review of this paper and approving it for publication was Prof. Boris Stoeber.
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

199. Research of cooperative design platform for drilling engineering based on SOA

Liu, Zhikun (1); Li, Qi (2)
Source: *Proceedings of the 2012 International Conference on Industrial Control and Electronics Engineering, ICICEE 2012*, p 1014-1018, 2012, *Proceedings of the 2012 International Conference on Industrial Control and Electronics Engineering, ICICEE 2012*; **ISBN-13:** 9780769547923; **DOI:** 10.1109/ICICEE.2012.269; **Article number:** 6322558; **Conference:** 2012 International Conference on Industrial Control and Electronics Engineering, ICICEE 2012, August 23, 2012 - August 25, 2012; **Sponsor:** 'Xi'an Technological University'; IEEE Kansas City Section; Missouri Western State University; **Publisher:** IEEE Computer Society
Author affiliation: (1) CMOE Key Laboratory of Petroleum Engineering, China University of Petroleum, Beijing, China (2) Institute of Petroleum Engineering, Xi'an Shiyou University, Xi'an, China
Abstract: According to the characteristics and needs of cooperative design for drilling engineering, this paper proposes to build a SOA-based cooperative design platform for drilling engineering, and this platform provides a cooperative work environment supported by the computer network for the multi-department and multidisciplinary engineering designers distributed in different locations. The architecture of cooperative design platform is designed. Using enterprise service bus technology, this paper achieves the effective integration and sharing of various sources and heterogeneous drilling information resources, and according the characteristics of task dynamic changes during the cooperative process, using access control mechanism based on task and role, the right management of multi-user cooperative design task is achieved. To improve the consistency and concurrency of multi-user cooperative operation, this paper establishes a kind of client concurrency control mechanism based on attribute operation. This paper describes in detail the key technology to realize this platform, including user right management, task processing flow, task dynamic dispatching mechanism and multi-user concurrency control of shared objects, etc. © 2012 IEEE. (7 refs)
Main heading: Web services
Controlled terms: Concurrency control - Distributed computer systems - Information management - Dynamics - Access control
Uncontrolled terms: Access control mechanism - Cooperative Design - Cooperative operation - Drilling engineering - Drilling information - Enterprise service bus - Multidisciplinary engineering - platform
Classification Code: 722.4 Digital Computers and Systems - 723 Computer Software, Data Handling and Applications
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

200. Research on key technology for SaaS

Zhu, Yangpeng (1, 2); Zhang, Jing (1)
Source: *ICCSE 2012 - Proceedings of 2012 7th International Conference on Computer Science and Education*, p 207-210, 2012, *ICCSE 2012 - Proceedings of 2012 7th International Conference on Computer Science and Education*; **ISBN-13:** 9781467302425; **DOI:** 10.1109/ICCSE.2012.6295058; **Article number:** 6295058; **Conference:** 2012 7th International Conference on Computer Science and Education, ICCSE 2012, July 14, 2012 - July 17, 2012; **Sponsor:** University of Melbourne; **Publisher:** IEEE Computer Society
Author affiliation: (1) Institute of Computer Science and Engineering, Xi'an University of Technology, Xi'an, China (2) Institute of Economic and Management, Xi'an Shiyou University, China
Abstract: Software as a Service is becoming a popular research field in software development for its feature of low costing entry, easy implementation and zero infrastructure. SaaS is a multi tenant model which is different from traditional software in user data security, software development and deployment. This paper firstly analyses SaaS architecture, secondly introduces key technology of SaaS system from user data security, configurability user application and maturity model. Finally, this paper gives the future research directions. © 2012 IEEE. (10 refs)
Main heading: Software design
Controlled terms: Software as a service (SaaS) - Web services
Uncontrolled terms: Configurability - Future research directions - Key technologies - Maturity model - Multi tenants - Research fields
Classification Code: 722.4 Digital Computers and Systems - 723.1 Computer Programming - 723.5 Computer Applications
Database: Compendex
Data Provider: Engineering Village
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201. Study on desanding technology based on gravity sedimentation in oil gathering and transportation station

Yao, Peifen (1); Xiao, Rongge (1); Zhang, Qiaosheng (2); Zhan, Jing (1)
Source: *Advanced Materials Research*, v 524-527, p 1895-1898, 2012, *Natural Resources and Sustainable Development II*; **ISSN:** 10226680; **ISBN-13:** 9783037854174; **DOI:** 10.4028/www.scientific.net/AMR.524-527.1895; **Conference:** 1st International Conference on Energy and Environmental Protection, ICEEP 2012, June 23, 2012 - June 24, 2012; **Publisher:** Trans Tech Publications
Author affiliation: (1) College of Petroleum Engineering, Xi'an Shiyou University, Xi'an, 710065, China (2) Xi'an Chang Qing Technology Engineering Limited Liability Company, Xi'an, 710048, China
Abstract: This paper is about the study on desanding technology based on the characteristics of the produced fluid and the principle of the suspension gravity settling. Proposed a new type of three-phase separator by analyzing the species of gravity desanding and the main influencing factors of sedimentation (including particle properties, liquid properties, solid-liquid ratio, containers and stir). The inclined plane is substituted by a plane on the internal components of the container, which makes the sand deposits easily and then removed by desander. The design principle of the desander is based on the principle of jetting pump (the desanding technology in airtight container). It has been applied to oil filed successfully and provides a reference for further study. © (2012) Trans Tech Publications. (4 refs)
Main heading: Sedimentation
Controlled terms: Liquids - Petroleum transportation - Containers
Uncontrolled terms: A-plane - Airtight container - Desander - Design Principles - Gravity sedimentation - Gravity settling - Inclined planes - Influencing factor - Liquid properties - Oil gathering and transportations - Particle properties - Sand deposits - Solid-liquid ratio - Solid-liquid separation - Technology-based
Classification Code: 802.3 Chemical Operations
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

202. The solidification path due to the solute redistribution of Al-Si-Mg alloys

He, Zhi (1); Zhou, Haobin (1); Zhang, Zhongyao (2); Li, Lanyun (1)
Source: *Advanced Materials Research*, v 361-363, p 1354-1356, 2012, *Natural Resources and Sustainable Development*; **ISSN:** 10226680; **ISBN-13:** 9783037852682; **DOI:** 10.4028/www.scientific.net/AMR.361-363.1354; **Conference:** 2011 International Conference on Energy, Environment and Sustainable Development, ICEESD 2011, October 21, 2011 - October 23, 2011; **Publisher:** Trans Tech Publications

Author affiliation: (1) College of Material Science and Engineering, Xi'an Shiyou University, 710065, Xi'an, China (2) Construction Engineering Department, Petrochina Changqing Oilfield, 710086, Xi'an, China
Abstract: The solution redistribution was an important phenomenon during the solidification of multi-component alloys. The different paths of solidification of different component Al-Si-Mg alloys were calculated in this paper. The calculations were coupled with CALPHAD technology. The interaction of solutes would change the solute redistribution coefficients during the solidification especially in the ends of solidification. The solidification paths were calculated by employing the CALPHAD technology and the binary partition coefficients separately. The results show that errors exist under assuming the partition coefficients of solutes as a constant due to the interaction between solutes in ternary alloys. The predicted solidification processes of Al-Si-Mg alloys agree well with the experimental results in this paper. © (2012) Trans Tech Publications, Switzerland. (8 refs)
Main heading: Aluminum alloys
Controlled terms: Solidification - Silicon alloys - Ternary alloys - Magnesium alloys
Uncontrolled terms: Al-Si-Mg alloy - Calphad - Multi-component alloy - Partition coefficient - Solidification process - Solute redistribution
Classification Code: 541.2 Aluminum Alloys - 542.2 Magnesium and Alloys - 549.2 Alkaline Earth Metals - 549.3 Nonferrous Metals and Alloys excluding Alkali and Alkaline Earth Metals - 802.3 Chemical Operations
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

203. Transmission and distribution network analysis platform based on FastDB

Dong, Zhangzhuo (1); He, Xiaoting (1); Li, Jianxin (2); Li, Kun (3)
Source: *Communications in Computer and Information Science*, v 307 CCIS, n PART 1, p 747-755, 2012, *Information Computing and Applications - Third International Conference, ICICA 2012, Proceedings*; **ISSN:** 18650929; **ISBN-13:** 9783642340376; **DOI:** 10.1007/978-3-642-34038-3_103; **Conference:** 3rd International Conference on Information Computing and Applications, ICICA 2012, September 14, 2012 - September 16, 2012; **Sponsor:** Chengde Petroleum College; Hunan Institute of Engineering; National Science Foundation of China; Northeastern University at Qinhuangdao; Yanshan University; **Publisher:** Springer Verlag
Author affiliation: (1) Xi'an Shiyou University, Xi'an, China (2) Erdos Electric Power Bureau Refresher Test Management Office, Erdos, China (3) Xi'an University of Science and Technology, Xi'an, China
Abstract: It's of great significance to develop an open and expansive distributed analysis platform for power transmission and distribution network. In this paper, a system based on IEC61970-301 common information model and FastDB memory database is introduced. The characteristics of FastDB and the directions for how to use it is illustrated firstly. Then, the map method for storing CIM in FastDB is given. At last, the interface efficiency of FastDB memory database is tested, proving that CIM storage proceeded by memory database is with feasibility and high efficiency. © 2012 Springer-Verlag. (11 refs)
Main heading: Electric power transmission networks
Controlled terms: Efficiency - Electric network analysis - Database systems
Uncontrolled terms: Common information model - Distributed analysis - High-efficiency - Interface efficiency - Memory database - Power network analysis platforms - Power transmission and distributions - Transmission and distribution
Classification Code: 703.1.1 Electric Network Analysis - 706.1.1 Electric Power Transmission - 723.3 Database Systems - 913.1 Production Engineering
Database: Compendex
Data Provider: Engineering Village
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204. Image compression and transmission system for digital down-hole television

Su, Juan (1); Yan, Zheng-Guo (1)
Source: *Applied Mechanics and Materials*, v 130-134, p 3068-3071, 2012, *Mechanical and Electronics Engineering III*; **ISSN:** 16609336, **E-ISSN:** 16627482; **ISBN-13:** 9783037852866; **DOI:** 10.4028/www.scientific.net/AMM.130-134.3068; **Conference:** 2011 3rd International Conference on Mechanical and Electronics Engineering, ICMEE 2011, September 23, 2011 - September 25, 2011; **Sponsor:** Hefei University of Technology; **Publisher:** Trans Tech Publications
Author affiliation: (1) Key Laboratory of Photoelectric Logging and Detecting of Oil and Gas, Ministry of Education, Xi'An Shiyou University, Xi'an, Shaanxi 710065, China
Abstract: Image compression method and long distance transmission technology are technical difficulties in researching digital down-hole television. A down-hole image compression and transmission system is designed. Data are transmitted with quad logging cables and the data transfer rate is 100Kbps; hardware image compression method

based on the wavelets transform is adopted and image data are treated with the wavelets transform, quantization and coding. By controlling color selection, quantizes coefficients, quality box parameters, background contrast and field rate to achieve dynamic control of compression rate and obtain high compression ratio simultaneously. Two compression ratio control methods are presented according to data transfer rate and typical borehole image and steady image can be observed in 3000m deep mine. © (2012) Trans Tech Publications, Switzerland. (7 refs)
Main heading: Image compression
Controlled terms: Wavelet transforms - Data transfer - Image communication systems - Vehicle transmissions - Image coding - Light transmission - Data transfer rates - Quality control
Uncontrolled terms: Borehole images - Color selection - Compression rates - Deep mines - Dynamic control - Dynamic controls - Field rates - High compression ratio - Image compression methods - Image data - Logging cables - Long distance transmission - Technical difficulties - Transmission systems - Wavelets transform
Classification Code: 602.2 Mechanical Transmissions - 741.1 Light/Optics - 913.3 Quality Assurance and Control - 921.3 Mathematical Transformations
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

205. A new estimation of water-drive reservoir production performance prediction based on radial fluid flow

Liu, Xiaojuan (1); Huang, Rui (1); Wang, Ruihe (2)
Source: *Advanced Materials Research*, v 361-363, p 364-369, 2012, *Natural Resources and Sustainable Development*; **ISSN:** 10226680; **ISBN-13:** 9783037852682; **DOI:** 10.4028/www.scientific.net/AMR.361-363.364;
Conference: 2011 International Conference on Energy, Environment and Sustainable Development, ICEESD 2011, October 21, 2011 - October 23, 2011; **Publisher:** Trans Tech Publications
Author affiliation: (1) Petroleum Engineering College, Xi'an Shiyou University, Xi'an 710065, China (2) China National Oil and Gas Exploration and Development Corporation, Beijing 100034, China
Abstract: Due to deposition sequence, reservoir can be approximately considered as formation vertically consisting of many small layers with different physical properties. Meanwhile, the property distribution of these small layers, e.g. heterogeneity of the formation, has a great impact on reservoir development and its production performance. No matter how fine grid to be used, it is always difficult for traditional numerical simulation to couple the impact of vertical heterogeneity of the formation, that will inevitably result in significant calculation error. Therefore in order to overcome this defect and deliver better calculation results which are consistent along with real production performance, this paper derives a math model combined both analysis approach and numerical approach, which has a better description for vertical heterogeneity of formation by overlapping small layers and could deliver better calculation results by fine-gridding strata profile. The model could be applied to either predict further field production performance or conduct history match based on production history of field. This method has applied in actual production analysis and reservoir evaluation, and good results have been achieved. © (2012) Trans Tech Publications, Switzerland. (6 refs)
Main heading: Reservoirs (water)
Controlled terms: Flow of fluids - Forecasting
Uncontrolled terms: Analysis approach - Calculation error - Deposition sequences - Fine grids - History match - Math model - Numerical approaches - Production analysis - Production performance - Production performance prediction - Water-drive reservoir
Classification Code: 441.2 Reservoirs - 631.1 Fluid Flow, General
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

206. Medical ultrasonic treatment and its applications in medicine

Yang, Yue-Hua (1); Lin, Shu-Yu (2)
Source: *Proceedings of the 2012 Symposium on Piezoelectricity, Acoustic Waves and Device Applications, SPAWDA 2012*, p 447-450, 2012, *Proceedings of the 2012 Symposium on Piezoelectricity, Acoustic Waves and Device Applications, SPAWDA 2012*; **ISBN-13:** 9781467348164; **DOI:** 10.1109/SPAWDA.2012.6464129; **Article number:** 6464129; **Conference:** 2012 Symposium on Piezoelectricity, Acoustic Waves and Device Applications, SPAWDA 2012, November 23, 2012 - November 25, 2012; **Sponsor:** Acoustic Society of China (ASC); Chinese Society of Theoretical and Applied Mechanics (CSTAM); IEEE Ultrason., Ferroelectr., Freq. Control Soc. (UFFC-S); **Publisher:** IEEE Computer Society
Author affiliation: (1) University Hospital, Xian Petroleum University, Xian 710065, China (2) Institute of Applied Acoustics, Shaanxi Normal University, Xian 710062, China

Abstract: In this paper, the physical mechanism of ultrasonic treatment and its applications in medicine are analyzed. First, the biological effect of medical ultrasound in ultrasonic therapy is elaborated, and its action in treating some related diseases is analyzed. Some newly-developed ultrasonic therapy technologies and devices are stressed; the future developing trend of ultrasonic therapy is analyzed and predicted. © 2012 IEEE. (5 refs)
Main heading: Disease control
Controlled terms: Ultrasonic equipment
Uncontrolled terms: Biological effects - Developing trend - Focused ultrasound - Medical ultrasonics - Medical ultrasound - Physical mechanism - Ultrasonic therapies - Ultrasonic treatments
Classification Code: 753.2 Ultrasonic Devices
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

207. Melting characteristics of equiaxed NH4Cl crystals settling in superheated NH4Cl-H2O melts

Zhou, Peng (1); Wang, Meng (1); Chen, Lei (1); Qiu, Feng (1); Huang, Weidong (1); Zhang, Jialiang (2)
Source: *Advanced Materials Research*, v 538-541, p 2444-2447, 2012, *Materials Processing Technology II*; **ISSN:** 10226680; **ISBN-13:** 9783037854471; **DOI:** 10.4028/www.scientific.net/AMR.538-541.2444; **Conference:** 2nd International Conference on Advanced Engineering Materials and Technology, AEMT 2012, July 6, 2012 - July 6, 2012; **Publisher:** Trans Tech Publications
Author affiliation: (1) State Key Laboratory of Solidification Processing, Northwestern Polytechnical University, Xi'an, 710072, China (2) College of Petroleum Engineering, Xi'an Shiyou University, Xi'an 710065, China
Abstract: The influence of equiaxed crystal movements in a superheated environment on the melt kinetics of the equiaxed crystals was experimentally investigated by observation of the settling and melting behaviors of NH4Cl equiaxed crystals in its aqueous solution. The experimental set-up composed of the settling tubes, water bath and video capture device, where NH4Cl equiaxed crystals were acquired in a cooling zone and then introduced into the superheated settling tubes filling with NH4Cl-H2O model alloy, and the morphologies of the equiaxed crystals were video captured for further analysis. Two kinds of morphology evolution have been observed, and the difference was related with typical spinning movements of the equiaxed crystals during their sedimentation. Changes of the length of six primary dendrite arms have been measured; the results were compared with the calculated melting rate for equiaxed crystals without any convection. It has been shown that the convection induced by the sedimentation imposes a strong influence on the melting kinetics of the equiaxed crystals. © (2012) Trans Tech Publications, Switzerland. (11 refs)
Main heading: Textures
Controlled terms: Ammonium compounds - Chlorine compounds - Melting - Metal melting - Morphology - Tubes (components)
Uncontrolled terms: Ammonium chloride - Cooling zones - Equiaxed crystal - Melting behavior - Melting characteristics - Melting kinetics - Melting rates - Model alloys - Morphology evolution - Primary dendrite - Settling - Video capture - Water baths
Classification Code: 531.1 Metallurgy - 616.1 Heat Exchange Equipment and Components - 804.1 Organic Compounds - 933 Solid State Physics - 951 Materials Science
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

208. Calculation on friction pressure gradient of gas-liquid stratified flows in condensate natural gas pipeline

Xiao, Rongge (1, 2); Wei, Bingqian (2); Chen, Gang (2)
Source: *Advanced Materials Research*, v 356-360, p 875-880, 2012, *Progress in Environmental Science and Engineering*; **ISSN:** 10226680; **ISBN-13:** 9783037852675; **DOI:** 10.4028/www.scientific.net/AMR.356-360.875; **Conference:** 2011 International Conference on Energy, Environment and Sustainable Development, ICEESD 2011, October 21, 2011 - October 23, 2011; **Publisher:** Trans Tech Publications
Author affiliation: (1) College of Petroleum Engineering, Xi'an Shiyou University, Xi'an, 710065, China (2) College of Hydraulic and Hydropower, Xi'an University of Technology, Xi'an, 710048, China
Abstract: Flow characteristics of horizontal two-phase gas-liquid stratified flows in condensate natural gas pipeline are studied through both air-water and air-natural gas condensate experiments on the large-scale multiphase experimental loop. Based on measurement and observation of flow pattern, "apparent rough surface" (ARS) model is selected to calculate frictional pressure gradient with gas-liquid momentum balance equations. The predictions of the models

are compared with the data measured in the experiment. Some results of pressure gradient are obtained, so ARS interfacial shape is recommended in horizontal two-phase gas-liquid flows with low liquid loading. © (2012) Trans Tech Publications, Switzerland. (8 refs)
Main heading: Flow patterns
Controlled terms: Aerodynamics - Friction - Natural gas pipelines - Natural gas - Liquids - Thermal stratification - Hydrodynamics - Pressure gradient - Gases - Air
Uncontrolled terms: ARS interfacial shape - Friction pressure gradient - Low liquid loading - Stratified flows - Two-phase gas-liquid flow
Classification Code: 522 Gas Fuels - 619.1 Pipe, Piping and Pipelines - 631.1 Fluid Flow, General - 651.1 Aerodynamics, General - 804 Chemical Products Generally - 944.4 Pressure Measurements
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

209. Study on the pipeline wax deposition mechanism and influencing factors

Xiao, Rongge (1, 2); Wei, Bingqian (1); Yao, Peifen (2); Yi, Dongrui (2)
Source: *Advanced Materials Research*, v 516-517, p 1018-1021, 2012, *Electrical Power and Energy Systems*; **ISSN:** 10226680; **ISBN-13:** 9783037854150; **DOI:** 10.4028/www.scientific.net/AMR.516-517.1018; **Conference:** 1st International Conference on Energy and Environmental Protection, ICEEP 2012, June 23, 2012 - June 24, 2012; **Publisher:** Trans Tech Publications
Author affiliation: (1) College of Hydraulic and Hydropower, Xi'an University of Technology, Xi'an, 710048, China (2) College of Petroleum Engineering, Xi'an Shiyou University, Xi'an, 710065, China
Abstract: The phenomenon of wax deposition is an extremely important issue in the petroleum industry. Researching it is of great help for the oil exploration, gathering, and transportation. This paper described the phenomenon of wax deposition, discussed the mechanism, analyzed the influencing factors and proposed the positive significance of the phenomenon of wax deposition on crude oil production and safe operation in oil gathering and transportation pipeline. © (2012) Trans Tech Publications. (5 refs)
Main heading: Mechanisms
Controlled terms: Petroleum industry - Crude oil - Petroleum transportation - Pipelines - Deposition
Uncontrolled terms: Crude oil production - Influencing factor - Oil exploration - Oil gathering and transportations - Safe operation - Wax deposition
Classification Code: 512.1 Petroleum Deposits - 601.3 Mechanisms - 619.1 Pipe, Piping and Pipelines - 802.3 Chemical Operations
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

210. A new interwell tracer technology - Particle tracer technology

Liu, Yifei (1, 2); Fang, Xiaodan (1, 2)
Source: *Advanced Materials Research*, v 415-417, p 1744-1748, 2012, *Advanced Materials*; **ISSN:** 10226680; **ISBN-13:** 9783037853252; **DOI:** 10.4028/www.scientific.net/AMR.415-417.1744; **Conference:** 2nd International Conference on Advances in Materials and Manufacturing Processes, ICAMMP 2011, December 16, 2011 - December 18, 2011; **Sponsor:** University of Wollongong; Northeastern University; University of Science and Technology Beijing; Hebei Polytechnic University; **Publisher:** Trans Tech Publications
Author affiliation: (1) Xi'an Shiyou University, 710065, China (2) W. Low Permeability and Ultra-low Permeability Reservoir Devmt. and Treatm. Eng. Research Center, Ministry of Education, 710065, China
Abstract: Fracture is the main factor to control seepage of fractured low permeability reservoir, which is more and more respected in the oilfield development. It will be one of the key factors in fractured low permeability reservoir that recognizes and describes correctly the geometric dimension and direction of the fracture. The article was done in the paper through the principle and characteristics of the particle tracer technology, analyzes the screening condition, introduces the injecting technology, monitors in the locale and creates an analytic method of particle tracer. The technology will provide a new method to determine the geometry and direction of the fracture of fractured low permeability reservoir, and will offer new approach to oilfield dynamic description. (3 refs)
Main heading: Fracture
Controlled terms: Low permeability reservoirs - Petroleum reservoir engineering - Seepage
Uncontrolled terms: Analytic method - Geometric dimensions - Heterogeneity - Interwell tracer technology - Key factors - Low permeability - Tracer technology

Classification Code: 512.1 Petroleum Deposits - 512.1.2 Petroleum Deposits : Development Operations - 951 Materials Science
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

211. Application of dynamic data mining and case-based reasoning in the drilling fault diagnosis

Li, Qi (1); Zhai, Peng (1); Zhao, Yunli (2)
Source: *Advanced Materials Research*, v 524-527, p 1350-1354, 2012, *Natural Resources and Sustainable Development II*; **ISSN:** 10226680; **ISBN-13:** 9783037854174; **DOI:** 10.4028/www.scientific.net/AMR.524-527.1350; **Conference:** 1st International Conference on Energy and Environmental Protection, ICEEP 2012, June 23, 2012 - June 24, 2012; **Publisher:** Trans Tech Publications
Author affiliation: (1) Institute of Petroleum Engineering, Xi'an Shiyou University Shannxi, Xi'an 710065, China (2) China Petroleum Pipeline Inspection Technologies Co., Ltd., Hebei Langfang 065000, China
Abstract: Most of the traditional drilling fault diagnosis & decision systems use static data mining technology, so the update of knowledge base becomes its bottlenecks in its development. In order to meet the actual needs, this paper puts forward the method, which combines dynamic data mining technology with case-based reasoning technology, to design drilling fault diagnosis & decision systems. First, design drilling fault diagnosis system overall, then describe the realization of how to realize dynamic data mining and case-based reasoning in detail, finally, introduce some question about the update of knowledge base. © (2012) Trans Tech Publications. (8 refs)
Main heading: Case based reasoning
Controlled terms: Failure analysis - Knowledge based systems - Fault detection - Data mining
Uncontrolled terms: Data mining technology - Decision systems - Dynamic data mining - Fault diagnosis systems - Knowledge base
Classification Code: 723.2 Data Processing and Image Processing - 723.4.1 Expert Systems
Database: Compendex
Data Provider: Engineering Village
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212. Analysis on the pull strength's calculation method during the construction of oil pipeline directional drilling crossing the yellow river and improvement

Xu, Shi-Qi (1); Luo, Bin (2); Cheng, Jun (2); Hu, Yuan-Tai (2)
Source: *Proceedings of the 2012 Symposium on Piezoelectricity, Acoustic Waves and Device Applications, SPAWDA 2012*, p 402-407, 2012, *Proceedings of the 2012 Symposium on Piezoelectricity, Acoustic Waves and Device Applications, SPAWDA 2012*; **Language:** Chinese; **ISBN-13:** 9781467348164; **DOI:** 10.1109/SPAWDA.2012.6464119; **Article number:** 6464119; **Conference:** 2012 Symposium on Piezoelectricity, Acoustic Waves and Device Applications, SPAWDA 2012, November 23, 2012 - November 25, 2012; **Sponsor:** Acoustic Society of China (ASC); Chinese Society of Theoretical and Applied Mechanics (CSTAM); IEEE Ultrason., Ferroelectr., Freq. Control Soc. (UFFC-S); **Publisher:** IEEE Computer Society
Author affiliation: (1) College of Petroleum Engineering, Xi'An Shiyou University, Xi'an 710065, China (2) Department of Mechanics, Huazhong University of Science and Technology, Wuhan 430074, China
Abstract: This paper reviewed the methods, which calculate the pull strength during directional drilling crossing construction of oil pipeline, both at home and aboard. And based on the analysis of these methods, the detailed research was given. At the same time, considering the peculiarity of this channel geologic structure and the technological requirements, the method, averaged standard method and unloading arch method, was given to calculate the maximal pull strength. It is practiced that, this method is instructive and meaningful to the directional drilling crossing construction. © 2012 IEEE.
Main heading: Directional drilling
Controlled terms: Petroleum pipelines - Unloading - Trenching
Uncontrolled terms: Geologic structures - Oil pipelines - Pull strength - Yellow river
Classification Code: 511.1 Oil Field Production Operations - 619.1 Pipe, Piping and Pipelines - 691.2 Materials Handling Methods
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

213. Ecological environment issue in the western oil-gas resources development

Liu, Yifei (1, 2); Chen, Longlong (1, 2)
Source: *Advanced Materials Research*, v 347-353, p 218-224, 2012, *Renewable and Sustainable Energy*; **ISSN:** 10226680; **ISBN-13:** 9783037852651; **DOI:** 10.4028/www.scientific.net/AMR.347-353.218; **Conference:** 2011 International Conference on Energy, Environment and Sustainable Development, ICEESD 2011, October 21, 2011 - October 23, 2011; **Publisher:** Trans Tech Publications
Author affiliation: (1) Xi'an Shiyou University, 710065, China (2) W. Low Permeability and Ultra-Low Permeability Reservoir Devmt., Treatm. Eng. Res. Ctr. of Min. of Educ., 710065, China
Abstract: In the western China, since special geographical condition, vulnerable ecological environment and environment pollution from oil development, the regional economic society suffers from dire threats. For a long time, the local economic development walks along the same path that "treatment after pollution, recovery after damage". In order to economic development, many governments pay a little attention at environment. So, the ecological environment must be taken attention to protect and the west oil companies must undertake the society obligation and protect the environment during the domestic oil resources strategic shift from east to west. In this article, the effects on ecological environment from oil development of northwest oilfields were analyzed, and the reasonable measures were put forward to protect the vulnerable environment. © (2012) Trans Tech Publications, Switzerland. (3 refs)
Main heading: Pollution
Controlled terms: Economic and social effects - Oil field development - Regional planning - Economics - Environmental protection - Sustainable development - Energy resources
Uncontrolled terms: Development - Domestic oil - Ecological environments - Economic development - Environment pollution - Geographical conditions - Local economic development - Oil companies - Oil resource - West - Western China
Classification Code: 403.2 Regional Planning and Development - 454.2 Environmental Impact and Protection - 512.1.2 Petroleum Deposits : Development Operations - 525.1 Energy Resources and Renewable Energy Issues - 971 Social Sciences
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

214. Numerical simulation on impact of building density on urban heat island with an urban porous media model

Li, Tiantian (1); Yu, Bingfeng (1); Hu, Zhangbao (1); Chen, Zhi (2)
Source: *Hsi-An Chiao Tung Ta Hsueh/Journal of Xi'an Jiaotong University*, v 46, n 6, p 134-138, June 2012;
Language: Chinese; **ISSN:** 0253987X; **Publisher:** Xi'an Jiaotong University
Author affiliation: (1) School of Energy and Power Engineer, Xi'an Jiaotong University, Xi'an 710049, China (2) Institute of Petroleum Engineering, Xi'an Shiyou University, Xi'an 710065, China
Abstract: According to the urban spatial structure and the similarity of the porous media, a two-dimensional model for the turbulent flow and heat transfer in a city was derived from the porous media theory. The urban porous media model was verified by comparing the numerical results with the volume-averaged results of the micro-scale CFD model. Moreover, the urban porous media model was applied to examine the effects of building density on the spatial UHI of the urban area and the leeward rural area. The results show that an increase in ground porosity by 0.1 leads to an increase in UHI intensity by 0.36 K and the UHI intensity decreases rapidly as the airflow enters the leeward rural area. The UHI intensity decreases linearly as the height increases and the UHI almost vanishes as the height reaches five times the height of the urban canopy. (12 refs)
Main heading: Rural areas
Controlled terms: Computational fluid dynamics - Porosity - Numerical models - Heat transfer - Atmospheric temperature - Porous materials
Uncontrolled terms: Building densities - Flow and heat transfer - Heat island - Numerical results - Porous media theory - Two dimensional model - Urban heat island - Urban spatial structures
Classification Code: 443.1 Atmospheric Properties - 641.2 Heat Transfer - 723.5 Computer Applications - 921 Mathematics - 931.1 Mechanics - 931.2 Physical Properties of Gases, Liquids and Solids - 951 Materials Science
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

215. Study on tool wear of indexable coating inserts for turning inconel 718

Liu, Zhanfeng (1); Peng, Lin (1); Lv, Zhongdong (2)

Source: *Advanced Materials Research*, v 583, p 259-262, 2012, *Advanced Composite Materials and Manufacturing Engineering*; **ISSN:** 10226680; **ISBN-13:** 9783037855225; **DOI:** 10.4028/www.scientific.net/AMR.583.259;
Conference: 2012 International conference on Advanced Composite Materials and Manufacturing Engineering, CMME 2012, October 13, 2012 - October 14, 2012; **Sponsor:** Wuhan institute of technology; Beijing Material Research Center; International Material Research Society, Hong Kong; **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Mechanical Engineer, Xi'an Shiyou University, Xi'an, Shaanxi(710065), China (2) Jianhu Xian Petroleum Machinery Instiute, Jianhu, Jiangsu(224700), China
Abstract: The cutting experiment for nickel-based supper alloy Inconel 718 was performed by using two different coated inserts, which studied the wear morphology and wear mechanism of the tools and analyzed the effect on tool life from different coating. The results showed that when continuous cutting is performed under same cutting conditions, the capability of WSM10 to resist oxidation and adhesive is higher than TS2000, and the tool life of WSM10 is longer than TS2000. The reason why WSM10 has a better cutting performance than TS2000 is related to the coating material. Comparing with the TiN coating of TS2000 surface, the A1203 coating of WSM10 surface has a higher hardness, better chemical stability and oxidation resistance capability. The study provides a useful reference for the selection of cutting tools which used for machining Inconel 718. © (2012) Trans Tech Publications, Switzerland. (4 refs)
Main heading: Cutting tools
Controlled terms: Chemical stability - Nickel alloys - Oxidation resistance - Nickel coatings - Wear of materials
Uncontrolled terms: Coating material - Coating tool - Cutting conditions - Cutting experiment - Cutting performance - Inconel-718 - Machining Inconel 718 - TiN coating - Tool life - Tool wear - Wear mechanisms - Wear morphology
Classification Code: 539.1 Metals Corrosion - 548.2 Nickel Alloys - 603.2 Machine Tool Accessories - 801 Chemistry - 802.2 Chemical Reactions - 813.2 Coating Materials - 931.2 Physical Properties of Gases, Liquids and Solids - 951 Materials Science
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

216. Hoop membrane stress analysis of elbow-pipe under single internal pressure

Li, Xiao Hong (1)
Source: *Applied Mechanics and Materials*, v 130-134, p 1785-1788, 2012, *Mechanical and Electronics Engineering III*; **ISSN:** 16609336, **E-ISSN:** 16627482; **ISBN-13:** 9783037852866; **DOI:** 10.4028/www.scientific.net/AMM.130-134.1785;
Conference: 2011 3rd International Conference on Mechanical and Electronics Engineering, ICMEE 2011, September 23, 2011 - September 25, 2011; **Sponsor:** Hefei University of Technology; **Publisher:** Trans Tech Publications
Author affiliation: (1) Mechanic Engineering College, Xian Shiyou University, Xi' an 710065, China
Abstract: In the article, a kind of regional force balance method based on plates and shells theories of elastic mechanics are applied to study the hoop membrane stress of the elbow-pipe, while internal pressure is as a single load. By learning the static balance equation #Fx=0 of a micro-region segment of pipe shell, it is found that axial membrane stress σ_1 is perpendicular to x-direction and has no effect to equilibrium condition, here axial stress σ_1 is discussed explicitly. It shows that, the hoop membrane stress #h of the elbow is the times of straight tube's hoop stress. © (2012) Trans Tech Publications, Switzerland. (4 refs)
Main heading: Stress analysis
Controlled terms: Membranes
Uncontrolled terms: Axial stress - Elastic mechanics - Elbow-pipe - Equilibrium conditions - Force balances - Hoop membrane stress - Hoop stress - Internal Pressure - Membrane stress - Pipe shell - Plates and shells - Static balance
Classification Code: 951 Materials Science
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

217. The numerical simulation of flow characteristics in T-type pipe

Zhu, Yuqin (1)
Source: *Advanced Materials Research*, v 542-543, p 1079-1082, 2012, *Automatic Manufacturing Systems II*; **ISSN:** 10226680; **ISBN-13:** 9783037854488; **DOI:** 10.4028/www.scientific.net/AMR.542-543.1079; **Conference:** 2nd International Conference on Advanced Engineering Materials and Technology, AEMT 2012, July 6, 2012 - July 8, 2012; **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Chemistry and Chemical Engineering, Xian Shiyou University, Xian, China
Abstract: The manifolds are flow distribution devices commonly used in the heating furnaces, heat exchangers, reactors, boilers, and so on. The flow distribution uniformity in the manifolds, to a large extent, decides the operation safety and economy of these devices. Manifolds are consisted of a number of T-type pipes, the flow characteristics in

the T-type pipe takes an important role in the flow distribution non-uniformity of manifolds, so flow characteristics in T-type pipes were systematically researched and analyzed by the Fluent simulation software in this paper, exploring the influencing factors such as the inlet mass flow rate on flow distribution non-uniformity, and providing some measures to improve the flow distribution uniformity. © (2012) Trans Tech Publications, Switzerland. (10 refs)
Main heading: Inlet flow
Controlled terms: Automobile engine manifolds - Computer simulation - Computer software
Uncontrolled terms: Flow characteristic - Flow distribution - Flow distribution uniformities - Fluent simulation - Headers - Mass flow rate - Nonuniformity - On flow - Operation safety
Classification Code: 631.1 Fluid Flow, General - 661.2 Automotive Engine Components - 723 Computer Software, Data Handling and Applications - 723.5 Computer Applications
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

218. Panoramic image mosaic method for lateral multi-lens video logging images

Hu, Hongtao (1); Dong, Yonggang (1); Li, Zhouli (2)
Source: *Proceedings of 2012 International Conference on Measurement, Information and Control, MIC 2012*, v 1, p 516-519, 2012, *Proceedings of 2012 International Conference on Measurement, Information and Control, MIC 2012*; **ISBN-13:** 9781457716027; **DOI:** 10.1109/MIC.2012.6273354; **Article number:** 6273354; **Conference:** 2012 International Conference on Measurement, Information and Control, MIC 2012, May 18, 2012 - May 20, 2012; **Publisher:** IEEE Computer Society
Author affiliation: (1) Institute of Computer Science, Xi'an Shiyou University, Xi'an, China (2) Institute of Electronic Engineering, Xi'an Shiyou University, Xi'an, China
Abstract: Isometric serial images of well wall inner surface can be obtained by lateral Multi-lens video logging equipment designed originally by us, a kind of panoramic image mosaic method is presented for panoramic image mosaic, which is based on phase correlation and edge gradient feature. Firstly, identify the registration area of adjacent images, then use phase correlation and edge gradient feature to match the areas twice so as to get accurate mosaic point and mosaic the isometric serial images. Experiment and simulation results show that mosaic accuracy is able to reach pixel level; mosaic time is short; images of well wall inner surface can be mosaiced quickly at real time. © 2012 IEEE. (12 refs)
Uncontrolled terms: Edge gradient - Inner surfaces - Logging equipment - Panoramic images - Phase correlation - Pixel level - Registration area - Serial images
Classification Code: 714.2 Semiconductor Devices and Integrated Circuits
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

219. A distortion correction method of lateral multi-lens video logging image

Hu, Hongtao (1); Zhang, Jingna (1); Li, Zhouli (2)
Source: *CSAE 2012 - Proceedings, 2012 IEEE International Conference on Computer Science and Automation Engineering*, v 2, p 141-144, 2012, *CSAE 2012 - Proceedings, 2012 IEEE International Conference on Computer Science and Automation Engineering*; **ISBN-13:** 9781467300865; **DOI:** 10.1109/CSAE.2012.6272745; **Article number:** 6272745; **Conference:** 2012 IEEE International Conference on Computer Science and Automation Engineering, CSAE 2012, May 25, 2012 - May 27, 2012; **Sponsor:** Central South University; et al.; Hunan University of Humanities, Science and Technology; IEEE Beijing Section; Tongji University; Xiamen University; **Publisher:** IEEE Computer Society
Author affiliation: (1) School of Computer Science, Xi'an ShiYou University, Xi'an, China (2) School of Electronic Engineering, Xi'an ShiYou University, Xi'an, China
Abstract: According to the principle of the acquisition of lateral multi-lens video logging images, the distortion correction method based on camera calibration model is proposed. The proposed method is consisted of two steps. Firstly, space conversion. According to the image model, transform three-dimensional space coordinate into 2D image plane coordinate, establish corresponding relation of distortion image coordinate and image coordinate, find out the corresponding lens distortion parameters and the camera parameters, then work out correction coordinates through the distortion imaging formula based on the camera image model. Secondly, grey correction. On the basis of bilinear interpolation method, compute image pixel value, and achieve the effect of corrected image. The experimental results show that the use of the proposed method makes it possible to correct image distortion with high resolution realize image distortion correction quickly, and improve the image accuracy. © 2012 IEEE. (10 refs)
Main heading: Interpolation

Controlled terms: Cameras - Image enhancement
Uncontrolled terms: Bilinear interpolation - Bilinear interpolation method - Camera calibration - Corresponding relations - Image distortion corrections - Image distortions - Lens distortion parameters - Multi-lens
Classification Code: 742.2 Photographic Equipment - 921.6 Numerical Methods
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

220. Reconstruction of panoramic image through fusion of sequential lateral multi-lens logging images

Hu, Hongtao (1); Lin, Xia (1); Li, Zhouli (2)
Source: *2012 IEEE International Conference on Information and Automation, ICIA 2012*, p 334-337, 2012, *2012 IEEE International Conference on Information and Automation, ICIA 2012*; **ISBN-13:** 9781467322386; **DOI:** 10.1109/ICInfA.2012.6246872; **Article number:** 6246872; **Conference:** 2012 IEEE International Conference on Information and Automation, ICIA 2012, June 6, 2012 - June 8, 2012; **Publisher:** IEEE Computer Society
Author affiliation: (1) School of Computer Science, Xi'an ShiYou University, Xi'an, China (2) School of Electronic Engineering, Xi'an ShiYou University, Xi'an, China
Abstract: The original well wall images are a set of sequential isometric images taken by a lateral multi-lens video logging tool. How to make one panoramic mosaic logging image from these images is a challenge. In this paper, wavelet transform image fusion method is proposed though computation of the overlap region of sequential images. The proposed method is consisted of three steps, i.e. multiresolution decomposition of the original logging images, determination of wavelet fusion coefficients by the overlap regions and making a panoramic mosaic image through inverse reconstruction of decomposed images. The following experiment shows the proposed method solves the issue of discontinuity of mosaic image edge gray and the fusion panoramic image demonstrates a better visual effect. © 2012 IEEE. (9 refs)
Main heading: Image fusion
Controlled terms: Image reconstruction - Inverse problems - Image compression - Wavelet decomposition
Uncontrolled terms: Image fusion methods - Multi resolution decomposition - Multi-lens - Multiresolution - Panoramic images - Panoramic mosaic image - Sequential images - Wavelet fusion
Classification Code: 723.2 Data Processing and Image Processing - 921.3 Mathematical Transformations
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

221. Extract AutoCAD bom into access with visual C#.Net

Yuguang, Fan (1); Hao, Ye (1); Jidong, Zhao (2); Sanping, Zhou (1); Bing, Chen (1); Hongxian, Lin (1)
Source: *IET Conference Publications*, v 2012, n 636 CP, 2012, *IET International Conference on Information Science and Control Engineering 2012, ICISCE 2012*; **ISBN-13:** 9781849196413; **DOI:** 10.1049/cp.2012.2384; **Article number:** 2384; **Conference:** IET International Conference on Information Science and Control Engineering 2012, ICISCE 2012, December 7, 2012 - December 9, 2012; **Publisher:** Institution of Engineering and Technology
Author affiliation: (1) College of Mechanical Engineering, Xi'an Shiyou University, Xi'an, Shaanxi, 710065, China (2) College of Computing, Xi'an Shiyou University, Xi'an, Shaanxi, 710065, China
Abstract: This paper introduces the method of how to use VC#.Net to extract the BOM of AutoCAD engineering drawings and save it to Access database that based on the AutoCAD secondary development. And give the key source program of C#, the developed software package on the basis of this method already has gotten a good application in practice. (9 refs)
Main heading: Application programs
Controlled terms: Computer aided design
Uncontrolled terms: Access - ACCESS database - AutoCad - Engineering drawing - Extract cad BOM - Secondary development - VC#.Net - Visual C
Classification Code: 723 Computer Software, Data Handling and Applications - 723.5 Computer Applications
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

222. Programming model for offshore platforms site selection

Yuan, Shibao (1)

Source: *Advanced Materials Research*, v 361-363, p 360-363, 2012, *Natural Resources and Sustainable Development*; **ISSN:** 10226680; **ISBN-13:** 9783037852682; **DOI:** 10.4028/www.scientific.net/AMR.361-363.360; **Conference:** 2011 International Conference on Energy, Environment and Sustainable Development, ICEESD 2011, October 21, 2011 - October 23, 2011; **Publisher:** Trans Tech Publications
Author affiliation: (1) Xi'an Shiyou University, Xi'an, China
Abstract: The construction of offshore oil and gas development platform is a system engineering with enormous cost, in order to make rational use of limited resources to achieve maximum economic benefits, based on the industrial site selection problem and with the analyses of decision variable in the process of offshore platforms site selection decision-making, Objective function and the Constraint condition a Bi-level Programming Model Of offshore platforms Site selection with a stochastic oil price are set up. According to the characteristics of the model, an adaptive genetic algorithm to solve the problems and a tabu search algorithm to solve the lower planning are designed to improve the Optimize efficiency and effect of the model. With the Optimize of the process, the problems such as Platform deliverability of the process of offshore oil platforms site, Cost, Optimal distribution of resources and so on are successfully resolved. © (2012) Trans Tech Publications, Switzerland. (8 refs)
Main heading: Decision making
Controlled terms: Genetic algorithms - Drilling platforms - Site selection - Stochastic systems - Problem solving - Stochastic models - Cost engineering - Rational functions - Tabu search
Uncontrolled terms: Adaptive genetic algorithms - Bi-level programming - Bilevel programming models - Constraint conditions - Decision variables - Deliverability - Economic benefits - Industrial sites - Objective functions - Off shore platforms - Offshore oil - Offshore oil platform - Oil Prices - Optimal distributions - Optimize efficiency - Platform - Programming models - Selection problems - Tabu search algorithms
Classification Code: 511.2 Oil Field Equipment - 674.2 Marine Drilling Rigs and Platforms - 731.1 Control Systems - 911 Cost and Value Engineering; Industrial Economics - 912.2 Management - 921 Mathematics - 921.5 Optimization Techniques - 922.1 Probability Theory - 961 Systems Science
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

223. Study of the oil production equipment maintenance information system architecture

Fang, Ming (1); Ma, Long (2)
Source: *Advances in Intelligent and Soft Computing*, v 133 AISC, p 405-412, 2012, *Frontiers in Computer Education*; **ISSN:** 18675662; **ISBN-13:** 9783642275517; **DOI:** 10.1007/978-3-642-27552-4_57; **Conference:** 2011 International Conference on Frontiers in Computer Education, ICFCE 2011, December 1, 2011 - December 2, 2011; **Publisher:** Springer Verlag
Author affiliation: (1) School of Computer, Xi'An Shiyou University, Xi'an, Shanxi 710065, China (2) School of Economics and Management, Xi'An Shiyou University, Xi'an, Shanxi 710065, China
Abstract: The traditional oil enterprise production equipment management information systems do not analysis and design from the enterprise information architecture. They are difficult to realize information sharing and system integration. In this paper, we combined the concept of the enterprise information system architecture and proposed a model of oil production equipment maintenance management information system architecture. By using of the SOA technology, we constructed the model of oil production equipment maintenance software architecture based on the SOA and the data information architecture. The system architecture can effectively enhance integration, maintainability, adaptability and data information sharing of the system from the whole consideration of enterprise information system architecture. © 2012 Springer-Verlag GmbH Berlin Heidelberg. (7 refs)
Main heading: Information management
Controlled terms: Information systems - Information use - Maintenance - Management information systems - Computer architecture - Information analysis - Information dissemination
Uncontrolled terms: Data information sharing - Enterprise information architectures - Enterprise information system - Enterprise production - Equipment maintenance - Information sharing - Oil production - System architectures
Classification Code: 723.2 Data Processing and Image Processing - 903.1 Information Sources and Analysis - 903.2 Information Dissemination - 903.3 Information Retrieval and Use - 913.5 Maintenance
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

224. Corrosion fatigue crack propagation of an aluminum alloy under periodic overloads

Wang, R. (1); Zheng, X. (2)

Source: *Fatigue and Fracture of Engineering Materials and Structures*, v 35, n 5, p 389-398, May 2012; **ISSN:** 8756758X, **E-ISSN:** 14602695; **DOI:** 10.1111/j.1460-2695.2011.01630.x; **Publisher:** Blackwell Publishing Ltd
Author affiliation: (1) School of Materials Science and Engineering, Xi'An Shiyou University, 710065 Xi'an, China (2) School of Science, Xi'An Shiyou University, 710065 Xi'an, China
Abstract: Periodic tensile overloads superposed on constant amplitude cycles were used on compact tension fracture mechanics specimens of an aluminum (Al-Cu-Mg) alloy. The delayed retardation of corrosion fatigue crack propagation in the low part of the Paris regime was investigated in a 3.5% NaCl environment. The aluminum alloy exhibits the intensive retardation effect of crack propagation under overload ratios from 1.3 to 2.0 and overload intervals from 102 to 104 cycles. The crack propagation under the periodic overloads can be treated as the base constant amplitude crack propagation, i.e. (da/dN)cf=Bcf(#K-#Kthcf) 2. The periodic overloads decrease the crack propagation resistance coefficient of Bcf, but have less effect on the threshold value of #Kthcf obtained by best fitting of this model. © 2011 Blackwell Publishing Ltd. (23 refs)
Main heading: Fatigue crack propagation
Controlled terms: Aluminum alloys - Copper alloys - Corrosion fatigue - Sodium chloride - Aluminum corrosion - Magnesium alloys - Ternary alloys - Copper corrosion
Uncontrolled terms: Compact tension - Constant amplitude - Crack propagation resistance - Overload ratio - Periodic overloads - Retardation effect - Tensile overload - Threshold-value
Classification Code: 539.1 Metals Corrosion - 541.1 Aluminum - 541.2 Aluminum Alloys - 542.2 Magnesium and Alloys - 544.1 Copper - 544.2 Copper Alloys - 549.2 Alkaline Earth Metals
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

225. Wellbore section contribution in fractured horizontal openhole wells (SPE 153326)

Zhou, D. (1); Yuan, H. (2)
Source: *74th European Association of Geoscientists and Engineers Conference and Exhibition 2012 Incorporating SPE EUROPEC 2012: Responsibly Securing Natural Resources*, p 1724-1735, 2012; **ISBN-13:** 9781629937908;
Conference: 74th European Association of Geoscientists and Engineers Conference and Exhibition 2012 Incorporating SPE EUROPEC 2012: Responsibly Securing Natural Resources, June 4, 2012 - June 7, 2012; **Sponsor:** Dong Energy; et al.; ExxonMobil; Maersk Oil; Shell; Statoil; **Publisher:** European Association of Geoscientists and Engineers, EAGE
Author affiliation: (1) Xi'An Shiyou University, China (2) IHS Inc., China
Abstract: More and more horizontal wells are completed as openhole and fractured with multistage fractures. The question is what is the contribution of the openhole section to total production in a fractured horizontal openhole well? Based on actual production data of a horizontal well before and after multistage fracturing, combining the data from a cemented casing horizontal well nearby, the paper analyzes popular horizontal and fractured horizontal well correlations first, and then presents a new inflow performance model accounting both the horizontal openhole section and the fractures of horizontal wells. Data from 13 fractured horizontal openhole wells were used to check the presented model. The paper can be used to study the inflow performance of a horizontal gas well, and to check how much the horizontal openhole section contributes in a fractured well. The presented analyses can also be used to determine fracture numbers and weather to use openhole or cemented casing completion. For a fractured horizontal openhole well, both wellbore and fractures contribute to the total production of the well. Openhole length, fracture number and the ratio of horizontal to vertical permeability are the major control factors. The producing part from the wellbore section is less than that from widely used horizontal models (like JoshiC""s). The more the fractures are, the less the openhole section contribution is. The model can be used for horizontal wells with or without fractures. The presented new model gives better results for authors 13 wells. Previous fractured horizontal well models overestimate the production from the wellbore, and underestimate the production from the fractures. The paper presents the change of fluid flow direction due to hydraulic fractures into the wellbore. (15 refs)
Main heading: Fracture
Controlled terms: Horizontal wells - Oil field equipment - Oil wells - Flow of fluids - Hydraulic fracturing
Uncontrolled terms: Casing completion - Control factors - Fractured horizontal wells - Horizontal gas wells - Horizontal models - Inflow performance - Multistage fracturing - Vertical permeabilities
Classification Code: 511.2 Oil Field Equipment - 512.1.1 Oil Fields - 512.1.2 Petroleum Deposits : Development Operations - 631.1 Fluid Flow, General - 951 Materials Science
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

226. Scheme optimization for Seismograph recognition and multifold seismic data rolling acquisition experiment

Shen, Hong-Yan (1); Yan, Yue-Ying (2)
Source: *Lecture Notes in Electrical Engineering*, v 155 LNEE, p 265-271, 2012, *Advances in Electric and Electronics*; **ISSN:** 18761100, **E-ISSN:** 18761119; **ISBN-13:** 9783642287435; **DOI:** 10.1007/978-3-642-28744-2_33; **Conference:** 2012 2nd International Conference on Electric and Electronics, EEIC 2012, April 21, 2012 - April 22, 2012; **Publisher:** Springer Verlag
Author affiliation: (1) School of Petroleum Resources, Xi'an Shiyou University, Xi'an, Shannxi Province, 710065, China (2) State-owned Property Division, Xi'an Shiyou University, Xi'an, Shannxi Province, 710065, China
Abstract: Classroom teaching is the theory teaching, and is the basic mode and method of knowledge teaching. Experiment is the previous examination for the application of knowledge entrusts. Only organic combination teaching with both classroom teaching and practice teaching, can make students to understand knowledge spots and master knowledge profoundly, thus achieve the goal of flexible application. This paper carries on the teaching scheme of "Seismograph recognition and multifold seismic data rolling acquisition experimen" optimization, and uses in one participating teaching, has made a good teaching progress. © 2012 Springer-Verlag GmbH. (5 refs)
Main heading: Teaching
Controlled terms: Students - Data acquisition - Seismic response - Seismic waves
Uncontrolled terms: Classroom teaching - Practice teachings - Seismic data acquisitions - Seismic exploration - Seismograph recognition
Classification Code: 484 Seismology - 484.2 Secondary Earthquake Effects - 723.2 Data Processing and Image Processing
Funding Details: Number: 2010D- 5006-0303, Acronym: -, Sponsor: -; Number: SGH0902247, Acronym: -, Sponsor: -;
Funding text: This work is supported by CNPC Innovation Foundation (No.2010D- 5006-0303) and Education Science "Eleventh Five-year Plan" Project in Shaanxi Province of China (SGH0902247).
Database: Compendex
Data Provider: Engineering Village
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227. A novel inner small-caliber detection method based the template matching algorithm

Jia, Huiqin (1); Wang, Shengzhe (1); Zhang, Ru (1)
Source: *Proceedings - 2012 International Conference on Computer Science and Information Processing, CSIP 2012*, p 303-306, 2012, *Proceedings - 2012 International Conference on Computer Science and Information Processing, CSIP 2012*; **ISBN-13:** 9781467314114; **DOI:** 10.1109/CSIP.2012.6308854; **Article number:** 6308854; **Conference:** 2012 International Conference on Computer Science and Information Processing, CSIP 2012, August 24, 2012 - August 26, 2012; **Sponsor:** 'IEEE Xi'an Section'; 'Xi'an Technological University'; Missouri Western State University; Natl. New Netw. Monit. Control Eng. Lab.; **Publisher:** IEEE Computer Society
Author affiliation: (1) Xi'An Shiyou University, Xi'an 710065, China
Abstract: The inner small-caliber detection is important in most cases such as oil-pipe and gun. because in most cases, it must detect the rust and crack.This paper aims at the inner test for small caliber, and present a small volume structures.This system consist of two parts: the front image acquisition part, which uses the method of grin-lens array combined the light-cone to realize the photoelectric conversion and digitalization,the functions of the last part is to process the image acquisition part. The characteristics of this image is obtained by the template matching method, which is realized under Matlab programming platform, now this method is used to detect the inner gun, and obtained the satisfactory results. © 2012 IEEE. (10 refs)
Main heading: Image acquisition
Controlled terms: Photoelectricity - MATLAB - Template matching
Uncontrolled terms: Detection methods - GRIN lens - Matlab programming - Oil pipes - Optical methods - Photoelectric conversion - Template matching method - Template-matching algorithms
Classification Code: 701.1 Electricity: Basic Concepts and Phenomena - 723 Computer Software, Data Handling and Applications - 723.5 Computer Applications - 741.1 Light/Optics - 921 Mathematics
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

228. Optimization and control researches into the cooling system of pneumatic disc brake

Duan, Zhengyong (1); Peng, Yong (1); Wu, Heng (1)
Source: *Advanced Materials Research*, v 479-481, p 1414-1420, 2012, *Advanced Mechanical Design*; **ISSN:** 10226680; **ISBN-13:** 9783037853726; **DOI:** 10.4028/www.scientific.net/AMR.479-481.1414; **Conference:** 3rd

international Conference on Manufacturing Science and Engineering, ICMSE 2012, March 27, 2012 - March 29, 2012; **Sponsor:** Fujian University of Technology; Xiamen University; Fuzhou University; Huaqiao University; University of Wollongong; **Publisher:** Trans Tech Publications
Author affiliation: (1) Xi'an Shiyou University, Shaanxi Xi'an, China
Abstract: Some problems involved in the cooling and control system of a pneumatic disc brake are presented in this paper. The selection foundation of the friction torque is deduced when do strength check and thermal analysis to the brake. The heat transfer conditions when the brake safely works on the worst braking condition is investigated also; to propose that the coefficient of rib of the friction plate be more than 3.6. In addition, the control system of the brake is discussed. In terms of the design of the brake, for the cooling and control system, the parameters including the angular speed and torque of the shaft of the drawworks, the temperatures of the coolant at the inlet and the outlet, the pressure of the compressed air need to be monitored or controlled. © (2012) Trans Tech Publications. (11 refs)
Main heading: Brakes
Controlled terms: Thermoanalysis - Thermoelectric equipment - Control systems - Friction - Cooling systems - Compressed air - Cooling - Pneumatics
Uncontrolled terms: Angular speed - Braking conditions - Disc brakes - Friction plate - Friction torque - Heat transfer conditions - Optimization and control
Classification Code: 602 Mechanical Drives and Transmissions - 615.4 Thermoelectric Energy - 632.3 Pneumatics - 641.2 Heat Transfer - 731.1 Control Systems - 801 Chemistry
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

229. Multi-objective optimization method for borehole trajectory design of directional well

Zhang, Jian Bing (1); Liu, Xin (1); Lv, Xiang Hong (1)
Source: *Applied Mechanics and Materials*, v 152-154, p 816-819, 2012, *Mechanical Engineering and Materials: ICMEM 2012*; **ISSN:** 16609336, **E-ISSN:** 16627482; **ISBN-13:** 9783037853528; **DOI:** 10.4028/www.scientific.net/AMM.152-154.816; **Conference:** 2012 International Conference on Mechanical Engineering and Materials, ICMEM 2012, January 15, 2012 - January 16, 2012; **Publisher:** Trans Tech Publications
Author affiliation: (1) Xi'an ShiYou University, Xi'an, Shaanxi, China
Abstract: To offer those who are engaged in oil development a multi-objective design method of borehole trajectory for a directional well, the author adopted optimization theory to build a multi-objective optimization mathematic model with the shortest trajectory, the lowest drill string torque and the minimum rig hook load as final objectives, and put forward an approach to seek effective solutions to these multi-objective programming problems with ideal point method. The approach proposed in the paper can help satisfy concurrently multiple objectives of drilling design for an oilfield to implement the multi-objective optimization design schemes of borehole trajectory for a directional well, and to reduce the oilfield development costs accordingly. © (2012) Trans Tech Publications. (2 refs)
Main heading: Multiobjective optimization
Controlled terms: Site selection - Design - Drill strings - Trajectories
Uncontrolled terms: Borehole trajectories - Directional well - Drill strings - Effective solution - Final objective - Ideal points - Mathematic model - Multi objective - Multi-objective design - Multi-objective programming problem - Multiple objectives - Optimization design - Optimization method - Optimization theory
Classification Code: 511.2 Oil Field Equipment - 921.5 Optimization Techniques
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

230. Fatigue analysis of the drill string according to multiaxial stress

Zhang, Jian Bing (1); Lv, Xiang Hong (1)
Source: *Advanced Materials Research*, v 418-420, p 993-996, 2012, *Materials Processing Technology*; **ISSN:** 10226680; **ISBN-13:** 9783037853269; **DOI:** 10.4028/www.scientific.net/AMR.418-420.993; **Conference:** 2nd International Conference on Advances in Materials and Manufacturing, ICAMMP 2011, December 16, 2011 - December 18, 2011; **Sponsor:** University of Wollongong; Northeastern University; University of Science and Technology Beijing; Hebei Polytechnic University; **Publisher:** Trans Tech Publications
Author affiliation: (1) Xi'an ShiYou University, Xi'an, Shaanxi, China
Abstract: To find out the cause for fatigue failure of a drill string used in oil field drilling, and considering the actual working conditions, axial, radial and circumferential cyclic stresses borne by the drill string in borehole of oil and gas well, fatigue strength of drill string is analyzed based on multi-axial fatigue assessment method. Then the formula to calculate the mean stress of multi-axial load of the drill string is obtained, and the formula serves as a method to

calculate multi-axial fatigue life of the drill string, which has been verified through field data. It is realized that multi-axial stress has significant influence on drill string fatigue. When on drill string fatigue, Soderberg equation shall be employed to calculate the stress amplitude of drill string fatigue. © (2012) Trans Tech Publications, Switzerland. (2 refs)
Main heading: Drills
Controlled terms: Oil fields - Oil well drilling - Fatigue of materials - Drill strings
Uncontrolled terms: Cyclic stress - Drill strings - Fatigue analysis - Fatigue failure - Fatigue failures - Fatigue strength - Field data - Mean stress - Multi-axial fatigue - Multiaxial stress - Oil and gas well - Oil field drilling - Soderberg - Stress amplitudes - Working conditions
Classification Code: 511.2 Oil Field Equipment - 512.1.1 Oil Fields - 512.1.2 Petroleum Deposits : Development Operations - 603.2 Machine Tool Accessories - 951 Materials Science
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

231. Microstructure of flame-spray welded ni-based alloy coating and base metal

Li, Xiao (1); Zhou, Haobin (1); Chen, Bing (2)
Source: *Applied Mechanics and Materials*, v 117-119, p 1662-1665, 2012, *Materials and Computational Mechanics*; **ISSN:** 16609336, **E-ISSN:** 16627482; **ISBN-13:** 9783037852804; **DOI:** 10.4028/www.scientific.net/AMM.117-119.1662; **Conference:** 2011 International Conference on Applied Mechanics, Materials and Manufacturing, ICAMMM 2011, November 18, 2011 - November 20, 2011; **Publisher:** Trans Tech Publications
Author affiliation: (1) Key Research Lab for Material Forming, Xi'an Shiyou University, Xi'an, Shannxi, 710065, China (2) Mechanical Eengineering Department, Xi'an Shiyou University, Xi'an, Shannxi, 710065, China
Abstract: One-step spray welding process was used to deposit Ni60 Ni-based self-fluxing alloy coating on 35CrMo wedge disc. According to different microstructure characters the cross-section of spray-welded specimen can be divided into three areas: spray welded coating, transition region and base metal. For the influence of welding thermo, base metal shows pearlite area, incomplete recrystallized area and original pearlite+ferrite area, the hardness of which is between 200HV to 165HV. The hardness of coating is about 865HV, which ensure good wear resistance. Because of the particles incomplete packing and the viscidity of melted metal, micro cavities formed near transition region and combine to form cavity chains, which will decrease the wear resistance and corrosion resistance of coating. © (2012) Trans Tech Publications. (4 refs)
Main heading: Microstructure
Controlled terms: Chromium alloys - Wear resistance - Corrosion resistant coatings - Hardness - Metal cladding - Molybdenum alloys - Nickel alloys - Sprayed coatings - Flame spraying - Binary alloys - Corrosion resistance - Metals
Uncontrolled terms: Base metals - Ni based alloy - Ni-based alloy coatings - Ni-based self-fluxing alloys - Transition regions - Welding process
Classification Code: 539.1 Metals Corrosion - 539.2 Corrosion Protection - 543.1 Chromium and Alloys - 543.3 Molybdenum and Alloys - 548.2 Nickel Alloys - 813.1 Coating Techniques - 813.2 Coating Materials - 817.2 Polymer Applications - 931.2 Physical Properties of Gases, Liquids and Solids - 951 Materials Science
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

232. Influence of back pressure on testing starting pressure gradient in low permeability gas field

Yan, Jian (1); Liu, Xiaojuan (1)
Source: *Advanced Materials Research*, v 524-527, p 1460-1464, 2012, *Natural Resources and Sustainable Development II*; **ISSN:** 10226680; **ISBN-13:** 9783037854174; **DOI:** 10.4028/www.scientific.net/AMR.524-527.1460; **Conference:** 1st International Conference on Energy and Environmental Protection, ICEEP 2012, June 23, 2012 - June 24, 2012; **Publisher:** Trans Tech Publications
Author affiliation: (1) Xi'an Shiyou University, Xi'an, 710065, China
Abstract: For the existence of formation water, the capillary force increases when the gas flow in the cores, so the flow may display starting pressure gradient. However, during the lab testing, sometimes it is found that the starting pressure gradient changes in different test conditions: when the outlet pressure is atmosphere, only the water saturation reaches critical value (S w)c, the quasi starting pressure exists; but when the outlet pressure is not atmosphere; it is easy to find the quasi staring pressure in the same water saturation. And the quasi starting pressure under the later condition is larger than that in former condition. It is also found that the quasi starting pressures are both power function to the ratio

of core coefficient and water saturation. The experimental results provide some theoretical references for recognizing the flow characteristics in low permeability gas reservoirs. © (2012) Trans Tech Publications. (6 refs)
Main heading: Pressure gradient
Controlled terms: Natural gas fields - Low permeability reservoirs - Gas industry - Gas permeability - Gases - Flow of gases - Petroleum reservoir engineering
Uncontrolled terms: Back pressures - Capillary force - Critical value - Flow characteristic - Formation water - Gas fields - Gas slippage - Gradient change - Low permeability - Low permeability gas reservoirs - Outlet pressures - Power functions - Starting pressure - Test condition - Water saturations
Classification Code: 512.1 Petroleum Deposits - 512.1.2 Petroleum Deposits : Development Operations - 512.2.1 Natural Gas Fields - 522 Gas Fuels - 631.1.2 Gas Dynamics - 931.2 Physical Properties of Gases, Liquids and Solids - 944.4 Pressure Measurements
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

233. The development of control system for lowcost automatic welding equipment of aluminum radiator head

Ma, Julian (1); Zhou, Haobin (1); Xu, Xiangqian (1); Wang, Xiaowei (1)
Source: *Applied Mechanics and Materials*, v 485, p 12-15, 2012, *Advanced Research on Material Engineering and Its Application*; **ISSN:** 16609336, **E-ISSN:** 16627482; **ISBN-13:** 9783037853740; **DOI:** 10.4028/www.scientific.net/AMR.485.12; **Conference:** 2012 2nd International Conference on Information Science, Automation and Material System, ISAM 2012, April 21, 2012 - April 22, 2012; **Sponsor:** International Science and Education Researcher Association (ISER); Beijing Gireida Education Research Center; VIP-Information Conference Center; **Publisher:** Trans Tech Publications
Author affiliation: (1) Xi'an Shiyou University, Xi'an 710065, China
Abstract: Considering the characteristic of welding process for all-aluminum radiator and meeting the needs of Chinese production site, low-cost automatic welding equipment for aluminum radiator head has been designed, and this paper focuses on its electrical controls. The microkernel of main control board is C8051F020. Based on this board the subsystems for the entire piece of this equipment has been established, which include LCD,automatic welding, manual operation, welding parameters setting ,etc. Through trial runs of the machine, it indicates that the design of the electrical controls for the equipment is rational, full-featured, and works reliably and efficiently. And the quality of welding is well. © (2012) Trans Tech Publications, Switzerland. (5 refs)
Main heading: Aluminum
Controlled terms: Radiators
Uncontrolled terms: Automatic welding - Electrical control - Main control board - Manual operations - Production sites - Single-chip - Welding parameters - Welding process
Classification Code: 541.1 Aluminum - 616.1 Heat Exchange Equipment and Components
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

234. The development of control system for lowcost automatic welding equipment of aluminum radiator head

Ma, Julian (1); Zhou, Haobin (1); Xu, Xiangqian (1); Wang, Xiaowei (1)
Source: *Advanced Materials Research*, v 485, p 12-15, 2012, *Advanced Research on Material Engineering and Its Application*; **ISSN:** 10226680; **ISBN-13:** 9783037853740; **Conference:** 2012 2nd International Conference on Information Science, Automation and Material System, ISAM 2012, April 21, 2012 - April 22, 2012; **Sponsor:** International Science and Education Researcher Association (ISER); Beijing Gireida Education Research Center; VIP-Information Conference Center; **Publisher:** Trans Tech Publications
Author affiliation: (1) Xi'an Shiyou University, Xi'an 710065, China
Abstract: Considering the characteristic of welding process for all-aluminum radiator and meeting the needs of Chinese production site, low-cost automatic welding equipment for aluminum radiator head has been designed, and this paper focuses on its electrical controls. The microkernel of main control board is C8051F020. Based on this board the subsystems for the entire piece of this equipment has been established, which include LCD,automatic welding, manual operation, welding parameters setting ,etc. Through trial runs of the machine, it indicates that the design of the electrical controls for the equipment is rational, full-featured, and works reliably and efficiently. And the quality of welding is well. © (2012) Trans Tech Publications, Switzerland. (5 refs)
Main heading: Aluminum

Controlled terms: Radiators
Uncontrolled terms: Automatic welding - Electrical control - Main control board - Manual operations - Production sites - Single-chip - Welding parameters - Welding process
Classification Code: 541.1 Aluminum - 616.1 Heat Exchange Equipment and Components
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

235. Development on inverter control system of smart pumping unit based on self-learning feature

Ma, Julian (1); Zhou, Haobin (1); Xu, Xiangqian (1)
Source: *Advanced Materials Research*, v 524-527, p 1161-1165, 2012, *Natural Resources and Sustainable Development II*; **ISSN:** 10226680; **ISBN-13:** 9783037854174; **DOI:** 10.4028/www.scientific.net/AMR.524-527.1161; **Conference:** 1st International Conference on Energy and Environmental Protection, ICEEP 2012, June 23, 2012 - June 24, 2012; **Publisher:** Trans Tech Publications
Author affiliation: (1) Xi'an Shiyou University, Xi'an 710065, China
Abstract: For the enormous potential of beam pumping unit's energy saving, the frequency energy-saving control system of smart pumping unit with the function of self-learning has been developed on the basis of advanced technology and methods both in the domestic and abroad. The application of frequency converter not only has solved the impact problem at startup, but also improved the power factor significantly. For the solution to the shortage of oil wells, the system is to sample the parameters of Motor unit continuously under the conditions of relatively original and the conditions of normal working. The working liquid level as object to be controlled, the system is to adjust the liquid withdrawal rate to be sure the ability to match with the fluid through VVVF, and then a better energy-saving effect be obtained. The application of practical operation shows that the system can run efficiently and realize energy saving of the pumping. © (2012) Trans Tech Publications. (6 refs)
Main heading: Energy conservation
Controlled terms: Control systems - Electric inverters - Pumping plants - Pumps
Uncontrolled terms: Advanced technology - Beam pumping unit - Energy-saving control - Energy-saving effect - Impact problem - Inverter - Inverter control - Motor unit - Power factors - Pumping unit - Self-learning - Withdrawal rate - Working liquid
Classification Code: 446 Waterworks - 525.2 Energy Conservation - 618.2 Pumps - 731.1 Control Systems
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

236. Joint inversion of HRDL and HRDI with site applications at the Qaidam Basin of western China

Liu, Zhenhua (1); Cheng, Zhigang (2); Wu, Jie (1); Zhang, Jianhua (1)
Source: *Journal of Petroleum Science and Engineering*, v 94-95, p 73-78, September 2012; **ISSN:** 09204105; **DOI:** 10.1016/j.petrol.2012.06.019; **Publisher:** Elsevier B.V.
Author affiliation: (1) Xian Shiyou University, Xian 710065, China (2) China Petroleum Logging Co. Ltd., Xian 710021, China
Abstract: A joint inversion algorithm was suggested for high-resolution dual induction device and a new high-resolution dual laterolog tool. The combination log using these high-resolution logging devices not only modifies the behaviors of conventional logging tools and provides much reliable information of reservoirs for inversion techniques, but also makes the joint inversion possible. Generalized inversion method was used to construct the present three-parameter joint inversion algorithm to obtain true-formation resistivity, depth of invaded zone, and resistivity of invaded zone simultaneously. The joint inversion introduced less deviation than single high-resolution dual laterolog inversion or single high-resolution dual induction inversion. Joint inversion also enhanced the accuracy and stability of inversion results so that the joint inversion results are much more helpful for log analysts to evaluate reservoirs. The present algorithm has been successfully applied for the site logging interpretation at Qaidam Basin in western China. © 2012 Elsevier B.V. (14 refs)
Uncontrolled terms: Conventional logging - Formation resistivity - Generalized inversion - Induction log - Inversion techniques - Joint inversion - Laterolog - Logging interpretation
Classification Code: 409 Civil Engineering, General - 481 Geology and Geophysics - 512.1.2 Petroleum Deposits : Development Operations - 701.1 Electricity: Basic Concepts and Phenomena
Database: Compendex
Data Provider: Engineering Village

Compilation and indexing terms, Copyright 2023 Elsevier Inc.

237. Performance evaluation of SHY-99 coating for carbon steel water-cooler

Chen, Bing (1); Li, Xiao (2); Fan, Yuguang (1)
Source: *Advanced Materials Research*, v 399-401, p 1886-1889, 2012, *New Materials, Applications and Processes*; **ISSN:** 10226680; **ISBN-13:** 9783037853092; **DOI:** 10.4028/www.scientific.net/AMR.399-401.1886; **Conference:** 2011 International Conference on Chemical, Material and Metallurgical Engineering, ICCMME 2011, December 23, 2011 - December 25, 2011; **Sponsor:** Guangxi University; Wuhan University of Science and Technology; Queensland University of Technology; **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Mechanical Engineering, Xi'an Shiyou University, Xi'an, Shannxi, 710065, China (2) Key Research Lab for Material Forming, Xi'an Shiyou University, Xi'an, Shannxi, 710065, China
Abstract: Special SHY-99 anti-corrosion coatings are used for newly developed heat exchange equipment, to resist corrosion and leakage problem of carbon steel water-cooler. The anti-corrosion properties of coatings were examined with routine test methods, Scanning Electron Microscope (SEM), electro kinetic potential polarization curve method and immersion testing method. The results show that physical properties of coatings are in accordance with national standards, the microstructures of coatings are uniform and tight, the coatings are combined tightly with base metal, and the coatings show excellent corrosion resistance in water of water cooling system. (4 refs)
Main heading: Corrosion resistance
Controlled terms: Scanning electron microscopy - Testing - Water cooling systems - Cooling water - Corrosion resistant coatings - Steel corrosion - Carbon steel - Corrosive effects
Uncontrolled terms: Anti-corrosion coating - Anti-corrosion property - Base metals - Electro-kinetics - Evaluation - Excellent corrosion resistances - Heat exchange - Immersion testing - Leakage problems - National standard - Performance evaluation - Polarization curves - Properties of coatings - Scanning electron microscopes - Test method - Water-cooler
Classification Code: 539.1 Metals Corrosion - 539.2 Corrosion Protection - 545.3 Steel - 616.1 Heat Exchange Equipment and Components
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

238. Computer simulation for viscous fingering occurred in a Hele-Shaw cell

Luo, Jun (1); Zhang, Jianhua (1)
Source: *Lecture Notes in Electrical Engineering*, v 125 LNEE, n VOL. 2, p 659-664, 2012, *Recent Advances in Computer Science and Information Engineering*; **ISSN:** 18761100, **E-ISSN:** 18761119; **DOI:** 10.1007/978-3-642-25789-6_88; **Conference:** 2009 11th IEEE International Conference on e-Health Networking, Applications and Services, Healthcom 2009, December 16, 2009 - December 18, 2009; **Publisher:** Springer Verlag
Author affiliation: (1) Science College, Xi'an Shiyou University, Xi'an, China
Abstract: The viscous fingering that occurred in a Hele-Shaw cell was simulated using a modified DLA model with sticking probability on off-lattices. The present computer algorithm can also simulate the morphological evolution of viscous fingering from skeletal patterns to fleshy patterns. Both the shapes and the fractal dimension of fractal clusters can be obtained and they are in good agreement with experiments. The present work indicates that the effective fractal dimension of viscous fingering decreases and the corresponding morphologies of finger growth vary from a fleshy pattern with great fractal dimension to a skeletal pattern with low fractal dimension for decreasing model parameter A or increasing model parameter B. © 2012 Springer-Verlag GmbH. (9 refs)
Main heading: Fractal dimension
Controlled terms: Software engineering - Soft computing
Uncontrolled terms: DLA model - Fractal clusters - Hele-Shaw cells - Model parameters - Morphological evolution - Off-lattices - Sticking probability - Viscous fingering
Classification Code: 723 Computer Software, Data Handling and Applications - 723.1 Computer Programming - 921 Mathematics - 921.4 Combinatorial Mathematics, Includes Graph Theory, Set Theory
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

239. The coal chemical industry and technology innovation service system research review

Si, Xunlian (1); Song, Shuxia (1)
Source: *Advanced Materials Research*, v 396-398, p 1164-1169, 2012, *Advances in Chemical Engineering*; **ISSN:** 10226680; **ISBN-13:** 9783037853085; **DOI:** 10.4028/www.scientific.net/AMR.396-398.1164; **Conference:** 2011

International Conference on Chemical, Material and Metallurgical Engineering, ICCMME 2011, December 23, 2011 - December 25, 2011; **Sponsor:** Guangxi University; Wuhan University of Science and Technology; Queensland University of Technology; **Publisher:** Trans Tech Publications
Author affiliation: (1) Xi'An Shiyou University, Xi'an shaanxi 710065, China
Abstract: The vaporization and liquefied coal has important value to answer oil crisis for us, in technological chain support ,The coal chemical industry chain extension dependent on coal chemical industry innovation service system construction. In this paper,the author settled the coal chemical industry and technological innovation service system construction of research and development present situation, puts forward a ultimate extension of the technological chain is mature coal gasification technology, in industry chain the core industry is coal gas industry in the future,While improving the coal chemical industry innovation service system can effectively support technological chain the realization of the goal technique, also can promote the formation of the core industry chain. (16 refs)
Main heading: Chemical industry
Controlled terms: Coal industry - Coal - Coal gasification - Chains - Engineering research
Uncontrolled terms: Coal chemicals - Gasification technologies - Important value - Industry chain - Oil crisis - Present situation - Research and development - Research review - Service systems - Technological innovation - Technology innovation
Classification Code: 503 Mines and Mining, Coal - 522 Gas Fuels - 524 Solid Fuels - 602.1 Mechanical Drives - 805 Chemical Engineering, General - 901.3 Engineering Research
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

240. Petroleum instrument fault analysis based on the Data Mining fault dictionary method

Jia, Huiqin (1)
Source: *Applied Mechanics and Materials*, v 128-129, p 942-945, 2012, *Measuring Technology and Mechatronics Automation IV*; **ISSN:** 16609336, **E-ISSN:** 16627482; **ISBN-13:** 9783037852842; **DOI:** 10.4028/www.scientific.net/AMM.128-129.942; **Conference:** 4th International Conference on Measuring Technology and Mechatronics Automation, ICMTMA 2012, January 6, 2012 - January 7, 2012; **Sponsor:** Hunan University of science and Technology; Changsha University of Science and Technology; Huan instrument and Control Society; **Publisher:** Trans Tech Publications
Author affiliation: (1) Xi'An Shiyou University, Xi'an, Shannxi 710065, China
Abstract: Oil plays an important role in national economy, and petroleum instrument is used to detect or acquire oil. But because now the functions of instrument are too complex, only which have work experience in this area more years can use it skillfully. Once the instrument is fault in work state, often using phone, but usually, the fault is difficult to describe, and so the work efficiency is influenced. A fault dictionary method is used to solve the problems about oil petroleum instrument and the knowledge organization and representation methods and relevant reasoning for fault diagnosis is presented in this paper. And the fault classification method uses Data Mining-method, which can easily classify the fault. And the above design method is realized using virtual instrument technology under the LabVIEW platform, and all the fault information is stored in the database, which uses the SQL server 2005 platform. Now this system uses in the field, when the instrument maintenance engineer input the fault keywords, then the information about the petroleum instrument such as fault phenomenon, solving method and fault place is disappeared in the list table. These systems uses very convenient, which are an auxiliary method to instrument maintenance engineer, and help them quickly locate the fault place. (7 refs)
Main heading: Data mining
Controlled terms: Digital instruments - Fault detection
Uncontrolled terms: Design method - Fault analysis - Fault classification - Fault dictionary - Knowledge organization - LabViEW - Maintenance engineers - National economy - Representation method - Solving method - SQL Server 2005 - System use - Virtual instrument - Virtual instrument technology - Work efficiency - Work experience
Classification Code: 723.2 Data Processing and Image Processing
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

241. NC grinder sliding-table component design for face gear

Bao, Zefu (1); Jiang, Yazhou (1); Wang, Jiangping (1)
Source: *Advanced Materials Research*, v 429, p 83-87, 2012, *Manufacturing Systems Engineering*; **ISSN:** 10226680; **ISBN-13:** 9783037852774; **DOI:** 10.4028/www.scientific.net/AMR.429.83; **Conference:** 2011 International Symposium

on Manufacturing Systems Engineering, ISMSE 2011, September 17, 2011 - September 18, 2011; **Sponsor:** Hong Kong Education Technology Society; **Publisher:** Trans Tech Publications
Author affiliation: (1) Xian Petroleum University, Shaanxi, China
Abstract: Face gear drive, a new type of gear , is meshed by a cylindrical gear and a bevel gear. It has many unique advantages. Especially in high-speed and heavy-load situation, it has obvious advantages and wide application in the aviation field of power transmission. But the surface gear's major object is low productivity, processing and complex machine tools, adjustment difficulties, high processing costs. Based on this, briefly discussed the status of face gear drive and needs further study, the author proposes a butterfly gear grinding wheel becomes the grinding face gear's theory and the processing method, the author elaborated the numerically-controlled machine tool realizes the surface gear grinding processing method, and has carried on the reasonable choice and the examination to the numerical control gear grinding machine's horizontal sliding table major component (ball screw). © (2012) Trans Tech Publications. (3 refs)
Main heading: Machine tools
Controlled terms: Ball screws - Bevel gears - Grinding (machining) - Numerical methods
Uncontrolled terms: Ball screws - Complex machines - Component design - Cylindrical gear - Face gear drive - Face gears - Gear grinding - High-speed - Numerical control - Processing costs - Processing method - Validation
Classification Code: 601.2 Machine Components - 603.1 Machine Tools, General - 604.2 Machining Operations - 732.1 Control Equipment - 921.6 Numerical Methods
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

242. The flow characteristics analysis of transonic around delta-wing to separate water from natural gas

Wang, Junqi (1); Zhang, Yangyang (1)
Source: *Advanced Materials Research*, v 462, p 26-32, 2012, *Material Science and Engineering Technology*; **ISSN:** 10226680; **ISBN-13:** 9783037853610; **DOI:** 10.4028/www.scientific.net/AMR.462.26; **Conference:** 2011 International Conference on Material Science and Engineering Technology, ICMSET 2011, November 11, 2011 - November 13, 2011; **Sponsor:** Int. Assoc. Comput. Sci. Inf. Technol.; **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Petroleum Engineering, Xi'an Shiyou University, China
Abstract: The changes in flow channel area and convergence-expanding nozzle help to flow rate of natural gas to the sound speed, also increase diameter to accelerate flow velocity and finally reach transonic flow condition. At this point, the temperature drop makes saturated water in natural gas condenses into droplets, generates swirl around the delta-wing, realize gas-water separation. This paper concentrates on Flent6.1 software process gas flow around a delta wing simulation, explains expansion angle and attack angle of delta-wing, determines a reasonable delta-wing attack angle is 10°, pipeline expansion angle is 0.29°, and obtains velocity vector, mach number, total pressure, static temperature and other flow field details of the attack angle and expansion angle, which lay foundation for production and application of the technology. © (2012) Trans Tech Publications, Switzerland. (8 refs)
Main heading: Flow velocity
Controlled terms: Natural gas - Expansion - Channel flow - Flow of gases - Gases - Application programs
Uncontrolled terms: Attack angle - Delta wings - Flow - Flow channels - Flow characteristic - Gas-water - Process - Saturated water - Simulation - Software process - Sound speed - Static temperature - Temperature drops - Total pressure - Transonic - Velocity vectors
Classification Code: 522 Gas Fuels - 631 Fluid Flow - 631.1 Fluid Flow, General - 631.1.2 Gas Dynamics - 723 Computer Software, Data Handling and Applications - 943.2 Mechanical Variables Measurements - 951 Materials Science
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

243. Research of knowledge integration based on semantic web for drilling risk management

Xu, Yingzhuo (1)
Source: *Communications in Computer and Information Science*, v 307 CCIS, n PART 1, p 738-746, 2012, *Information Computing and Applications - Third International Conference, ICICA 2012, Proceedings*; **ISSN:** 18650929; **ISBN-13:** 9783642340376; **DOI:** 10.1007/978-3-642-34038-3_102; **Conference:** 3rd International Conference on Information Computing and Applications, ICICA 2012, September 14, 2012 - September 16, 2012; **Sponsor:** Chengde

Petroleum College; Hunan Institute of Engineering; National Science Foundation of China; Northeastern University at Qinhuangdao; Yanshan University; **Publisher:** Springer Verlag
Author affiliation: (1) Institute of Computer, Xi'an Shiyou University, Xi'an, China
Abstract: Focusing on the practical difficulties of sharing and application risk management knowledge resources due to the distributed and heterogeneous characteristics in today's drilling industry, integration methods as well as key technology and retrieval applications of drilling risk management knowledge were studied by introducing the semantic web technology. Based on the field characteristics and requirements for the sharing of drilling risk knowledge, ontology was selected as the knowledge representation method, establishing a drilling risk knowledge ontology. A framework system supporting the risk knowledge integration based on semantic web was constructed, thereby realizing seamless knowledge integration on the semantics level. On the basis of the ontology model, a prototype of knowledge semantic retrieval system was developed. Finally, an example of knowledge retrieval analysis was provided, with results demonstrating that the retrieval method established in the new system can improve the recall ratio more effectively than the traditional method of keyword retrieval. © 2012 Springer-Verlag. (10 refs)
Main heading: Ontology
Controlled terms: Knowledge representation - Risk management - Information retrieval - Integration - Semantic Web
Uncontrolled terms: Drilling risk managements - Heterogeneous characteristic - Knowledge integration - Knowledge representation method - Knowledge retrieval - Retrieval applications - Risk management knowledge - Semantic Web technology
Classification Code: 723 Computer Software, Data Handling and Applications - 723.4 Artificial Intelligence - 903 Information Science - 903.3 Information Retrieval and Use - 921.2 Calculus
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

244. Research on method of ontology-based knowledge representation and integration for drilling risk decision

Xu, Yingzhuo (1)
Source: *International Journal of Digital Content Technology and its Applications*, v 6, n 16, p 274-281, September 2012; **ISSN:** 19759339, **E-ISSN:** 22339310; **DOI:** 10.4156/jdcta.vol6.issue16.33; **Publisher:** Advanced Institute of Convergence Information Technology
Author affiliation: (1) Institute of Computer, Xi'an Shiyou University, Xi'an, China
Abstract: To meet the need of knowledge sharing for drilling risk decision-making, focusing on the practical difficulties of sharing and reusing risk decision knowledge resources due to the distributed, heterogeneous and organization nonstandard characteristics in today's petroleum drilling industry, using the advantages of ontology in knowledge acquisition and modeling, etc., a set of ontology-based knowledge representation and integration methods of drilling risk decision-making were studied and constructed. By analyzing the structure of knowledge resources in the field of risk decision-making, designed a risk knowledge representation model based on ontology, established the drilling risk knowledge ontology. By adopting Enterprise Service Bus (ESB) technology and the way of mixed ontologies, constructed the architecture of risk knowledge integration, and developed a prototype system of knowledge integration, realizing seamless integration of distributed and heterogeneous knowledge on the structure and semantic level. On the basis of above, implemented semantic retrieval of knowledge by using Jena inference engine, moreover, through the analysis of a concrete example of knowledge retrieval, and the results of the example demonstrated that the semantic retrieval method can improve the recall ratio of knowledge more effectively than traditional retrieval methods. All of them provide a high-efficiency knowledge sharing and application support for drilling risk decision making. (16 refs)
Main heading: Ontology
Controlled terms: Integration - Decision making - Knowledge management - Information retrieval - Knowledge representation - Semantics
Uncontrolled terms: Drilling risk decision makings - Enterprise service bus - Heterogeneous Knowledge - Knowledge integration - Risk decision making - Seamless integration - Semantic retrieval - Structure of knowledge
Classification Code: 723.4 Artificial Intelligence - 723.5 Computer Applications - 903.3 Information Retrieval and Use - 912.2 Management - 921.2 Calculus
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

245. Development and realization of bag filter on-line monitoring system based on AC charge induction

Xue, Zhaomei (1)

Source: *Advanced Materials Research*, v 383-390, p 7740-7745, 2012, *Manufacturing Science and Technology*; **ISSN:** 10226680; **ISBN-13:** 9783037852958; **DOI:** 10.4028/www.scientific.net/AMR.383-390.7740; **Conference:** 2011 International Conference on Manufacturing Science and Technology, ICMST 2011, September 16, 2011 - September 18, 2011; **Sponsor:** Singapore Institute of Electronics; **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Electronic Engineering, Xi'an Shiyou University, Xi'an, China
Abstract: The bag filter is a kind of important de-dusting equipment in the power, metallurgy, chemical and building materials industry. Its operation efficiency and running state are two technical indexes of great importance. As for detection of the two indexes, current existing detection methods have various defects. This paper mainly introduces a bag filter on-line monitoring system based on AC charge induction. By using the international advanced AC charge-coupling technology and digital signal processing technology, it can accurately monitor the bag breaking state of filter and put out alarm. In the bag filter on-line monitoring process, the system well solves the technique difficulties of the measuring equipment in such aspects as anti-blocking, wear resistance, low pressure losses, accuracy and reliability, etc. It has the advantages of high measuring accuracy and easy installation and maintenance, therefore, it can bring certain economic benefits and have the prospect of popularization and application. (6 refs)
Main heading: Digital signal processing
Controlled terms: Bandpass filters - Wear resistance - Monitoring
Uncontrolled terms: Bag filters - Broken bag detection - Building materials industry - Charge coupling - Detection methods - Digital signals - Dust removal - Economic benefits - Low pressures - Measuring accuracy - Measuring equipments - On-line monitoring system - Online monitoring - Operation efficiencies
Classification Code: 703.2 Electric Filters - 931.2 Physical Properties of Gases, Liquids and Solids
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

246. Development and realization of air flow on-line monitoring system in utility boiler based on AC induction

Xue, Zhaomei (1)
Source: *Advanced Materials Research*, v 383-390, p 4831-4836, 2012, *Manufacturing Science and Technology*; **ISSN:** 10226680; **ISBN-13:** 9783037852958; **DOI:** 10.4028/www.scientific.net/AMR.383-390.4831; **Conference:** 2011 International Conference on Manufacturing Science and Technology, ICMST 2011, September 16, 2011 - September 18, 2011; **Sponsor:** Singapore Institute of Electronics; **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Electronic Engineering, Xi'an Shiyou University, Xi'an, China
Abstract: Combustion control is the most important aspect in boiler unit operation, while the boiler air flow monitoring is the main content of combustion monitoring. Therefore, real-time and accurate online monitoring of the air flow in boiler main and branch pipes is of great importance for the economy, safety and environmental protection of the boiler combustion. This paper mainly introduces an air flow on-line monitoring system in utility boiler based on AC induction. By using the international advanced AC charge-coupling technology and digital signal processing technology, it overcomes the present technique difficulties of air flow on-line monitoring system. It has the advantages of high measuring accuracy and easy installation and maintenance. Also, it is applicable to the air flow on-line monitoring in different types of air ducts, therefore, it can bring certain economic benefits and have the prospect of popularization and application. (6 refs)
Main heading: Boilers
Controlled terms: Digital signal processing - Monitoring - Air - Combustion - Voltage measurement
Uncontrolled terms: AC induction - Air ducts - Air flow - Boiler air flow - Boiler combustion - Boiler units - Branch pipes - Charge coupling - Charge induction - Combustion control - Combustion monitoring - Digital signals - Economic benefits - Measuring accuracy - On-line monitoring system - Online monitoring - Utility boiler
Classification Code: 614 Steam Power Plants - 804 Chemical Products Generally - 942.2 Electric Variables Measurements
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

247. On the structure of the multigranulation rough set model

She, Yanhong (1); He, Xiaoli (1)
Source: *Knowledge-Based Systems*, v 36, p 81-92, December 2012; **ISSN:** 09507051; **DOI:** 10.1016/j.knosys.2012.05.019; **Publisher:** Elsevier B.V.
Author affiliation: (1) College of Science, Xi'An Shiyou University, Xi'an 710065, China

Abstract: The original rough set model, i.e., Pawlak's single-granulation rough set model has been extended to a multigranulation rough set model, where two kinds of multigranulation approximations, i.e., the optimistic and pessimistic approximations were introduced. In this paper, we consider some fundamental properties of the multigranulation rough set model, and show that Both the collection of lower definable sets and that of upper definable sets in the optimistic multigranulation rough set model can form a lattice, such lattices are not distributive, not complemented and pseudo-complemented in the general case. The collection of definable sets in the optimistic multigranulation rough set model does not even form a lattice in general conditions.The collection of (lower, upper) definable sets in the optimistic multigranulation rough set model forms a topology on the universe if and only the optimistic multigranulation rough set model is equivalent to Pawlak's single-granulation rough set model.In the context of the pessimistic multigranulation rough set model, the collections of three different kinds of definable sets coincide with each other, and they determine a clopen topology on the universe, furthermore, they form a Boolean algebra under the usual set-theoretic operations. © 2012 Elsevier B.V. All rights reserved. (40 refs)
Main heading: Topology
Controlled terms: Approximation algorithms - Rough set theory - Boolean algebra - Granulation
Uncontrolled terms: Fundamental properties - Lattice - Multi-granulations - Multigranulation rough set models - Optimistic multigranulation rough sets - Pawlak's single-granulation rough set models - Pessimistic multigranulation rough sets - Set-theoretic operations
Classification Code: 721.1 Computer Theory, Includes Formal Logic, Automata Theory, Switching Theory, Programming Theory - 802.3 Chemical Operations - 921 Mathematics - 921.1 Algebra - 921.4 Combinatorial Mathematics, Includes Graph Theory, Set Theory
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

248. Study of energy-saving control in oil pumping units based on DTC technology

Xue, Zhaomei (1)
Source: *Advanced Materials Research*, v 433-440, p 7119-7124, 2012, *Materials Science and Information Technology, MSIT2011*; **ISSN:** 10226680; **ISBN-13:** 9783037853191; **DOI:** 10.4028/www.scientific.net/AMR.433-440.7119;
Conference: 2011 International Conference on Material Science and Information Technology, MSIT2011, September 16, 2011 - September 18, 2011; **Sponsor:** Singapore Institute of Electronics; **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Electronic Engineering, Xi'an Shiyou University, Xi'an, China
Abstract: The pumping unit is the main pumping equipment in the oil field. However, there widely exist such defects as low pumping efficiency, high energy consumption, much time and great efforts consumption in stroke adjustment etc. in the current pumping unit, resulting in serious waste of energy. Some energy-saving technologies in pumping units have been developed, but the effects are not quite good. Aiming at this situation, this paper introduces a new type of motor control theory - Direct Torque Control. By controlling the stator voltage, the technology achieves the direct control of the motor torque. Meanwhile, with the combination of the motor running condition of pumping units, study of energy-saving control based on DTC technology is carried out. It turns out that the energy-saving effect is significant according to the application and test results of the energy-saving control device in the oil field. Therefore, the control device can bring certain economic benefits and have the value of popularization and application. © (2012) Trans Tech Publications, Switzerland. (6 refs)
Main heading: Energy conservation
Controlled terms: Pumping plants - Pumps - Torque control - Induction motors - Energy utilization
Uncontrolled terms: Control device - Direct control - Direct torque control - Economic benefits - Energy-saving control - Energy-saving effect - Energy-saving technologies - High energy consumption - Motor control theories - Motor torque - Oil pumping unit - Pumping efficiency - Pumping equipment - Pumping unit - Pumping well - Running conditions - Stator voltages
Classification Code: 446 Waterworks - 525.2 Energy Conservation - 525.3 Energy Utilization - 618.2 Pumps - 705.3.1 AC Motors - 731.3 Specific Variables Control
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

249. Topological properties of the pessimistic multigranulation rough set model

She, Yanhong (1); He, Xiaoli (1)
Source: *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, v 7414 LNAI, p 474-481, 2012, *Rough Sets and Knowledge Technology - 7th International Conference, RSKT 2012, Proceedings*; **ISSN:** 03029743, **E-ISSN:** 16113349; **ISBN-13:** 9783642318993;

DOI: 10.1007/978-3-642-31900-6_58; **Conference:** 7th International Conference on Rough Sets and Knowledge Technology, RSKT 2012, August 17, 2012 - August 20, 2012; **Sponsor:** et al.; International Rough Set Society; Rough Sets and Soft Computation Society; Southwest Jiaotong University; University of Regina; University of Warsaw; **Publisher:** Springer Verlag
Author affiliation: (1) College of Science, Xi'an Shiyou University, Xi'an 710065, China
Abstract: Multigranulation rough set theory is a newly proposed mathematical tool for dealing with inexact, uncertain or vague information. This paper concerns the topological properties of pessimistic multigranulation rough sets. It is shown that the collection of definable sets in pessimistic rough set model determines a clopen topology on the universe. Furthermore, it forms a Boolean algebra under the usual set-theoretic operations. © 2012 Springer-Verlag. (31 refs)
Main heading: Topology
Controlled terms: Boolean algebra - Rough set theory
Uncontrolled terms: Definable sets - Mathematical tools - Multi-granulation rough sets - Pessimistic multigranulation rough sets - Rough set models - Set-theoretic operations - Topological properties
Classification Code: 721.1 Computer Theory, Includes Formal Logic, Automata Theory, Switching Theory, Programming Theory - 921.1 Algebra - 921.4 Combinatorial Mathematics, Includes Graph Theory, Set Theory
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

250. Application of Hough Transform in lateral multi-lens video logging image segmentation

Hu, Hongtao (1); Li, Zhouli (1)
Source: *ICALIP 2012 - 2012 International Conference on Audio, Language and Image Processing, Proceedings*, p 817-821, 2012, *ICALIP 2012 - 2012 International Conference on Audio, Language and Image Processing, Proceedings*; **ISBN-13:** 9781467301718; **DOI:** 10.1109/ICALIP.2012.6376726; **Article number:** 6376726; **Conference:** 2012 3rd IEEE/IET International Conference on Audio, Language and Image Processing, ICALIP 2012, July 16, 2012 - July 18, 2012; **Publisher:** IEEE Computer Society
Author affiliation: (1) School of Computer Science, Xi'an ShiYou University, Xi'an, China
Abstract: Hough Transform is a well-known effective method for circle detection. However, Hough Transform requires massive storage space and huge cost in computation time. For the purpose of real-time image segmentation during lateral multi-lens video logging, this paper presents an algorithm for quick circle detection based on Hough Transform. The proposed method is consisted of three sequential steps. First, a chain code of the targeting image is computed by boundary detection method. Secondly, a candidate circle is determined by picking three points from the chain code following a certain rule. Finally, the candidate circle is identified by referring to the available radius. The following experiments show the proposed algorithm can effectively solve the issues of Hough Transform, i.e. small storage space and less computation time. What is more, more than one circle could be identified in the targeting image. © 2012 IEEE. (9 refs)
Main heading: Hough transforms
Controlled terms: Chains - Codes (symbols) - Feature extraction - Image segmentation
Uncontrolled terms: Boundary detection method - Certain rule - Chain codes - Circle detection - Computation time - Massive storages - Real time image segmentation - Storage spaces
Classification Code: 602.1 Mechanical Drives - 723.2 Data Processing and Image Processing - 921.3 Mathematical Transformations
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

251. Experimental research on ultrasonic vibration turning of finish machining technology

Zhu, Lin (1); Nan, Yingfei (1)
Source: *Advanced Materials Research*, v 503-504, p 718-722, 2012, *Frontiers of Manufacturing Science and Measuring Technology II*; **ISSN:** 10226680; **ISBN-13:** 9783037854044; **DOI:** 10.4028/www.scientific.net/AMR.503-504.718; **Conference:** 2012 2nd International Conference on Frontiers of Manufacturing Science and Measuring Technology, ICFMM 2012, June 12, 2012 - June 13, 2012; **Sponsor:** Control Engineering and Information Science Research Association; Int. Front. Sci. Technol. Res. Assoc.; Trans Tech Publications; Chin-Yi University of Technology; **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Mechanical Engineering, Xi'an Shiyou University, Xi'an, China
Abstract: The finish machining test is using the ultrasonic vibration turning, and a lot of experimental researches have done on the factors which influence the finishing surface roughness, It is determined a reasonable cutting parameters

by comparing test and orthogonal test, analyzed some of the factors which influence the surface quality, and made a test analysis and verification for promoting the use of finishing technology of ultrasonic vibration turning, and in the same time analyzes the superiority and regularity of finish machining technology using ultrasonic turning. © (2012) Trans Tech Publications. (4 refs)
Main heading: Surface roughness
Controlled terms: Vibration analysis - Turning - Ultrasonic effects - Ultrasonic waves
Uncontrolled terms: Cutting parameters - Experimental research - Finish machining - Finishing technology - Orthogonal test - Test analysis - Ultrasonic vibration
Classification Code: 604.2 Machining Operations - 753.1 Ultrasonic Waves - 931.2 Physical Properties of Gases, Liquids and Solids
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

252. Stress analysis of internal wall worn casing string under uniform earth pressure based on ANSYS

Cao, Yinping (1); Dou, Yihua (1); Yu, Yang (1)
Source: *Applied Mechanics and Materials*, v 152-154, p 912-919, 2012, *Mechanical Engineering and Materials: ICMEM 2012*; **ISSN:** 16609336, **E-ISSN:** 16627482; **ISBN-13:** 9783037853528; **DOI:** 10.4028/www.scientific.net/AMM.152-154.912; **Conference:** 2012 International Conference on Mechanical Engineering and Materials, ICMEM 2012, January 15, 2012 - January 16, 2012; **Publisher:** Trans Tech Publications
Author affiliation: (1) College of Mechanical Engineering, Xi'an Shiyou University, Xi'an, China
Abstract: Wear of casing string is a common phenomenon in the process of oil and gas exploitation, and it reduces collapse and burst strength of casing string. Stress of internal wall worn casing string must be analyzed to ensure strength of casing string. In the paper, wear form of casing string is assumed as a crescent-shape, and a half finite element model (FEM) of worn casing string, cement-loop and earth combined system is established using the symmetry. Geometry relationships of wear ratio (or wear depth) and the centre of drill pipe are established. Effects of variables such as wear ratio of casing string, magnification factor of wellbore, elastic modulus of cement-loop and working conditions on casing string stress are discussed respectively. Some conclusions are drawn: maximum stress in casing string increases with increased wear ratio of casing string, and ultimately exceeds the yield limit. Increase of magnification factor of wellbore will improve bearing capacity of casing string, but maximum stress in casing string decreases slower and slower with further increase in magnification factor of casing string, at the same time, stress decreases more in casing string than in cement-loop. Minimum stress in cement-loop increases and maximum stress in cement-loop fluctuates with increased elastic modulus of cement-loop, while both minimum and maximum stress in casing string first increases then decreases, the turning point is related to elastic modulus of casing string and earth, as well as the geometry relationships among them. The bigger pressure difference, the larger maximum stress exists in casing string. © (2012) Trans Tech Publications. (6 refs)
Main heading: Elastic moduli
Controlled terms: Finite element method - Oil wells - Oil field equipment - Cements - Stress analysis
Uncontrolled terms: Burst strength - Casing strings - Combined system - Earth pressure - Finite element models - Internal walls - Magnification factors - Maximum stress - Minimum stress - Oil and gas - Pressure differences - Stress decrease - Turning points - Wear depth - Wear ratio - Wear ratio of casing string - Wellbore - Working conditions - Yield limit
Classification Code: 412.1 Cement - 511.2 Oil Field Equipment - 512.1.1 Oil Fields - 921.6 Numerical Methods - 951 Materials Science
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

253. Uncertainty measures for rough formulae in rough logic: An axiomatic approach (*Open Access*)

She, Yanhong (1); He, Xiaoli (1)
Source: *Computers and Mathematics with Applications*, v 63, n 1, p 83-93, January 2012; **ISSN:** 08981221; **DOI:** 10.1016/j.camwa.2011.10.074; **Publisher:** Elsevier Ltd
Author affiliation: (1) College of Science, Xi'An Shiyou University, Xi'an 710065, China
Abstract: Rough set theory, initiated by Pawlak, is a mathematical tool in dealing with inexact and incomplete information. Various types of uncertainty measure such as accuracy measure, roughness measure, etc, which aim to quantify the imprecision of a rough set caused by its boundary region, have been extensively studied in the existing

literatures. However, a few of these uncertainty measures are explored from the viewpoint of formal rough set theory, which, however, help to develop a kind of graded reasoning model in the framework of rough logic. To solve such a problem, a framework of uncertainty measure for formulae in rough logic is presented in this paper. Unlike the existing literatures, we adopt an axiomatic approach to study the uncertainty measure in rough logic, concretely, we define the notion of rough truth degree by some axioms, such a notion is demonstrated to be adequate for measuring the extent to which any formula is roughly true. Then based on this fundamental notion, the notions of rough accuracy degree, roughness degree for any formula, and rough inclusion degree, rough similarity degree between any two formulae are also proposed. In addition, their properties are investigated in detail. These obtained results will be used to develop an approximate reasoning model in the framework of rough logic from the axiomatic viewpoint. © 2011 Elsevier Ltd. All rights reserved. (12 refs)
Main heading: Rough set theory
Controlled terms: Computer circuits - Uncertainty analysis
Uncontrolled terms: Accuracy degree - Axiomatic approach - Rough logic - Rough similarity degrees - Truth degree
Classification Code: 721.3 Computer Circuits - 921.4 Combinatorial Mathematics, Includes Graph Theory, Set Theory - 922.1 Probability Theory
Funding Details: Number: 61100166,61103133, Acronym: NSFC, Sponsor: National Natural Science Foundation of China; Number: BK2011492, Acronym: -, Sponsor: Natural Science Foundation of Jiangsu Province; Number: 11JK0473, Acronym: -, Sponsor: Education Department of Shaanxi Province;
Funding text: Project supported by the National Nature Science Fund of China under Grant 61103133 and 61100166 , Scientific Research Program Funded by Shaanxi Provincial Education Department (Program No. 11JK0473) and Natural Science Foundation of Jiangsu Province of China (No. BK2011492).
Open Access type(s): All Open Access, Bronze
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

254. Controlling fracture height in fracturing effect prediction of oil well based on uncertain multi-attribute decision making

Wang, Junqi (1); Lini (1)
Source: *Advanced Materials Research*, v 457-458, p 989-993, 2012, *Advanced Materials and Engineering Materials*; **ISSN:** 10226680; **ISBN-13:** 9783037853559; **DOI:** 10.4028/www.scientific.net/AMR.457-458.989; **Conference:** 2011 International Conference on Advanced Materials and Engineering Materials, ICAMEM2011, November 22, 2011 - November 24, 2011; **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Petroleum Engineering, Xi'an Shiyou University, Xi'an, China
Abstract: Hydraulic fracture to oil well, creating fracture in the bottom stratum, making the crude oil flow to the bottom along the fracture are common stimulation treatment used in oil field. Controlling fracture height fracturing is controlling the extension of fracture within oil layer area, which is the key to success or failure of hydraulic fracturing. Especially, controlling fracture height to avoid pressing to wear the near water layer, which causes a sudden increase of oil water production, is particularly important to oil production. Fracture extension theory and field practice indicate that in controlling fracture height fracturing process, the fracture height extension is related with reservoir stress difference of oil layer and adjacent barrier on a certain scale of construction also it is related with the 8 parameters such as the rock Young's modulus, fracture toughness, Poisson's ratio, permeability, reservoir thickness, fracturing fluid viscosity and fluid loss coefficient and so on. This study introduces uncertain multi-attribute decision making method to the well needing controlling fracture height fracturing, takes expected minimum fracture height as the target, concentrates the 8 attribute values of oil well with OWA operator, obtains comprehensive attribute value, and sorts the expected oil well fracturing effect according to the size of comprehensive attribute value, then selects construction well according to the sort results. In this way, it not only solves the difficulty to accurately resolve fracture height of analytical method and problem of large calculation of numerical method, also provides a simple and practical method for live well selection. According to fracturing selection of Changqing oil field 5 wells and on-site application comparison of 2 wells, it is consistent with the prediction result. © (2012) Trans Tech Publications. (8 refs)
Main heading: Decision making
Controlled terms: Hydraulic fracturing - Numerical methods - Petroleum reservoirs - Forecasting - Fracture toughness - Fracturing fluids - Oil well flooding - Oil field development - Petroleum reservoir engineering - Site selection - Elastic moduli - Crude oil
Uncontrolled terms: Analytical method - Attribute values - Effect - Extension theory - Fluid loss - Fracture height - Hydraulic fracture - Multi attribute decision making - Multi-attributes - Near-water layers - Oil production - Oil water - OWA operators - Poisson's ratio - Practical method - Reservoir stress - Stimulation treatments - Uncertainty - Well selection - Young's Modulus

Classification Code: 511.1 Oil Field Production Operations - 512.1 Petroleum Deposits - 512.1.1 Oil Fields - 512.1.2 Petroleum Deposits : Development Operations - 912.2 Management - 921.6 Numerical Methods - 951 Materials Science
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

255. Research of knowledge base system based on ontology for drilling accident emergency decision

Gao, Xiaorong (1)
Source: *Proceedings - 2012 International Conference on Computer Science and Electronics Engineering, ICCSEE 2012*, v 2, p 230-234, 2012, *Proceedings - 2012 International Conference on Computer Science and Electronics Engineering, ICCSEE 2012*; **ISBN-13:** 9780769546476; **DOI:** 10.1109/ICCSEE.2012.322; **Article number:** 6188008; **Conference:** 2012 International Conference on Computer Science and Electronics Engineering, ICCSEE 2012, March 23, 2012 - March 25, 2012; **Sponsor:** 'Xi'an Technological University'; Shaanxi New Network and Monitoring Control Engineering Laboratory; **Publisher:** IEEE Computer Society
Author affiliation: (1) Institute of Petroleum Engineering, Xi'An Shiyou University, Xi'an, China
Abstract: Aiming to the knowledge representation and management existing issues of drilling accident emergency decision in current oil industry, using ontology technology, this paper designs a knowledge base system based on ontology for drilling accident emergency decision, establishes an ontology knowledge representation model, and constructs the emergency ontology knowledge base and case base. Consequently, it makes the emergency domain knowledge standardization and semantization, so convenient for knowledge sharing and reuse. And on that basis, the rules which drilling accident emergency decision needs are established by using the SWRL rule language, implementing the ontology-based rule knowledge reasoning through the Jena reasoning machine. This can provide auxiliary schemes for rescuing emergency accidents. This system researched provides good methods and technology for the knowledge effective management and applying of drilling accident emergency decision © 2012 IEEE. (9 refs)
Main heading: Ontology
Controlled terms: Accidents - Decision making - Case based reasoning - Knowledge representation
Uncontrolled terms: Effective management - Emergency accidents - emergency decision - Knowledge base - Knowledge base system - Ontology technology - reasoning - Reasoning machine
Classification Code: 723.4 Artificial Intelligence - 912.2 Management - 914.1 Accidents and Accident Prevention
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

256. The application of sort and subtotal of microsoft office excel in oilfield data processing

Liu, Xiaojuan (1); Liu, Xiaoyang (1)
Source: *Advanced Materials Research*, v 524-527, p 1606-1609, 2012, *Natural Resources and Sustainable Development II*; **ISSN:** 10226680; **ISBN-13:** 9783037854174; **DOI:** 10.4028/www.scientific.net/AMR.524-527.1606; **Conference:** 1st International Conference on Energy and Environmental Protection, ICEEP 2012, June 23, 2012 - June 24, 2012; **Publisher:** Trans Tech Publications
Author affiliation: (1) Petroleum Engineering College, Xi'an Shiyou university, Xi'an 710065, China
Abstract: Through expounding the function of Sort and Subtotal of Microsoft Office Excel and analyzing its application in oilfield data processing, this paper provides a convenient method of oilfield data Excel-processing for oil-workers in order to improve work efficiency. © (2012) Trans Tech Publications. (3 refs)
Main heading: Data handling
Controlled terms: Oil well flooding
Uncontrolled terms: Microsoft Office - Sort - Subtotal - Work efficiency
Classification Code: 511.1 Oil Field Production Operations - 723.2 Data Processing and Image Processing
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

257. Application of wavelet analysis in transient electromagnetic sounding

Tang, Jun (1)
Source: *Advanced Materials Research*, v 346, p 757-763, 2012, *Sustainable Construction Materials and Computer Engineering*; **ISSN:** 10226680; **ISBN-13:** 9783037852583; **DOI:** 10.4028/www.scientific.net/AMR.346.757;

Conference: 2011 International Conference on Sustainable Construction Materials and Computer Engineering, ICSCMCE2011, September 24, 2011 - September 25, 2011; **Sponsor:** National Natural Science Foundation of China; Huazhong University of Science and Technology; **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Electronic Engineering, Xi'An Shiyou University, Xi'an, China
Abstract: On the basis of explaining the basis theory on transient electromagnetic sounding, wavelet theory and imaging principle of differential conductivity for transient electromagnetic sounding data, this thesis proposes rapid imaging technology of electromagnetic sounding based on wavelet analysis, describes the characteristics of noises under wavelet decomposition, and employs wavelet packet analysis to eliminate noise of signals, at last, introduces wavelet analysis into transient electromagnetic sounding on the platform of MATLAB wavelet function toolbox and deals with differential conductivity imaging processing steps of transient electromagnetic sounding. © (2012) Trans Tech Publications, Switzerland. (5 refs)
Main heading: Wavelet analysis
Controlled terms: Transient analysis - Wavelet decomposition
Uncontrolled terms: Differential conductivity - Electromagnetic - Electromagnetic soundings - Imaging principle - Rapid imaging - Transient electromagnetic soundings - Wavelet - Wavelet function - Wavelet Packet Analysis - Wavelet theory
Classification Code: 921 Mathematics - 921.3 Mathematical Transformations
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

258. Application design for oilfield monitoring system based on ZigBee wireless network technology

Meng, Kaiyuan (1); Yang, Peng (1); Cao, Qingnian (1)
Source: *Applied Mechanics and Materials*, v 135-136, p 294-299, 2012, *Advances in Science and Engineering II*; **ISSN:** 16609336, **E-ISSN:** 16627482; **ISBN-13:** 9783037852903; **DOI:** 10.4028/www.scientific.net/AMM.135-136.294; **Conference:** 2011 WASE Global Conference on Science Engineering, GCSE 2011, December 10, 2011 - December 11, 2011; **Sponsor:** World Association of Science Engineering (WASE); **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Computer Science, Xi'an Shiyou University, Xi'an, China
Abstract: By analyzing the oilfield wireless monitoring system, the paper puts forward an oilfield monitoring system framework based on ZigBee wireless sensor networks on basic of studying ZigBee standard communication protocol. Software and hardware of data acquisition and transmission are designed in this system. The fast network and wireless transmission are realized. (8 refs)
Main heading: Wireless sensor networks
Controlled terms: Zigbee - Oil well flooding - Monitoring - Data acquisition
Uncontrolled terms: Application design - Monitoring system - Wireless monitoring system - Wireless sensor - Wireless transmissions - Zig-Bee - ZigBee standard - ZigBee wireless networks
Classification Code: 511.1 Oil Field Production Operations - 716.3 Radio Systems and Equipment - 722.3 Data Communication, Equipment and Techniques - 723.2 Data Processing and Image Processing
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

259. Study on technology of restraining the vibration of deep-hole boring and the helix lobes

Zhu, L. (1); Nan, Y.F. (1)
Source: *Materials Science Forum*, v 697-698, p 9-12, 2012, *Advances in Materials Manufacturing Science and Technology XIV*; **ISSN:** 02555476, **E-ISSN:** 16629752; **ISBN-13:** 9783037852378; **Conference:** 14th International Manufacturing Conference in China, IMCC2011, October 13, 2011 - October 15, 2011; **Sponsor:** The National Natural Science Foundation of China; Tianjin Municipal Science and Technology Commission; **Publisher:** Trans Tech Publications Ltd
Author affiliation: (1) School of Mechanical Engineering, Xi'an Shiyou University, Xi'an, China
Abstract: On the base of studying the forming mechanism of self-excited vibration and helix lobes in deep-hole boring, the paper established a mechanical model and analysed the effect of the length of the guide pads on the vibration and stability. Moreover, the reasonable length of the guide pads was verified by the experiments of the guide pads testing. © (2012) Trans Tech Publications, Switzerland. (3 refs)
Main heading: Vibration analysis
Controlled terms: Boring

Uncontrolled terms: Deep holes - Forming mechanism - Helix lobes - Mechanical model - Self-excited vibrations - Vibration
Classification Code: 604.2 Machining Operations
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

260. Improvement of fractal image compression coding based on quadtree

Hu, Hongtao (1); Liu, Qifei (1)
Source: *Advanced Materials Research*, v 532-533, p 1157-1161, 2012, *Materials Science and Information Technology II*; **ISSN:** 10226680; **ISBN-13:** 9783037854389; **DOI:** 10.4028/www.scientific.net/AMR.532-533.1157; **Conference:** 2012 2nd International Conference on Materials Science and Information Technology, MSIT 2012, August 24, 2012 - August 26, 2012; **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Computer Science, Xi'an ShiYou University, Xi'an, China
Abstract: The goal of image compression is to represent an image with as few number of bits as possible while keeping the quality of the original image. With the characteristics of higher compression ratio, fractal image coding has received much attention recently. However, conventional fractal compression approach needs more time to code the original image. In order to overcome the time-consuming issue, a Quadtree-based partitioning and matching scheme is proposed. During the partitioning phase, an image frame is partitioned into tree-structural segments. And during a matching phase, a rang block only searches its corresponding domain block around previous matched domain block. Such local matching procedures will not stop until a predefined matching threshold is obtained. The preliminary experimental results show that such sub-matching rather than a global matching scheme dramatically decreases the matching complexity, while preserving the quality of an approximate image to the original after decoding process. In particular, the proposed scheme improves the coding process up to 2 times against the conventional fractal image coding approach. © (2012) Trans Tech Publications, Switzerland. (7 refs)
Main heading: Image compression
Controlled terms: Image coding - Image enhancement - Fractals - Codes (symbols)
Uncontrolled terms: Coding process - Decoding process - Domain block - Fractal compression - Fractal image coding - Fractal image compression - Global matching - Image frames - Local matching - Matching scheme - Matching threshold - Original images - Quad trees - Rang block
Classification Code: 723.2 Data Processing and Image Processing - 921 Mathematics
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

261. Study on technology of restraining the vibration of deep-hole boring and the helix lobes

Zhu, L. (1); Nan, Y.F. (1)
Source: *Materials Science Forum*, v 697-698, p 9-12, 2012, *Advances in Materials Manufacturing Science and Technology XIV*; **ISSN:** 02555476, **E-ISSN:** 16629752; **ISBN-13:** 9783037852378; **DOI:** 10.4028/www.scientific.net/MSF.697-698.9; **Conference:** 14th International Manufacturing Conference in China, IMCC2011, October 13, 2011 - October 15, 2011; **Sponsor:** The National Natural Science Foundation of China; Tianjin Municipal Science and Technology Commission; **Publisher:** Trans Tech Publications Ltd
Author affiliation: (1) School of Mechanical Engineering, Xi'an Shiyou University, Xi'an, China
Abstract: On the base of studying the forming mechanism of self-excited vibration and helix lobes in deep-hole boring, the paper established a mechanical model and analysed the effect of the length of the guide pads on the vibration and stability. Moreover, the reasonable length of the guide pads was verified by the experiments of the guide pads testing. © (2012) Trans Tech Publications, Switzerland. (3 refs)
Main heading: Vibration analysis
Controlled terms: Boring
Uncontrolled terms: Deep holes - Forming mechanism - Helix lobes - Mechanical model - Self-excited vibrations - Vibration
Classification Code: 604.2 Machining Operations
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

262. $_{E}$–preinvex functions and semi-infinite programming

Dang, Linli (1)
Source: *International Review on Computers and Software*, v 7, n 5, p 2586-2592, September 2012; **ISSN:** 18286003, **E-ISSN:** 18286011; **Publisher:** Praise Worthy Prize
Author affiliation: (1) College of Science, Xi'an Shiyou University, Xi'an 710065, China
Abstract: Some kinds of generalized convex function are defined, that is, $_{\mathrm{E}}$ -preinvex function, $_{\mathrm{E}}$ -strictly preinvex function, generalized $_{\mathrm{E}}$ -preinvex function and generalized $_{\mathrm{E}}$ -strictly preinvex function etc, which generalize some of the present generalized convex functions. Some properties of the above new generalized convex functions are derived. Some application of $_{\mathrm{E}}$ -preinvex function in semi-infinite programming problem is studied, and some interesting results are obtained. The results will not only extend some of the present researches, and play an important role in theory for optimality, engineering, economy and management etc, but also they are helpful for solving the practical optimization problems. © 2012 Praise Worthy Prize S.r.l. - All rights reserved. (9 refs)
Main heading: Functions
Controlled terms: Mathematical programming
Uncontrolled terms: Convex functions - Generalized - Optimality - Optimization problems - Semi infinite programming - Semi-infinite programming problems
Classification Code: 921 Mathematics
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

263. Functional structure design of english learning machine based on innovative cognition

Chen, Ke (1)
Source: *Advanced Materials Research*, v 538-541, p 2967-2971, 2012, *Materials Processing Technology II*; **ISSN:** 10226680; **ISBN-13:** 9783037854471; **DOI:** 10.4028/www.scientific.net/AMR.538-541.2967; **Conference:** 2nd International Conference on Advanced Engineering Materials and Technology, AEMT 2012, July 6, 2012 - July 6, 2012; **Publisher:** Trans Tech Publications
Author affiliation: (1) Department of Foreign Languages, Xi'an Shiyou University, Xi'an, 710075, China
Abstract: In terms of cognitive psychology and innovative psychology, this paper establishes the innovative cognitive process of English learning from input of information to output of language acquisition result. Then combined with the theory of cognitive linguistics, the paper analyzes the main impact that innovative cognition produced on English learning process, and proposes the related English learning strategies. Based on the above theory, functional structure of English learning machine, which is made up of the man-machine interaction interface, the core function layer and the hardware base layer, is presented. The method proposed here should be helpful for further research on the model of English learning machine. © (2012) Trans Tech Publications, Switzerland. (4 refs)
Main heading: Structural design
Controlled terms: Learning systems
Uncontrolled terms: Base layers - Cognitive process - Cognitive psychology - Core functions - English Learning - Functional structure - Functional structure design - Innovative cognition - Language acquisition - Man-machine interaction
Classification Code: 408.1 Structural Design, General - 731.5 Robotics
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

264. Weak signal detection based on the nonlinear dynamic model

Liu, Xuan Chao (1); Li, Pei Pei (1)
Source: *Applied Mechanics and Materials*, v 157-158, p 887-891, 2012, *Mechatronics and Applied Mechanics*; **ISSN:** 16609336, **E-ISSN:** 16627482; **ISBN-13:** 9783037853801; **DOI:** 10.4028/www.scientific.net/AMM.157-158.887; **Conference:** Mechatronics and Applied Mechanics, December 27, 2011 - December 28, 2011; **Sponsor:** 2011 International Conference; on Mechatronics and Applied Mechanics, ICMAM2011; **Publisher:** Trans Tech Publications
Author affiliation: (1) Electronic Engineering College, Xi'an Shiyou University, Xi'an, Shaanxi province, China
Abstract: In order to obtain new ways of weak signal detection, we analyzed the motion states of nonlinear dynamic model Duffing oscillator in the case of different amplitude of input signals by solving the Duffing equation and expounded the basic principles of weak signal detection based on Duffing oscillator phase-change characteristics, further illustrated the relationship between signal detection accuracy and detection time by the experimental, researched the impact on signal detection coming from Gaussian white noise and also pointed out how to use intermittent chaos state to implement weak signal detection. The results showed that Duffing oscillator can be effectively detect the slight changes of input signal in the strong noises background, so as to achieve the purpose of

weak signal detection. Compared with existing methods, it could greatly improve the detection results. © (2012) Trans Tech Publications, Switzerland. (8 refs)
Main heading: Signal detection
Controlled terms: Dynamic models - Dynamics - Nonlinear equations - Oscillators (mechanical) - White noise
Uncontrolled terms: Basic principles - Detection accuracy - Detection time - Duffing equations - Duffing oscillator - Gaussian white noise - Input signal - Intermittent chaos - Motion state - Phase changes - Weak signal detection
Classification Code: 601.1 Mechanical Devices - 716.1 Information Theory and Signal Processing - 921 Mathematics
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

265. Development of interchangeable virtual instrument driver for cannon-chamber test instrument

Jia, Huiqin (1); Shi, Jianwen (1)
Source: *Proceedings - 2012 International Conference on Computer Science and Information Processing, CSIP 2012*, p 299-302, 2012, *Proceedings - 2012 International Conference on Computer Science and Information Processing, CSIP 2012*; **ISBN-13:** 9781467314114; **DOI:** 10.1109/CSIP.2012.6308853; **Article number:** 6308853; **Conference:** 2012 International Conference on Computer Science and Information Processing, CSIP 2012, August 24, 2012 - August 26, 2012; **Sponsor:** 'IEEE Xi'an Section'; 'Xi'an Technological University'; Missouri Western State University; Natl. New Netw. Monit. Control Eng. Lab.; **Publisher:** IEEE Computer Society
Author affiliation: (1) School of Electronic Engineering, Xi'An Shiyou University, 710065 Xi'an, China
Abstract: The driver development is important for the program-controlled instruments. The purpose of this paper is to introduce how to develop the drivers, which can realize the aim of interchangeability the same type of instrumentation without replacing the drivers, so the application layer can call it conveniently. The drivers are developed under the Interchangeable Virtual Instrument standards, which is IVI-COM, which describe a flexible architecture for developing the interchangeable instrument drivers. But the interface realization specification between the interchangeable virtual instrument driver and upper test program is not given. Aiming at this problem, using Component Object Model to develop this interface is presented on this paper. At the same time, the software is classified as application layer, instrument driven layer and Input/output layer. Finally the programming method under Visual Basic environment is given. The application program about the Cannon-Chamber Test Instrument is easy to maintain and update because layered architecture and COM components is used. © 2012 IEEE. (11 refs)
Main heading: Application programs
Controlled terms: Visual BASIC - Software testing - Digital instruments
Uncontrolled terms: Chamber tests - Component object models - Driver Development - Flexible architectures - Instrument driver - Interchangeable virtual instruments - Layered architecture - Virtual Instrumentation
Classification Code: 723 Computer Software, Data Handling and Applications - 723.1.1 Computer Programming Languages - 723.5 Computer Applications
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

266. Influence of non-uniform movements and soft soil on seismic responses

Hai, Su (1)
Source: *Applied Mechanics and Materials*, v 166-169, p 2419-2422, 2012, *Progress in Structures*; **ISSN:** 16609336, **E-ISSN:** 16627482; **ISBN-13:** 9783037854211; **DOI:** 10.4028/www.scientific.net/AMM.166-169.2419; **Conference:** 2nd International Conference on Civil Engineering, Architecture and Building Materials, CEABM 2012, May 25, 2012 - May 27, 2012; **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Petroleum Resources, Xi'an Shiyou University, Xi'an, Shanxi, China
Abstract: Relative responses can strongly determine damages of bridge structures, e.g. due to pounding and unseating of girders as observed in many major earthquakes in the past. In the investigations often uniform ground excitation and pounding at only one location are considered. Studies on the influence of spatially varying ground excitation on bridge responses are still very limited, and they are restricted to flat ground-surface condition. Influence of multi-sided pounding is also not much investigated. If the impediment effect of abutments is considered at all, so far fixed-base movements are assumed. The consequence of non-uniform movement and pier-support movements for the force development in bridge structures is not investigated yet. It is the subject of our current study. © (2012) Trans Tech Publications. (5 refs)
Main heading: Piers
Controlled terms: Earthquakes

Uncontrolled terms: Ground excitation - Multi-sided - Non-uniform movement - Pier-support - Pounding
Classification Code: 407.1 Maritime Structures - 484 Seismology
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

267. Analysis of seismic responses during near-source ground motions

Hai, Su (1)
Source: *Advanced Materials Research*, v 482-484, p 1414-1417, 2012, *Advanced Composite Materials*; **ISSN:** 10226680; **DOI:** 10.4028/www.scientific.net/AMR.482-484.1414; **Conference:** 3rd international Conference on Manufacturing Science and Engineering, ICMSE 2012, March 27, 2012 - March 29, 2012; **Sponsor:** Fujian University of Technology; Xiamen University; Fuzhou University; Huaqiao University; University of Wollongong; **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Petroleum Resources, Xi'An Shiyou University, Xi'an, Shanxi, China
Abstract: Seismic responses can strongly determine damages of bridge structures, e.g. due to pounding and unseating of girders as observed in many major earthquakes in the past. In the investigations often uniform ground excitation and pounding at only one location are considered. Studies on the influence of non-uniform ground excitation on bridge responses are still very limited, and they are restricted to flat ground-surface condition. Influence of multi-sided pounding is also not much investigated. If the impediment effect of abutments is considered at all. The study reveals that commonly assumed girder stiffness for the end restraint overestimates the actual effective end-restraint stiffness. Non-linear elastomeric bearings can significantly reduce the adjacent girder relative displacements. A consideration of non-uniform excitation is essential for a realistic estimation of bridge response and damage potential. © (2012) Trans Tech Publications, Switzerland. (5 refs)
Main heading: Seismic response
Controlled terms: Earthquakes - Beams and girders - Stiffness
Uncontrolled terms: Bridge response - Bridge structures - Damage Potential - Elastomeric bearing - End restraint - Girder stiffness - Ground excitation - Ground motions - Multi-sided pounding - Relative displacement
Classification Code: 408.2 Structural Members and Shapes - 484 Seismology - 484.2 Secondary Earthquake Effects - 951 Materials Science
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

268. Design for the network node of oilfield monitoring system based on ZigBee technology

Meng, Kaiyuan (1); Yang, Peng (1); Cao, Qingnian (1)
Source: *Proceedings - 2012 4th International Conference on Multimedia and Security, MINES 2012*, p 147-151, 2012, *Proceedings - 2012 4th International Conference on Multimedia and Security, MINES 2012*; **ISBN-13:** 9780769548524; **DOI:** 10.1109/MINES.2012.98; **Article number:** 6405649; **Conference:** 2012 4th International Conference on Multimedia and Security, MINES 2012, November 2, 2012 - November 4, 2012; **Sponsor:** Nanjing University of Science and Technology; NSFC; **Publisher:** IEEE Computer Society
Author affiliation: (1) School of Computer Science, Xi'an Shiyou University, Xi'an 710065, China
Abstract: By analyzing the oilfield wireless monitoring system, the paper puts forward a sensor networks system framework based on ZigBee wireless communication protocols. Hardware of the coordinator and router nodes is designed in this system, achieving self-networking function and reliable data transmission. Finally, low power consumption of the router and terminal device is studied. © 2012 IEEE. (5 refs)
Main heading: Routers
Controlled terms: Oil well flooding - Low power electronics - Sensor nodes - Zigbee - Monitoring
Uncontrolled terms: Low Power - Low-power consumption - Monitoring system - Reliable data transmission - System framework - Wireless monitoring system - ZigBee technology - ZigBee wireless communication
Classification Code: 511.1 Oil Field Production Operations - 716.3 Radio Systems and Equipment - 722 Computer Systems and Equipment - 722.3 Data Communication, Equipment and Techniques
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

269. Test study of nickel-base superalloy 718 superfine deep-hole drilling

Liu, Zhanfeng (1); He, Shengming (1)

Source: *Applied Mechanics and Materials*, v 217-219, p 1825-1828, 2012, *Advanced Materials and Process Technology*; **ISSN:** 16609336, **E-ISSN:** 16627482; **ISBN-13:** 9783037855027; **DOI:** 10.4028/www.scientific.net/AMM.217-219.1825; **Conference:** 2nd International Conference on Advanced Design and Manufacturing Engineering, ADME 2012, August 16, 2012 - August 18, 2012; **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Mechanical Engineering, Xi'an ShiYou University, Xi'an 710065, China
Abstract: Nickel-base superalloy 718 is a new kind of materials that is difficult to drilling. In this paper, the superfine deep-hole (ø36×5440mm)drilling test is based on the material. This paper analyzes the causes and laws of the tool wear, tool breakage, and the hole axis deflection from the blade material, tool geometry parameters, cutting parameters and drilling methods. © (2012) Trans Tech Publications, Switzerland. (4 refs)
Main heading: Superalloys
Controlled terms: Cutting tools - Nickel - Wear of materials - Nickel alloys
Uncontrolled terms: Cutting parameters - Deep holes - Deep-hole drilling - Drilling methods - Drilling tests - Hole axis - Nickel base superalloy - Test study - Tool breakage - Tool geometry - Tool wear
Classification Code: 531 Metallurgy and Metallography - 548.1 Nickel - 548.2 Nickel Alloys - 603.2 Machine Tool Accessories - 931.2 Physical Properties of Gases, Liquids and Solids - 951 Materials Science
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

270. Study on pumping units with wind power generation complementary power supply system

Cai, Wenbin (1); Du, Kang (1); Peng, Xing (1); Liu, Huayang (1)
Source: *Advanced Materials Research*, v 361-363, p 479-482, 2012, *Natural Resources and Sustainable Development*; **ISSN:** 10226680; **ISBN-13:** 9783037852682; **DOI:** 10.4028/www.scientific.net/AMR.361-363.479; **Conference:** 2011 International Conference on Energy, Environment and Sustainable Development, ICEESD 2011, October 21, 2011 - October 23, 2011; **Publisher:** Trans Tech Publications
Author affiliation: (1) Petroleum Engineering Academy, Xi'an Shiyou University, Xi'an, Shanxi, 710065, China
Abstract: The wind power generation pumping unit has environmental protection and the energy-saving function with wind power generation complementary power supply system. Based on the calculation of the pumping power consumption during the oil production, the essential wind-power generation electric quantity for pumping equipment runs stable was analyzed, wind-electricity and electric network complementary energy transmission and control circuit were designed, When the wind speed changes, by the energy transmission and control circuit related parameters and taking the historical meteorological statistics of the corresponding period as the comparison reference, the system can control wind power generation and the battery charge and discharge flexibly to ensure the equipment runs stable, which lays a firm foundation for the wide application of the off-grid wind power. The economic analysis shows that the wind-electricity and electric network complementary pumping machine has good economic efficiency and application prospect in oilfield. © (2012) Trans Tech Publications, Switzerland. (5 refs)
Main heading: Timing circuits
Controlled terms: Power control - Energy conservation - Electric power generation - Wind power - Economic analysis - Electric power system control - Electric network parameters - Pumps - Electric network analysis
Uncontrolled terms: Application prospect - Battery charge and discharge - Complementary energy - Control circuits - Economic efficiency - Electric quantity - Energy transmission - Off-grids - Oil production - Power supply system - Pumping equipment - Pumping power consumption - Pumping unit - Wind speed
Classification Code: 525.2 Energy Conservation - 615.8 Wind Power (Before 1993, use code 611) - 618.2 Pumps - 703.1 Electric Networks - 703.1.1 Electric Network Analysis - 706.1 Electric Power Systems - 713.4 Pulse Circuits - 731.2 Control System Applications - 731.3 Specific Variables Control - 911.2 Industrial Economics
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

271. Blowout Calculations for Acid Gas Well with High Water Cut

Wang, Shouxi (1); Carroll, John J. (2)
Source: *Sour Gas and Related Technologies*, p 215-226, September 19, 2012; **ISBN-13:** 9780470948149; **DOI:** 10.1002/9781118511138.ch14; **Publisher:** John Wiley and Sons
Author affiliation: (1) Xi'an Shiyou University, Xi'an, China (2) Gas Liquids Engineering, Calgary, Canada
Abstract: The blowout of an acid gas injection well would be a very dangerous event. There are many scenarios of such an event, but this paper will focus on a blowout with a large amount of water present. Modeling of the blowout is done using the GLEWPro software [2]. Although the software was designed for the calculation of injection flow, it

is suitable for flow in either direction. The surface pressure is set to atmospheric, and, given the reservoir pressure (or at least the pressure at the sandface), the flow rate is calculated. In the modeling, it is assumed that water is pure water, and not brine. Pure water has a lower density and viscosity than brine. It is shown that under certain situations, the well will be self-killing. That is, there will be no flow from the well, even though there is no restriction to the flow at the surface. This occurs when the hydrostatic head of the fluid is greater than the reservoir pressure. Under other circumstances, the fluid will remain a single-phase for most of the flow, but the gas will come out of solution at the surface. Other scenarios are also possible. Note, this is an engineering exercise and not for health, safety, and environment (HSE) purposes. For HSE, you must follow the regulations in your local jurisdiction. © 2012 Scrivener Publishing LLC. (3 refs)
Main heading: Gases
Controlled terms: Blowouts - Injection (oil wells) - Natural gas wells - Atmospheric movements
Uncontrolled terms: Acid gas - Acid gas injection - Engineering exercise - Hydrostatic head - Injection flow - Reservoir pressures - Surface pressures - Trace amounts
Classification Code: 443.1 Atmospheric Properties - 511.1 Oil Field Production Operations - 512.2.1 Natural Gas Fields - 914.1 Accidents and Accident Prevention
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

272. Application of improved Dijkstra algorithm in selection of gas source node in gas network

Cuan, Ying (1); Chen, Xiaoni (1)
Source: *Proceedings of the 2012 International Conference on Industrial Control and Electronics Engineering, ICICEE 2012*, p 1558-1560, 2012, *Proceedings of the 2012 International Conference on Industrial Control and Electronics Engineering, ICICEE 2012*; **ISBN-13:** 9780769547923; **DOI:** 10.1109/ICICEE.2012.410; **Article number:** 6322700; **Conference:** 2012 International Conference on Industrial Control and Electronics Engineering, ICICEE 2012, August 23, 2012 - August 25, 2012; **Sponsor:** 'Xi'an Technological University'; IEEE Kansas City Section; Missouri Western State University; **Publisher:** IEEE Computer Society
Author affiliation: (1) School of Computer Science, Xi'an Shiyou University, Xi'an, 710065, China
Abstract: With the wide usage of natural gas, the layout of gas network is getting more and more important. However, one essential point in the layout of gas network is the selection of gas source node, which, if choosed unappropriately, can directly affect the optimization of gas network's layout. This paper is to study the selection of gas source node by using the improved Dijkstra Algorithm and provide several solutions as the precondition of the optimization of gas network's layout. © 2012 IEEE. (6 refs)
Main heading: Gases
Uncontrolled terms: Dijkstra algorithms - Essential point - Gas networks - Gas sources - Shortcut
Classification Code: 912.1 Industrial Engineering
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

273. Simulation of gauge control system based on single neuron PID

Meng, Xu (1)
Source: *Applied Mechanics and Materials*, v 233, p 228-233, 2012, *Fluid Dynamic and Mechanical and Electrical Control Engineering*; **ISSN:** 16609336, **E-ISSN:** 16627482; **ISBN-13:** 9783037855164; **DOI:** 10.4028/www.scientific.net/AMM.233.228; **Conference:** 16th International Conference on Fluid Dynamic and Mechanical and Electrical Control Engineering, FDMECE 2012, November 10, 2012 - November 11, 2012; **Publisher:** Trans Tech Publications
Author affiliation: (1) School of electronic engineering, Xi'an Shiyou University, Xi'an 710065, China
Abstract: This paper presents that single neuron PID is applied to the gauge gap control system, and compares it with PID. Simulation results indicate that control accuracy of single neuron PID has faster response, stronger anti-interference ability and better robustness. © (2012) Trans Tech Publications, Switzerland. (6 refs)
Main heading: Gages
Controlled terms: Manufacture - Neurons - Control systems
Uncontrolled terms: Anti-interference - Control accuracy - Gauge control - Simulation - Single neuron PID
Classification Code: 461.9 Biology - 537.1 Heat Treatment Processes - 731.1 Control Systems - 913.4 Manufacturing - 943.3 Special Purpose Instruments
Database: Compendex

Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

274. Evaluation of seismic response and reduction measure during near-source ground motions

Su, Hai (1)
Source: *World Automation Congress Proceedings*, 2012, *2012 World Automation Congress, WAC 2012*; **ISSN:** 21544824, **E-ISSN:** 21544832; **ISBN-13:** 9781467344975; **Article number:** 6321395; **Conference:** 2012 World Automation Congress, WAC 2012, June 24, 2012 - June 28, 2012; **Publisher:** IEEE Computer Society
Author affiliation: (1) School of Petroleum Resources, Xi'An Shiyou University, Xi'an, Shanxi, China
Abstract: This study addresses the relationship between the characteristics of Kobe near-source ground motions and the pounding behaviour of two multi-storey buildings linked by two pedestrian bridges. The influence of soil-structure interaction on the effectiveness of viscous dampers and friction devices at the pedestrian bridge-building locations is considered. The considered friction device consists of a steel spring with additional friction element. It is assumed that the soil stiffness is frequency-independent. The nonlinear analysis is performed in the time domain using a finite element method. The considered earthquake is 1995 Kobe earthquake recorded at 22 stations. The reduction of the displacements and the pounding forces between the two adjacent buildings are investigated. The result reveals that by connecting the adjacent buildings with viscous and friction dampers pounding responses between the pedestrian bridges and the buildings can be controlled. © 2012 TSI Press. (9 refs)
Main heading: Earthquakes
Controlled terms: Nonlinear analysis - Buildings - Finite element method - Soils - Tribology - Friction - Soil structure interactions - Time domain analysis
Uncontrolled terms: Additional friction - Adjacent buildings - Frequency independent - Friction devices - Multistorey buildings - Near source ground motion - pounding - Reduction measures
Classification Code: 402 Buildings and Towers - 483.1 Soils and Soil Mechanics - 483.2 Foundations - 484 Seismology - 921 Mathematics - 921.6 Numerical Methods - 931 Classical Physics; Quantum Theory; Relativity
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

275. Research on viscosity reduction and the transportation at atmospheric temperature for heavy oil with microwave radiation technique

Jiang, Huayi (1); Zhang, Yinan (1); Wei, Aijun (1); Wang, Xu (1)
Source: *Advanced Materials Research*, v 361-363, p 557-560, 2012, *Natural Resources and Sustainable Development*; **ISSN:** 10226680; **ISBN-13:** 9783037852682; **DOI:** 10.4028/www.scientific.net/AMR.361-363.557; **Conference:** 2011 International Conference on Energy, Environment and Sustainable Development, ICEESD 2011, October 21, 2011 - October 23, 2011; **Publisher:** Trans Tech Publications
Author affiliation: (1) Xi'an Shiyou University, College of Petroleum Engineering, Xi'an, 710065, China
Abstract: Paper analysises active regulation of microwave to heavy oil by experiment and theory. Determine heavy oil' rheological indicators before and after. test the composition and structure of heavy oil by the chemical analysis tools, before and after the role of the microwave, analysis the cause of rheological change. Based on the theories of electromagnetic field and the thermodynamic, Establish the mathematical model of microwave effect on heavy oil, determine the experimental temperature distribution inside the heating chamber, and further analysis the mechanism of microwave on heavy oil. Also introduced field application of single-well oil pipeline microwave heater which was development by experiments and theory research. Experimental and theoretical analysis shows that the microwave effect on heavy oil, both have thermal effects and non-thermal effects. Field application shows that microwave is feasible used in heating pipeline in theory, field trials are successful. © (2012) Trans Tech Publications, Switzerland. (4 refs)
Main heading: Crude oil
Controlled terms: Chemical analysis - Pipelines - Petroleum transportation - Heavy oil production - Electromagnetic fields - Microwaves
Uncontrolled terms: Field application - Field trial - Heating chambers - Heavy oil - Microwave effects - Microwave heater - Non thermal effect - Oil pipelines - Rheological change - Rheological indicators - Viscosity reduction
Classification Code: 511.1 Oil Field Production Operations - 512.1 Petroleum Deposits - 619.1 Pipe, Piping and Pipelines - 701 Electricity and Magnetism - 711 Electromagnetic Waves
Database: Compendex
Data Provider: Engineering Village
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276. The super-thin rod cylindrical honing technology research

Lin, Zhu (1); Lin, Pan (1)
Source: *Advanced Materials Research*, v 503-504, p 764-767, 2012, *Frontiers of Manufacturing Science and Measuring Technology II*; **ISSN:** 10226680; **ISBN-13:** 9783037854044; **DOI:** 10.4028/www.scientific.net/AMR.503-504.764; **Conference:** 2012 2nd International Conference on Frontiers of Manufacturing Science and Measuring Technology, ICFMM 2012, June 12, 2012 - June 13, 2012; **Sponsor:** Control Engineering and Information Science Research Association; Int. Front. Sci. Technol. Res. Assoc.; Trans Tech Publications; Chin-Yi University of Technology; **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Mechanical Engineering, Xi'an Shiyou University, Shaanxi, 710065, China
Abstract: The super-thin rod cylindrical grinding is a problem in the machining, super-thin rod with large slenderness ratio, poor rigidity, large roundness error after grinding, and with low processing efficiency. This study uses cylindrical honing processing super-thin rod parts, and designing the super-thin rod cylindrical honing head, carrying on a honing test. The results show that the super-thin rod cylindrical coarse honing capacity reach up to 0.002mm/double stroke (length 1698mm), surface roughness reach up to Ra 0.8#0.025μm after honing, roundness error reach up to 2μm. It fully shows that super-thin rod cylindrical honing technology has high precision, low surface roughness, flexible production processing and high efficiency. © (2012) Trans Tech Publications. (3 refs)
Main heading: Honing
Controlled terms: Grinding (machining) - Efficiency - Surface roughness
Uncontrolled terms: Flexible production - High precision - Roundness error - Slenderness ratios - Super-thin rod - Technology research
Classification Code: 604.2 Machining Operations - 913.1 Production Engineering - 931.2 Physical Properties of Gases, Liquids and Solids
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

277. Application of GIS in the personnel positioning software

Jia, Huiqin (1); Shi, Jianwen (1)
Source: *CSAE 2012 - Proceedings, 2012 IEEE International Conference on Computer Science and Automation Engineering*, v 3, p 661-664, 2012, *CSAE 2012 - Proceedings, 2012 IEEE International Conference on Computer Science and Automation Engineering*; **ISBN-13:** 9781467300865; **DOI:** 10.1109/CSAE.2012.6273038; **Article number:** 6273038; **Conference:** 2012 IEEE International Conference on Computer Science and Automation Engineering, CSAE 2012, May 25, 2012 - May 27, 2012; **Sponsor:** Central South University; et al.; Hunan University of Humanities, Science and Technology; IEEE Beijing Section; Tongji University; Xiamen University; **Publisher:** IEEE Computer Society
Author affiliation: (1) School of Electronic Engineering, Xi'an Shiyou University, 710065 Xi'an, China
Abstract: Geographic Information System (GIS) is the miniature of resources and environment of the whole or part region in the computer. It has been used widely in many fields of spatial information systems. There are some development ways to realize GIS. For example, applying MapX controls to realize the basic functions of geographic information system, which is a main way of secondary development application of GIS integration. In this paper, the development and realization of personnel positioning system is mainly based on GIS. In the process of developing the personnel positioning software, it is very important to choose the right development tools. And this positioning system is developed through use of ActiveX technology and LabVIEW programming platform. Their advantages are easy to realize all kinds of personnel positioning functions and map display. The purpose of this paper is to introduce application of GIS in the personnel positioning software. This paper firstly discusses the GIS-related development and then describes the methods of calling the MapX controls. In addition, this paper expounds the realization process of secondary development methods of GIS integration in LabVIEW. Finally, analyzes the running result of personnel positioning software by processing longitude-latitude information that collected by GPS terminal. According to it, the personal positioning information can be also obtained, which is especially useful for monitor of Kids and old people. © 2012 IEEE. (10 refs)
Main heading: Geographic information systems
Controlled terms: Application programs - Information use - Computer programming languages - Information systems
Uncontrolled terms: Active X - LabViEW - LabVIEW programming - Personnel positioning - Positioning information - Realization process - Secondary development - Spatial information systems
Classification Code: 723 Computer Software, Data Handling and Applications - 723.1.1 Computer Programming Languages - 903.2 Information Dissemination - 903.3 Information Retrieval and Use
Database: Compendex
Data Provider: Engineering Village

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278. Assessment of reduction measure for seismic response of bridge decks during near-source earthquakes

Hai, Su (1)
Source: *Advanced Materials Research*, v 356-360, p 2205-2210, 2012, *Progress in Environmental Science and Engineering*; **ISSN:** 10226680; **ISBN-13:** 9783037852675; **DOI:** 10.4028/www.scientific.net/AMR.356-360.2205; **Conference:** 2011 International Conference on Energy, Environment and Sustainable Development, ICEESD 2011, October 21, 2011 - October 23, 2011; **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Petroleum Resources, Xi'An Shiyou University, Xi'an, Shanxi, China
Abstract: During the strong near-source ground motions, adjacent bridge decks often collide each other because of the insufficient separations. Pounding can cause severe bridge damage, or even result in unseating if the seating length is not enough. In this study, the bridge structure is modeled by a finite element method. The subsoil is represented by steel springs and viscous dampers. The considered reduction measure consists of steel springs with additional friction element. The nonlinear analysis is performed in the time domain. The considered earthquakes are the 1994 Northridge earthquake and the 1995 Kobe earthquake. The reduction of the relative displacement and pounding forces of the two bridge decks is investigated. The investigations reveal that the proposed reduction measure can be used to reduce the seismic responses between two bridge decks with their neighboring abutments. © (2012) Trans Tech Publications, Switzerland. (12 refs)
Main heading: Soils
Controlled terms: Finite element method - Time domain analysis - Earthquakes - Bridge decks - Seismic response - Nonlinear analysis
Uncontrolled terms: Additional friction - Bridge damage - Bridge structures - Ground motions - Kobe earthquake - Northridge earthquakes - Relative displacement - Time domain - Unseating - Viscous dampers
Classification Code: 401.1 Bridges - 483.1 Soils and Soil Mechanics - 484 Seismology - 484.2 Secondary Earthquake Effects - 921 Mathematics - 921.6 Numerical Methods
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

279. Gapless acoustic transfer model of period drill pipes

Zhou, Jing (1); Xie, Haiming (1)
Source: *Lecture Notes in Electrical Engineering*, v 128 LNEE, n VOL. 5, p 745-750, 2012, *Recent Advances in Computer Science and Information Engineering*; **ISSN:** 18761100, **E-ISSN:** 18761119; **ISBN-13:** 9783642257919; **DOI:** 10.1007/978-3-642-25792-6-113; **Conference:** 2nd World Congress on Computer Science and Information Engineering, CSIE 2011, June 17, 2011 - June 19, 2011; **Publisher:** Springer Verlag
Author affiliation: (1) Downhole Measuring and Control Laboratory, Xi'an Shiyou University, Xi'an, China
Abstract: The technology of bi-directional data transmission between the well bottom and ground plays an increasingly important role in modern drilling technology while drilling. This article has been starting the research of cyclical drill string sound wave which contains various special pipe, has been setting up the seamless transmission model of drilling string sound wave,the model is used to transmit the drilling string sound wave for different kinds of combination of drilling tool, adopting equivalent thorough physics sound film to illustrate transmission and reflection of the sound wave in receiving hoop, and calculating passage characteristic property of the sound wave which is transmitting in drilling string to strive a better basis for the future development of pertinent instruments. © 2012 Springer-Verlag Berlin Heidelberg. (9 refs)
Main heading: Drills
Controlled terms: Data transfer - Drill strings - Acoustics
Uncontrolled terms: Acoustic transfer - Bi-directional data transmission - Channel property - Characteristic properties - Drilling strings - Drilling technology - Seamless transmissions - While drillings
Classification Code: 511.2 Oil Field Equipment - 603.2 Machine Tool Accessories - 751 Acoustics, Noise. Sound
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

280. An application of RBF neural networks for petroleum reservoir characterization

Tian, Yajuan (1); Zhang, Qinghong (2); Cheng, Guojian (3); Liu, Xuanchao (1)

Source: *Proceedings - 2012 3rd Global Congress on Intelligent Systems, GCIS 2012*, p 95-99, 2012, *Proceedings - 2012 3rd Global Congress on Intelligent Systems, GCIS 2012*; **ISBN-13:** 9780769548609; **DOI:** 10.1109/GCIS.2012.75; **Article number:** 6449493; **Conference:** 2012 3rd Global Congress on Intelligent Systems, GCIS 2012, November 6, 2012 - November 8, 2012; **Sponsor:** Wuhan University of Technology; **Publisher:** IEEE Computer Society
Author affiliation: (1) School of Electronic Engineering, Xi'an Shiyou University, Xi'an 710065, China (2) Department of Computer Science, Xi'an Aeronautical University, Xi'an 710077, China (3) School of Computer Science, Xi'an Shiyou University, Xi'an 710065, China
Abstract: The parameter calculation relating to petroleum reservoir characterization and lithologic identification based on RBF neural networks is studied in this paper. Two models for reservoir permeability prediction and lithologic identification have been constructed and are applied to predict the unknown samples. The prediction result of reservoir permeability has a higher consistency with the practical cases. The parameter prediction and lithologic identification precision have been greatly improved compared to the traditional BP neural networks. The results show that the RBF neural network is very promising for the application of petroleum reservoir characterization. © 2012 IEEE. (9 refs)
Main heading: Forecasting
Controlled terms: Petroleum reservoir engineering - Mechanical permeability - Parameter estimation - Radial basis function networks
Uncontrolled terms: BP neural networks - Lithologic identification - Parameter calculation - Parameter prediction - Permeability prediction - Petroleum reservoir characterization - Reservoir characterization - Reservoir permeability
Classification Code: 512.1.2 Petroleum Deposits : Development Operations
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

281. Slider-crank type cluster wells pumping motion and dynamics analysis

Ren, Tao (1); Liao, Dongsheng (1); Qu, Wentao (1); Sun, Wen (1)
Source: *Advanced Materials Research*, v 479-481, p 808-812, 2012, *Advanced Mechanical Design*; **ISSN:** 10226680; **ISBN-13:** 9783037853726; **DOI:** 10.4028/www.scientific.net/AMR.479-481.808; **Conference:** 3rd international Conference on Manufacturing Science and Engineering, ICMSE 2012, March 27, 2012 - March 29, 2012; **Sponsor:** Fujian University of Technology; Xiamen University; Fuzhou University; Huaqiao University; University of Wollongong; **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Mechanical Engineering, Xi'an Shiyou University, Shaanxi, Xi'an, 710065, China
Abstract: At present, one pumping corresponding one oil well exploitation pattern has been unable to meet the cluster well oil recovery characteristics of muti-well platform. Single-well pumping unit's torque factor is too large, resulting in the peak of the net torque of the crank shaft is too large and the fluctuation is too large, which lead to the increasing of the pumping consumption. Slider-crank type cluster well pumping unit can realize a pumping unit driving several wells pumping and make use of the principle of rod load balancing each other, no need of special balance block, having good balance effect, the crankshaft net torque having smaller peak and energy saving effect is obvious. Proposing the cluster well pumping unit design program based on slider-crank type mechanism, establishing the corresponding motion and dynamic analysis equation and analyzing the performance of slider-crank type cluster well pumping unit based on the actual load conditions. © (2012) Trans Tech Publications. (6 refs)
Main heading: Crankshafts
Controlled terms: Oil well flooding - Pumps - Energy conservation
Uncontrolled terms: Cluster well - Dynamics analysis - Energy-saving effect - Load condition - Motion and dynamics analysis - Oil recoveries - Program design - Pumping unit
Classification Code: 511.1 Oil Field Production Operations - 525.2 Energy Conservation - 601.2 Machine Components - 618.2 Pumps
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

282. Research and exploration of high energy gas fracturing stimulation integrated technology in Chinese shale gas reservoir

Wu, Jinjun (1); Liu, Licai (1); Zhao, Guohua (1); Chu, Xiaosan (1)
Source: *Advanced Materials Research*, v 524-527, p 1532-1536, 2012, *Natural Resources and Sustainable Development II*; **ISSN:** 10226680; **ISBN-13:** 9783037854174; **DOI:** 10.4028/www.scientific.net/AMR.524-527.1532; **Conference:** 1st International Conference on Energy and Environmental Protection, ICEEP 2012, June 23, 2012 - June 24, 2012; **Publisher:** Trans Tech Publications

Author affiliation: (1) College of Petroleum Engineering, Xi'an Shiyou University, Xi'an, Shaanxi, 710065, China
Abstract: The reserves of Chinese shale gas is very rich, but still haven't ever formed a mature technology. According to Chinese shale gas reservoir characteristics, the development technology situation and the principle of high energy gas fracturing, the research and exploration of HEGF stimulation integrated technology which is suitable for the development of Chinese shale gas reservoir need to be carried out. Through a series of analysis and study, compositing high energy gas fracturing technology achievements, this paper discusses the research idea and feasibility of the integrated technology, formed by the liquid gunpowder fracturing technology, in-fracture deeply explosive fracturing technology in low permeability oil layers, composite perforating technology, the multi-pulse fracturing technology and the hydraulic fracturing, simultaneous fracturing, which transforms shale gas reservoir and develops shale gas. Launching field application test is suggested, and studying the way to optimize the theory and design method of integrated technology, so as to promote the development of shale gas. © (2012) Trans Tech Publications. (4 refs)
Main heading: Gases
Controlled terms: Gas permeability - Proven reserves - Low permeability reservoirs - Hydraulic fracturing - Shale gas
Uncontrolled terms: Compositing - Design method - Development technology - Field application - High energy gas fracturing - Integrated technologies - Low permeability oil layer - Multipulses - Shale gas
Classification Code: 512.1 Petroleum Deposits - 512.1.2 Petroleum Deposits : Development Operations - 512.2 Natural Gas Deposits - 522 Gas Fuels - 931.2 Physical Properties of Gases, Liquids and Solids
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

283. Feasibility study on technology named liquid explosive applied in volume fracturing transformation of shale gas reservoir

Wu, Jinjun (1); Liu, Licai (1)
Source: *Advanced Materials Research*, v 538-541, p 2281-2284, 2012, *Materials Processing Technology II*; **ISSN:** 10226680; **ISBN-13:** 9783037854471; **DOI:** 10.4028/www.scientific.net/AMR.538-541.2281; **Conference:** 2nd International Conference on Advanced Engineering Materials and Technology, AEMT 2012, July 6, 2012 - July 6, 2012; **Publisher:** Trans Tech Publications
Author affiliation: (1) College of Petroleum Engineering, Xi'an Shiyou University, Xi'an, Shaanxi, 710065, China
Abstract: According to Chinese shale gas reservoir characteristics and its exploitation situation, based on principle of high energy gas fracturing, combined with theory on volume transformation technology of shale gas reservoir, the feasibility study of liquid explosive technology applied in volume fracturing transformation of shale gas reservoir is precede. Through analyzing action mechanism of liquid explosive technology, studying forming mechanism about multi-crack system produced in shale gas reservoir, and analyzing shale gas reservoir characteristics and drilling and completion technologies, etc., proving the feasibility of technological principle and process design about liquid explosive technology applied in volume transformation of shale gas reservoir, meanwhile, proposing the design adopts the technology combined hydraulic fracturing and liquid explosive together. Also advising to establish theoretical model and optimization design method through series of studying and experiments, and to do field test application, so as to provide a new technology way for its exploration and exploitation. © (2012) Trans Tech Publications, Switzerland. (4 refs)
Main heading: Liquids
Controlled terms: Explosive drilling - Explosives - Hydraulic fracturing - Planning - Shale - Technology
Uncontrolled terms: Action mechanisms - Drilling and completion - Exploration and exploitation - Feasibility - Feasibility studies - Field test - Forming mechanism - High energy gas fracturing - Multi-crack - Optimization design - Shale gas - Theoretical models - Transformation technologies - Volume transformation
Classification Code: 931.2 Physical Properties of Gases, Liquids and Solids - 901 Engineering Profession - 804 Chemical Products Generally - 512.1.2 Petroleum Deposits : Development Operations - 505 Mines and Mining, Nonmetallic - 502.1 Mine and Quarry Operations - 403 Urban and Regional Planning and Development
Database: Compendex
Data Provider: Engineering Village
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284. Design and technology of all-welded longitudinal seam sand control liner

Liu, Xiaoliu (1)
Source: *Advanced Materials Research*, v 479-481, p 957-962, 2012, *Advanced Mechanical Design*; **ISSN:** 10226680; **ISBN-13:** 9783037853726; **DOI:** 10.4028/www.scientific.net/AMR.479-481.957; **Conference:** 3rd international Conference on Manufacturing Science and Engineering, ICMSE 2012, March 27, 2012 - March 29, 2012; **Sponsor:**

Fujian University of Technology; Xiamen University; Fuzhou University; Huaqiao University; University of Wollongong;
Publisher: Trans Tech Publications
Author affiliation: (1) School of Material and Engineering, Xi'an Shiyou University, Xi'an 710065, China
Abstract: The new longitudinal seam pipe-type screen is designed, in order to avoid wire disorder and damage of wire wrapped the screen passes the bending zone in the heavy in dined well or horizorital well. The new longitudinal seam pipe-type screen cut outboard is narrow and the other is wide, so it is hard to be built up. It can clean by itself. it has high efficiency of sand control, equality gap, big circulation area, better corrosion resistance and longer service life. The application of slotted liner's area of oil pass is bigger than the same specification's application of slotted liner by four to seven times. The application of slotted liner holds true to extract oil in the horizontal and high-angle well which is the grains of sand's diameter is bigger than the 0.15 to 0.3mm. The design of construction is up to the mustard construction under the well. It is safer and more reliable in the well completion. © (2012) Trans Tech Publications. (6 refs)
Main heading: Corrosion resistance
Controlled terms: Sand - Wire - Well completion - Manufacture
Uncontrolled terms: Design and technology - High angle wells - Longitudinal seam pipe-type screen - Sand control - The application of slotted liner - Wire wrapped screen
Classification Code: 483.1 Soils and Soil Mechanics - 535.2 Metal Forming - 537.1 Heat Treatment Processes - 539.1 Metals Corrosion - 913.4 Manufacturing
Database: Compendex
Data Provider: Engineering Village
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285. Experimental study on ultrasonic vibration drilling of titanium alloy micro-hole

Liu, Zhanfeng (1); Zhang, Huanchang (1)
Source: *Advanced Materials Research*, v 588-589, p 1877-1880, 2012, *Advances in Mechanics Engineering*; **ISSN:** 10226680; **ISBN-13:** 9783037855287; **DOI:** 10.4028/www.scientific.net/AMR.588-589.1877; **Conference:** 2012 International Conference on Advances in Mechanics Engineering, ICAME 2012, August 3, 2012 - August 5, 2012;
Publisher: Trans Tech Publications
Author affiliation: (1) School of Mechanical Engineering, Xi'an Shiyou University, Xi'an, Shaanxi (710065), China
Abstract: Through the analysis of the basic principles of vibration drilling and vibration drilling process, in the drilling device and the cutting parameter sides, combined with the actual structure of the workpiece as well as the ultrasonic vibration drilling processing methods to elaborate, using the ultrasonic vibration drilling device to carry out the TC4 titanium alloy micro-hole drilling test. The test prove that selecting reasonable cutting parameters can solve the problem of drillingTC4 titanium alloy micro-hole that size is #1.5mm × 12mm, fully reflects the superiority of the ultrasonic vibration drilling. A new method was afforded for titanium alloy micro-hole drilling. © (2012) Trans Tech Publications, Switzerland. (2 refs)
Main heading: Titanium alloys
Controlled terms: Ultrasonic waves - Vibration analysis - Turning - Ultrasonic effects - Cutting
Uncontrolled terms: Basic principles - Cutting parameters - Drilling tests - Experimental studies - Micro holes - Processing method - TC4 titanium alloy - Ultrasonic vibration - Vibration drilling
Classification Code: 542.3 Titanium and Alloys - 604.2 Machining Operations - 753.1 Ultrasonic Waves
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

286. Experiment on nano-modified urushiol titanium anti-corrosion coating of the top heat exchanger of Atmospheric Tower

Fan, Yuguang (1); Liu, Guoqing (1); Chen, Bing (1); Zhou, Sanping (1); Lin, Hongxian (1)
Source: *Advanced Materials Research*, v 396-398, p 924-928, 2012, *Advances in Chemical Engineering*; **ISSN:** 10226680; **ISBN-13:** 9783037853085; **DOI:** 10.4028/www.scientific.net/AMR.396-398.924; **Conference:** 2011 International Conference on Chemical, Material and Metallurgical Engineering, ICCMME 2011, December 23, 2011 - December 25, 2011; **Sponsor:** Guangxi University; Wuhan University of Science and Technology; Queensland University of Technology; **Publisher:** Trans Tech Publications
Author affiliation: (1) College of Mechanical Engineering, Xi'An Shiyou University, Xi'an Shaanxi, 710065, China
Abstract: Experiments were carried out on the heat resistance, corrosion-resistance and adhesion performance of the nano-modified urushiol titanium antiseptic paint on the top heat exchanger of Atmospheric Tower. Through the experiment, it can be found that the corrosion resistance in the environment of HCl-H 2S-H2O can be effectively

improved by adding a certain amount of nano-SiO2 into urushiol coating made of titanium the top heat exchanger of Atmospheric Tower for modification. (10 refs)
Main heading: Towers
Controlled terms: Corrosion resistance - Titanium - Heat exchangers - Silica - Corrosion resistant coatings - Atmospheric corrosion - Chlorine compounds - Heat resistance
Uncontrolled terms: Adhesion performance - Anti-corrosion coating - Nano- SiO - Nano-modification
Classification Code: 402.4 Towers - 443.1 Atmospheric Properties - 539.1 Metals Corrosion - 539.2 Corrosion Protection - 542.3 Titanium and Alloys - 616.1 Heat Exchange Equipment and Components
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

287. Depositional system of submarine fan of well LW3-1-1, Zhujiang Formation

Xiao, Ling (1); Wei, Qin-Lian (1)
Source: *Advanced Materials Research*, v 518-523, p 5605-5610, 2012, *Advances in Environmental Science and Engineering*; **ISSN:** 10226680; **ISBN-13:** 9783037854167; **DOI:** 10.4028/www.scientific.net/AMR.518-523.5605; **Conference:** 1st International Conference on Energy and Environmental Protection, ICEEP 2012, June 23, 2012 - June 24, 2012; **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Petroleum Resources, Xi'an Shiyou University, Xi'an 710065, Shanxi, China
Abstract: LW3-1-1 located in Baiyun sag of Zhujiang River mouth basin is a potential area for oil and gas submarine Fan based on a detailed study of petrologic and paleontological assemblage characteristics. The fan have developed granular flow, sandy debris flow, low -density turbidity flow and other gravity currents along the slope. Sandy debris flow is the mainly sedimentary type of channel sand bodies of the deepwater fans, and there are also reverse grading, positive grading, parallel bedding and horizontal bedding. In addition, many liquefaction and fluidization structures and biological escape trace in graded bedding as well as abundant burrow pores and bioturbation in horizontal bedding are observed. Based on analysing sedimentary facies, the depositional model of sandy grain flow-debris flow of proximal of marine turbidity fan under the background of initial transgression is proposed for the Zhujiang Formation. © (2012) Trans Tech Publications, Switzerland. (7 refs)
Main heading: Grading
Controlled terms: Submarines - Fluidization - Fluid mechanics - Turbidity - Deposition - Gravitation - Sedimentology - Debris
Uncontrolled terms: Assemblage characteristics - Baiyun sag - Bioturbation - Channel sand body - Debris flows - Deepwater - Depositional models - Depositional system - Fluidization structures - Granular flows - Gravity currents - Oil and gas - Sandy grains - Sedimentary facies - Sedimentary structure - Submarine fans - Zhujiang
Classification Code: 481.1 Geology - 672.1 Combat Naval Vessels - 741.1 Light/Optics - 802.3 Chemical Operations - 931.1 Mechanics - 931.5 Gravitation, Relativity and String Theory
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

288. Study on the electric processing characteristics of difficult-to-cut materials

Peng, Hai (1); Zhang, Qianyao (1)
Source: *Advanced Materials Research*, v 472-475, p 940-944, 2012, *Advanced Manufacturing Technology*; **ISSN:** 10226680; **ISBN-13:** 9783037853702; **Conference:** 3rd international Conference on Manufacturing Science and Engineering, ICMSE 2012, March 27, 2012 - March 29, 2012; **Sponsor:** Fujian University of Technology; Xiamen University; Fuzhou University; Huaqiao University; University of Wollongong; **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Mechanical Engineering, Xi'an Shiyou University, Xi'an, Shanxi (710065), China
Abstract: This paper analyzes the mechanism of EDM and the machining characteristics of difficult-to-cut materials. Analyzes the EDM parameter selection and the influences from electric parameters to electrode wear and processing speed in EDM. Through the test of electric machining difficult-to-cut materials, the degree of influence that electric parameters to electrode wear, processing speed and processing quality are analyzed. Titanium and stainless steel materials are processed by high-current power. After the processing, analysis and study are carried out on the metallographic structure and mechanical properties of these materials. The test result is satisfactory. © (2012) Trans Tech Publications. (5 refs)
Main heading: Electrodes
Controlled terms: Electric network parameters
Uncontrolled terms: Difficult-to-cut materials - EDM - Electric parameters - Electrode wear - High-current - Machining characteristics - Metallographic structure - Parameter selection - Processing quality - Processing speed

Classification Code: 703.1 Electric Networks
Database: Compendex
Data Provider: Engineering Village
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289. Research on the affective factors on passive film of atmospheric tower 304 stainless steel

Chen, Bing (1); Wu, Changjiang (1); Fan, Yuguang (1); Feng, Bin (1)
Source: *Applied Mechanics and Materials*, v 161, p 190-193, 2012, *Advanced Materials and Engineering Applications*; **ISSN:** 16609336, **E-ISSN:** 16627482; **ISBN-13:** 9783037853924; **DOI:** 10.4028/www.scientific.net/AMM.161.190; **Conference:** 2012 SREE Conference on Advanced Materials and Engineering Applications, AMEA 2012, May 5, 2012 - May 6, 2012; **Sponsor:** Society for Resources, Environment and Engineering (SREE); **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Mechanical Engineering, Xi'an Shiyou University, Xi'an, Shannxi, 710065, China
Abstract: On condition that the surface of 304 stainless steel has formed passive film, we have done research on the impact that the change of concentration of Cl- and Na+, the temperature, pH of Na+, on 304 stainless steel properties. This experiment is preceded studied with electrochemical method. The results show that along with the increase of temperature, pH improves the repairing capacity of passive film on the surface of 304 stainless steel. However, its stability decreases. Meantime, the pitting corrosion will happen become easier, when the repairing capacity of passive film and stability have been weakened because of the concentration of Na+, Cl- increases. © (2012) Trans Tech Publications, Switzerland. (4 refs)
Main heading: Austenitic stainless steel
Controlled terms: Pitting - Repair - Steel corrosion
Uncontrolled terms: 304 stainless steel - Affective factors - Electrochemical - ELectrochemical methods - Passive films
Classification Code: 539.1 Metals Corrosion - 545.3 Steel - 913.5 Maintenance
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

290. Synthesis and surface properties of a novel switchable Bolaform surfactant

Zhang, Keliang (1, 2); Zhang, Ningsheng (3); Qu, Chentun (2)
Source: *Advanced Materials Research*, v 415-417, p 1447-1450, 2012, *Advanced Materials*; **ISSN:** 10226680; **ISBN-13:** 9783037853252; **DOI:** 10.4028/www.scientific.net/AMR.415-417.1447; **Conference:** 2nd International Conference on Advances in Materials and Manufacturing Processes, ICAMMP 2011, December 16, 2011 - December 18, 2011; **Sponsor:** University of Wollongong; Northeastern University; University of Science and Technology Beijing; Hebei Polytechnic University; **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Energy and Power Engineering, Xi'an Jiao Tong University, Shaanxi, 710065, China (2) School of Chemisitry and Chemical Engineering, Xi'an Shiyou University, Shaanxi, 710065, China (3) School of Petroleum Engineering, Xi'an Shiyou University, Shaanxi, 710065, China
Abstract: A kind of the ionic bolaform surfactant was synthesized in four steps, with 4-nitrotoluene as raw materials. Firstly, bis-(2-methyl-4-nitrophenyl)-methane (BMNM) was synthesized using paraformaldehyde as a coupling agent; then, bis-(2-methyl-4-aminophenyl) methane BMAM) was obtained through a reduction reaction of BMNM; in the following step, bis-(2-methyl-4-p-hydroxyazophenyl) methane was prepared through diazotization-coupling reaction; at last, Bolaform surfactant was obtained through a addition reaction of butane sultone and bis-(2-methyl-4-phydroxy-azophenyl)methane. The products were characterized by IR and 1HNMR. The surface tension and UV-Vis absorption and fluorescence spectra of aqueous solution of this Bolaform surfactant were tested. The cis/trans photoisomerization of Bolaform surfactants were studied in DMSO solution at 365nm irradiation, which indicate this Bolaform surfactantis photosentive and easily to control surface activity by photoisomerization. (17 refs)
Main heading: Methane
Controlled terms: Addition reactions - Acetal resins - Solutions - Surface active agents - Coupling agents
Uncontrolled terms: Bolaform - Paraformaldehydes - Reduction reaction - Sulfonate surfactants - Surface activities - Switchable - UV-vis absorptions
Classification Code: 802.2 Chemical Reactions - 803 Chemical Agents and Basic Industrial Chemicals - 804.1 Organic Compounds - 815.1.1 Organic Polymers
Database: Compendex
Data Provider: Engineering Village
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291. Fluid inclusion and micro-FTIR evidence for hydrocarbon charging fluid evolution of the ordovician reservoir of Halahatang depression, the Tarim basin

Xiao, Hui (1, 2); Zhao, Jing-Zhou (1, 2); Yang, Hai-Jun (3); Cai, Zhen-Zhong (3); Zhu, Yong-Feng (3); Gao, Lian-Hua (3); Zhang, Ni (1, 2)
Source: *Diqiu Kexue - Zhongguo Dizhi Daxue Xuebao/Earth Science - Journal of China University of Geosciences*, v 37, n SUPPL. 1, p 163-173, May 2012; **Language:** Chinese; **ISSN:** 10002383; **DOI:** 10.3799/dqkx.2012.S1.016; **Publisher:** China University of Geosciences
Author affiliation: (1) School of Petroleum Resources, Xi'an Shiyou University, Xi'an 710065, China (2) Key Laboratory of Hydrocarbon Accumulation, School of Petroleum Resources, Xi'an Shiyou University, Xi'an 710065, China (3) Petrochina Tarim Oilfield Company, Kuerle 841000, China
Abstract: The evolution of the hydrocarbon charging fluids of the Ordovician reservoir, Halahatang depression and the Tarim basin, was studied by the evidence of inclusion petrography, transmitted light-incident fluorescence, homogenization temperature and Micro-FTIR of the petroleum inclusions. The experiments data show that: firstly, two hydrocarbon charging stages were determined, the peak homogenization temperature of associated saline inclusions were 72.5-78.5°C and 92.1-99.7°C respectively; secondly, the Micro-FTIR data confirm that there generally exist H2O in the petroleum inclusion; furthermore, the ratio of H2O/(CH2+CH3) in the primary hydrocarbon inclusions is larger (4.6-2.1) than the ratio (1.1-0.4) in the secondary hydrocarbon inclusions, and the maturity of the primary hydrocarbon inclusions (CH2/CH3 ratio is 7.3-4.5) is lower than the maturity of the secondary hydrocarbon inclusions (CH2/CH3 ratio is 2.9-1.9); lastly, sulf-alcohols compounds generally exist in the primary hydrocarbon inclusions, but do not exist in the secondary hydrocarbon inclusions. Compared with geochemistry data of the Ordovician hydrocarbon, sulf-alcohols compounds were the product of the early reservoir biodegradation having occurred in early-Hercynian, and in the late-Hercynian, the higher maturity hydrocarbon largely generated charges and mixes with the early hydrocarbon, which causes the content of the sulf-alcohols decreased. At the same time, part of the sulf-alcohols cracks to generate H2S. (53 refs)
Main heading: Hydrocarbons
Controlled terms: Geochemistry - Incident light - Petrography - Mineralogy - Biodegradation - Fluid inclusion
Uncontrolled terms: Charging fluids - Fluid inclusion - Halahatang depression - Homogenization temperatures - Micro-FTIR - Ordovician reservoir - Petroleum inclusions - Transmitted light
Classification Code: 461.8 Biotechnology - 481.1.2 Petrology (Before 1993, use code 482) - 481.2 Geochemistry - 482 Mineralogy - 631 Fluid Flow - 741.1 Light/Optics - 801.2 Biochemistry - 804.1 Organic Compounds
Database: Compendex
Data Provider: Engineering Village
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292. Research progress of unsupported nano catalyst

Li, Yahong (1); Zhu, Yuqin (1)
Source: *Advanced Materials Research*, v 550-553, p 284-291, 2012, *Advances in Chemical Engineering II*; **ISSN:** 10226680; **ISBN-13:** 9783037854556; **DOI:** 10.4028/www.scientific.net/AMR.550-553.284; **Conference:** 2nd International Conference on Chemical Engineering and Advanced Materials, CEAM 2012, July 13, 2012 - July 15, 2012; **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Chemistry and Chemical Engineering, Xi'an Shiyou University, Xi'an, China
Abstract: Unsupported MoS2 hydrodesulfurization(HDS) catalysts is sulfide in its original state so there is no need to add toxic sulfur compounds to presulfurize the hydrogenation catalyst which has ultra-high capacity to HDS and causing attentions. This paper focuses on summarizing the preparation characterization and desulfurization mechanism of unsupported nano MoS2 catalyst and provides its future research directions. © (2012) Trans Tech Publications Switzerland. (29 refs)
Main heading: Nanocatalysts
Controlled terms: Hydrodesulfurization - Molybdenum compounds - Sulfur compounds - Layered semiconductors
Uncontrolled terms: Future research directions - Hydro desulfurizations - Hydrogenation catalyst - Hydrotreating - MoS2 - Nano-catalyst - Research progress - Ultra-high - Unsupported catalysts
Classification Code: 712.1 Semiconducting Materials - 761 Nanotechnology - 802.3 Chemical Operations
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

293. Experimental study of influence factors on carbon dioxide corrosion

Wang, Jingang (1); Gao, Hao (1)

Source: *Advanced Materials Research*, v 468-471, p 1702-1705, 2012, *Automation Equipment and Systems*; **ISSN:** 10226680; **DOI:** 10.4028/www.scientific.net/AMR.468-471.1702; **Conference:** 3rd international Conference on Manufacturing Science and Engineering, ICMSE 2012, March 27, 2012 - March 29, 2012; **Sponsor:** Fujian University of Technology; Xiamen University; Fuzhou University; Huaqiao University; University of Wollongong; **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Mechanical Engineering, Xi'an shiyou University, Xi'an, Shaanxi, 710065, China
Abstract: CO2 corrosion is more prominent in the petrochemical industry, for different influencing factors of CO2 corrosion, 1Cr18Ni9Ti, 316L, TA2, Q235, 45 steel materials are selected for the study. Using immersion experiment and electrochemical experiment to study the corrosion behavior of these experimental materials in CO2 environment under different external conditions. We finally obtain the law of influence of the temperature, pH, concentration of chlorine ion and alloy elements on the CO2 corrosion. © (2012) Trans Tech Publications. (4 refs)
Main heading: Carbon dioxide
Controlled terms: Ternary alloys - Chromium alloys - Corrosive effects - Titanium alloys - Electrochemical corrosion - Steel corrosion
Uncontrolled terms: 1Cr18Ni9Ti - 45 steel - Alloy element - Carbon dioxide corrosion - Chlorine ions - Corrosion behavior - Electrochemical experiment - Electrochemical experiments - Experimental materials - Experimental studies - External conditions - Influence Factors - Influencing factor - Petrochemical industry
Classification Code: 539.1 Metals Corrosion - 542.3 Titanium and Alloys - 543.1 Chromium and Alloys - 545.3 Steel - 801.4.1 Electrochemistry - 802.2 Chemical Reactions - 804.2 Inorganic Compounds
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

294. The hot-plugging clamp design of the petrochemical equipment pipeline

Wang, Jingang (1); Fan, Fujing (1)
Source: *Advanced Materials Research*, v 550-553, p 3206-3209, 2012, *Advances in Chemical Engineering II*; **ISSN:** 10226680; **ISBN-13:** 9783037854556; **DOI:** 10.4028/www.scientific.net/AMR.550-553.3206; **Conference:** 2nd International Conference on Chemical Engineering and Advanced Materials, CEAM 2012, July 13, 2012 - July 15, 2012; **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Mechanical Engineering, Xi'an Shiyou University, Xi'an, Shaanxi (710065), China
Abstract: Liquid leaking accidents of petrochemical equipment were always happened in weld joint of the pipeline. In order to deal with the accidents, the hot-plugging technique was adopted. And the clamp design which was the difficult point of this technology must be valued. In this paper, the hot-plugging technique and the structure of the clamp were introduced. And the calculation formula of the clamp thickness was deduced based on the influence of the injecting hole on the clamp and GB150-98. And the results would be the fundament of further study of the hot-plugging clamp design. © (2012) Trans Tech Publications, Switzerland. (3 refs)
Main heading: Welds
Controlled terms: Petrochemicals - Pipelines - Welding - Accidents
Uncontrolled terms: Calculation formula - Hot-plugging technique - Petrochemical equipment - Weld joints
Classification Code: 513.3 Petroleum Products - 538.2 Welding - 619.1 Pipe, Piping and Pipelines - 804.1 Organic Compounds - 914.1 Accidents and Accident Prevention
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

295. Design research on the composite process of consecutive perforation-strong pulse fracturing for multiple oil layers and thick interlayer

Wu, Jinjun (1); Liu, Licai (1); Zhao, Guohua (1); Chu, Xiaosan (1)
Source: *Advanced Materials Research*, v 482-484, p 343-347, 2012, *Advanced Composite Materials*; **ISSN:** 10226680; **DOI:** 10.4028/www.scientific.net/AMR.482-484.343; **Conference:** 3rd international Conference on Manufacturing Science and Engineering, ICMSE 2012, March 27, 2012 - March 29, 2012; **Sponsor:** Fujian University of Technology; Xiamen University; Fuzhou University; Huaqiao University; University of Wollongong; **Publisher:** Trans Tech Publications
Author affiliation: (1) College of Petroleum Engineering, Xi'An Shiyou University, Xi'an, Shaanxi, 710065, China
Abstract: Currently, most of Chinese oil companies have getting in the later production period, the oil wells are processed frequently and the cost is increasing. In view of the higher problems existed popular in the oil fields such as multiple layers, big interlayer, the technology composited perforation and high energy gas fracturing has to construct with every layer alone, operate long time, cost high. The author puts forward the design research on the

composite process of consecutive perforation-strong pulse fracturing for multiple oil layers and thick interlayer This paper introduces the basic design principle and technology method. The design is realized by using the technology of the perforation-symmetrical overpressure fracturing technology, the multi-pulse multistage fracturing, to efficiently guarantee the effect of perforating and pulse fracturing in every layer. The designed multistage detonating device makes the once completed construction technology used in the single well of the multiple oil layers with big interlayer come true. The field test application has gained good effects, greatly reduced the construction cost, and also promoted the application and generalization of the technology composited perforation and high energy gas fracturing. © (2012) Trans Tech Publications, Switzerland. (3 refs)
Main heading: Costs
Controlled terms: Oil wells - Design - Oil field development - Perforating - Well perforation
Uncontrolled terms: Composite process - Construction costs - Construction technologies - Design Principles - Design research - Field test - High energy gas fracturing - Multi-control process - Multiple layers - Multiple oil layers - Multipulses - Oil companies - Overpressure - Single well - Thick interlayer
Classification Code: 512.1.1 Oil Fields - 512.1.2 Petroleum Deposits : Development Operations - 911 Cost and Value Engineering; Industrial Economics
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

296. Reduction measure for 3-D structure during near-source ground motions (*Open Access*)

Hai, Su (1)
Source: *Energy Procedia*, v 14, p 1613-1617, 2012, *2011 2nd International Conference on Advances in Energy Engineering, ICAEE 2011*; **ISSN:** 18766102; **DOI:** 10.1016/j.egypro.2011.12.1020; **Conference:** 2011 2nd International Conference on Advances in Energy Engineering, ICAEE 2011, December 27, 2011 - December 28, 2011; **Sponsor:** Asia Pacific Human-Computer Interaction Research Center; **Publisher:** Elsevier Ltd
Author affiliation: (1) School of Petroleum Resources, Xi'an Shiyou University, Xi'an, Shanxi, 710065, China
Abstract: In this study an approach for reducing the influence of the strong long-period pulses as well as the effect of the simultaneous ground excitation on a three-dimensional (3D) frame structure is presented. The considered ground excitation is the 1995 Kobe earthquake and the 1999 Turkey earthquake. The investigation reveals that the common base isolators are not reducing the response of the structure in the case of the near-source earthquakes with long period impulses. Even they can amplify the response of the structure. By modifying the fundamental natural mode of the structure, we can reduce the effect of the strong pulses of the horizontal ground motion. The improvement of the dynamics of the structure is achieved with the combination of the lateral elastic spring and the viscous damper at the first story level of the structure and the base isolation. The proposed approach reduces not only the displacement but also the activated forces in the structural members. © 2011 Published by Elsevier Ltd. (7 refs)
Main heading: Springs (components)
Uncontrolled terms: Elastic springs - Ground excitation - Long period pulse - Response - Viscous dampers
Classification Code: 601.2 Machine Components
Funding Details: Number: YS29030403, Acronym: XSYU, Sponsor: Xi'an Shiyou University;
Funding text: The study is supported by the Xi'an Shiyou University under Award Number YS29030403. The authors gratefully acknowledge these supports.
Open Access type(s): All Open Access, Gold
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

297. A study on salt effect on treatment of oily wastewater using microwave radiation

Huayi, Jiang (1); Ji, Cheng (1); Cao, Qiue (1); Yang, Ruiya (1); Zhi, Huan (1); Zhang, Yinan (1)
Source: *Advanced Materials Research*, v 361-363, p 561-564, 2012, *Natural Resources and Sustainable Development*; **ISSN:** 10226680; **ISBN-13:** 9783037852682; **DOI:** 10.4028/www.scientific.net/AMR.361-363.561; **Conference:** 2011 International Conference on Energy, Environment and Sustainable Development, ICEESD 2011, October 21, 2011 - October 23, 2011; **Publisher:** Trans Tech Publications
Author affiliation: (1) Department of Petroleum Engineering, Xi'An Shiyou University, Xi'an, Shaanxi, 710065, China
Abstract: The treatment of oily wastewater by microwave radiation is highly-efficient, low contaminative. In order to improve the effect of processing oily wastewater with microwave radiation, the influence of the ionic property, the ionic valency, the ionic concentration and microwave parameter are investigated by experiment. The results show that inorganic salt promotes demulsification under microwave radiation condition. The lower the ionic valency is, the better the deoiling effect is. The deoiling rate increases in a certain range with concentration of inorganic salt increasing, and

it also has the optimum microwave parameters. When oily wastewater is disposed by microwave radiation after adding inorganic salt, the deoiling rate is up to 97.78%. © (2012) Trans Tech Publications, Switzerland. (4 refs)
Main heading: Microwaves
Controlled terms: Wastewater treatment
Uncontrolled terms: Inorganic salts - Ionic concentrations - Ionic properties - Microwave parameters - Microwave radiations - Oily wastewater - Rate increase - Salt effect - Valencies
Classification Code: 452.4 Industrial Wastes Treatment and Disposal - 711 Electromagnetic Waves
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

298. Use BP neural network set up the corrosion prediction model of low temperature parts of atmospheric pressure device

Fan, Yu Guang (1); Piao, Zai Dong (1); Chen, Bing (1); Lin, Hong Xian (1); Yang, Yang (1)
Source: *Applied Mechanics and Materials*, v 152-154, p 1138-1142, 2012, *Mechanical Engineering and Materials: ICMEM 2012*; **ISSN:** 16609336, **E-ISSN:** 16627482; **ISBN-13:** 9783037853528; **DOI:** 10.4028/www.scientific.net/AMM.152-154.1138; **Conference:** 2012 International Conference on Mechanical Engineering and Materials, ICMEM 2012, January 15, 2012 - January 16, 2012; **Publisher:** Trans Tech Publications
Author affiliation: (1) College of Mechanical Engineering, Xi'an Shiyou University, Xi'an Shaanxi, 710065, China
Abstract: In research of the low temperature parts of atmospheric pressure device, by using BP neural network, the connection of PH value, Cl-, H 2S and Fe+2 was setup which can predict Fe+2 content accurately, and obtain the requirement accuracy, hence more accurate corrosion can be predicted and providing more suggests for corrosion protection. This paragraph includes the DUSHANZI petrochemical atmospheric pressure equipment files, pipeline and the archives of each equipment material content data, and then analysis the corrosion situation, concludes the corrosion types mainly about (1) Low temperature HCl-H2S-H2O corrosion. (2) High temperature naphthenic acid corrosion. (3) High temperature S and H2S corrosion. Among them, the corrosion of the low temperature parts of atmospheric pressure device is seriously affected the safety of the oil production, also it is the main corrosion of atmospheric device. The low temperature parts of DUSHANZI petrochemical atmospheric pressure device will be a training sample of neural network, to build a corrosion prediction model. © (2012) Trans Tech Publications. (3 refs)
Main heading: Neural networks
Controlled terms: Atmospheric temperature - Pipeline corrosion - Corrosion protection - High temperature corrosion - Chlorine compounds - Atmospheric pressure - Atmospheric corrosion - Iron compounds - Petrochemicals
Uncontrolled terms: BP neural networks - Corrosion prediction - Corrosion types - High temperature - Low temperatures - Material content - Naphthenic acid - Oil production - pH value - Predict - Training sample
Classification Code: 443.1 Atmospheric Properties - 513.3 Petroleum Products - 539.1 Metals Corrosion - 539.2 Corrosion Protection - 804.1 Organic Compounds
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

299. Optimum design of double-well pumping units based on calculation of MATLAB optimization toolboxes

Qu, Wentao (1); Liao, Dongsheng (1); Ren, Tao (1); Sun, Wen (1)
Source: *Advanced Materials Research*, v 479-481, p 694-698, 2012, *Advanced Mechanical Design*; **ISSN:** 10226680; **ISBN-13:** 9783037853726; **DOI:** 10.4028/www.scientific.net/AMR.479-481.694; **Conference:** 3rd international Conference on Manufacturing Science and Engineering, ICMSE 2012, March 27, 2012 - March 29, 2012; **Sponsor:** Fujian University of Technology; Xiamen University; Fuzhou University; Huaqiao University; University of Wollongong; **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Mechanical Engineering, Xi'an Shiyou University, Shaanxi, Xi'an, 710065, China
Abstract: Beam double-well pump unit as a new generation of pumping unit is currently used in mechanical oil production. However, due to a number of pumping system parameters, the conventional design can not achieve the optimal pumping system parameters Using MATLAB simulation optimization algorithms, simulates the structural parameters, rod speed, rod acceleration, rod load, crank torque factors and gear's crank shaft net torque of the double horse head double-well pumping unit, achieving optimal design of double horse head double-well pumping system, with the existing conventional design of double horse head double-well pumping unit, double horse head double-well pumping unit has a great improving than conventional pumping unit in motion and power dynamic characteristics. © (2012) Trans Tech Publications. (5 refs)
Main heading: MATLAB

Controlled terms: Pumping plants - Pumps
Uncontrolled terms: Conventional design - Conventional pumping units - Crank torque - MATLAB optimization toolbox - Matlab simulations - Oil production - Optimal design - Optimal pumping - Optimum designs - Power dynamics - Pumping systems - Pumping unit - Structural parameter
Classification Code: 446 Waterworks - 618.2 Pumps - 723.5 Computer Applications - 921 Mathematics
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

300. Test study on the multi-pulse loading fracturing technology for development of shallow CBM

Wu, Jinjun (1); Chu, Xiaosan (1); Liu, Licai (1); Zhao, Guohua (1)
Source: *Advanced Materials Research*, v 361-363, p 212-216, 2012, *Natural Resources and Sustainable Development*; **ISSN:** 10226680; **ISBN-13:** 9783037852682; **DOI:** 10.4028/www.scientific.net/AMR.361-363.212; **Conference:** 2011 International Conference on Energy, Environment and Sustainable Development, ICEESD 2011, October 21, 2011 - October 23, 2011; **Publisher:** Trans Tech Publications
Author affiliation: (1) College of Petroleum Engineering, Xi'an Shiyou University, Xi'an, Shaanxi, 710065, China
Abstract: In China, the coal gas formation is characterized as low permeability, low pressure and low water saturation. The coal bed methane (CBM) has strong adsorption and is difficult to develop. Hydraulic fracture is currently the main measure to improve its permeability, drain the liquid and lower the pressure, which promotes desorption of CBM. But it is not efficient. Based on the principle of high energy gas fracturing (HEGF) and the study of new methods, we proposed the test application of the multi-pulse loading fracturing technology for development of shallow CBM. The mechanism of the technology is that it generates high-temperature and high-pressure gas in the target coal bed to produce a long multi-fracture system with effects of multi-pulse loading. It can also produce strong impulse oscillation acting on formation matrix to loose formation pressure, improve the pore connectivity and permeability of coal bed, which promotes pressure drawdown and desorption of CBM. Thus, the goal of increasing the yield of CBM wells is achieved. This paper focuses on the research ideas, mechanism, process design and feasibility. We carried out analysis combined with field test applications. The study provides a new direction to explore new technologies for China's CBM development. © (2012) Trans Tech Publications, Switzerland. (7 refs)
Main heading: Coal bed methane
Controlled terms: Coal - Desorption - Process design - Coal deposits - Methane - Fracture - Design - Mechanical permeability
Uncontrolled terms: Coal bed methane - Coalbed methanes - Coalbeds - Field test - Formation pressure - Gas formation - High energy gas fracturing - High pressure gas - High temperature - Hydraulic fracture - Low permeability - Low pressures - Low water - matrix - Multipulses - New directions - Pore connectivity - Test - Test applications - Test study
Classification Code: 503 Mines and Mining, Coal - 512.2 Natural Gas Deposits - 522 Gas Fuels - 524 Solid Fuels - 802.3 Chemical Operations - 804.1 Organic Compounds - 951 Materials Science
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

301. Experimental research on superlong deep-hole drilling processing technology for beryllium bronze

Liu, Zhanfeng (1); Li, Ruiliang (1)
Source: *Applied Mechanics and Materials*, v 130-134, p 1634-1637, 2012, *Mechanical and Electronics Engineering III*; **ISSN:** 16609336, **E-ISSN:** 16627482; **ISBN-13:** 9783037852866; **DOI:** 10.4028/www.scientific.net/AMM.130-134.1634; **Conference:** 2011 3rd International Conference on Mechanical and Electronics Engineering, ICMEE 2011, September 23, 2011 - September 25, 2011; **Sponsor:** Hefei University of Technology; **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Mechanical Engineering, Xi'an Shiyou University, Xi'an, Shaanxi 710065, China
Abstract: According to the material properties and the cutting performance of beryllium bronze, research into the various factors of cutting, such as the materials heat treatment, the cutting tool material, cutting-tool angle and the cutting parameters, combined with the actual structure of the workpiece and the overlong deep-hole processing method for study. The test proved that selected reasonable heat treatment, processing methods, cutting tools and cutting parameters can be solved #12mm × 4000mm overlong deep-hole processing problems of the beryllium bronze. © (2012) Trans Tech Publications, Switzerland. (2 refs)
Main heading: Bronze
Controlled terms: Cutting tools - Heat treatment - Beryllium - Cutting

Uncontrolled terms: Cutting parameters - Cutting performance - Deep-hole drilling - Experimental research - Material property - Processing method - Processing problems - Processing technologies - Processing technology - Tool materials - Work pieces
Classification Code: 537.1 Heat Treatment Processes - 542.1 Beryllium and Alloys - 544.2 Copper Alloys - 546.2 Tin and Alloys - 549 Nonferrous Metals and Alloys - 603.2 Machine Tool Accessories
Database: Compendex
Data Provider: Engineering Village
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302. The research of the near-dry BTA deep hole processing technology

Peng, Hai (1); Jiang, Weibo (1)
Source: *Key Engineering Materials*, v 522, p 240-244, 2012, *Progress in Advanced Manufacturing Technologies*; **ISSN:** 10139826, **E-ISSN:** 16629795; **DOI:** 10.4028/www.scientific.net/KEM.522.240; **Publisher:** Trans Tech Publications Ltd
Author affiliation: (1) School of Mechanical Engineering, Xi'an Shiyou University, Xi'an, Shanxi 710065, China
Abstract: Dry cutting technology is a new environmentally friendly green process technology. Based on the characteristics of dry cutting and deep-hole processing, a deep-hole processing solution by means of dry cutting technology is presented, that is the near-dry deep hole processing system. Combination of the characteristics of near-dry deep hole processing, we improve the design of tool structure and the selection of blade material, and find the blade material of near-dry deep hole processing by processing testing. Analyzing and testing the cutting performance and processing effect by comparing near-dry and traditional oil processing methods, we achieve a satisfactory result and confirm that the near-dry processing is a green processing technology which has a good processing effect and applying prospect. © (2012) Trans Tech Publications, Switzerland. (5 refs)
Main heading: Cutting
Uncontrolled terms: Applying prospect - Cutting performance - Deep hole processing - Dry processing - Green processing - Near-dry cutting - Processing effects - Tool structure
Classification Code: 951 Materials Science
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

303. Structure optimization and strength analysis of CBM special anti-clogging drainage pump

Qu, Wentao (1); Guo, Yixiao (1); Ren, Tao (1); Sun, Yanping (1)
Source: *Advanced Materials Research*, v 479-481, p 2017-2021, 2012, *Advanced Mechanical Design*; **ISSN:** 10226680; **ISBN-13:** 9783037853726; **DOI:** 10.4028/www.scientific.net/AMR.479-481.2017; **Conference:** 3rd international Conference on Manufacturing Science and Engineering, ICMSE 2012, March 27, 2012 - March 29, 2012; **Sponsor:** Fujian University of Technology; Xiamen University; Fuzhou University; Huaqiao University; University of Wollongong; **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Mechanical Engineering, Xi'an Shiyou University, Shaanxi, Xi'an, 710065, China
Abstract: There are abundant coal bed methane resources in China, and recovery technology is considered a very important part in the development of coal bed methane. At present, coal bed methane production areas are still adopting the tubing liner pump, but because of the special working environment, in the pumping process, the fine breeze (sand) and other solid particles entering into the pump barrel is likely to cause the pump stuck, pipe string buried by sand and other issues. In view of the above problems, based on the ordinary tubing liner pump, through the increase of the anti-litter bypass style traveling valve housing and fixed valve housing, outside liner jacket, sand reservoir and liquid in tee joint measures we developed a new type of CBM special anti-clogging drainage pump and adopted finite element analysis software ANSYS to complete key parts of strength calculation. The use of this pump will effectively reduces the blocking of fine coal particles (sand) and other solid particles, decreases the pump's checking operation and workload of sand bailing, consequently improves efficiency, reduces overall operating costs. © (2012) Trans Tech Publications. (8 refs)
Main heading: Coal bed methane
Controlled terms: Methane - Pumps - Coal deposits - Metal recovery - Natural gas wells - Structural optimization - Tubing - Coal - Finite element method - Operating costs - Housing
Uncontrolled terms: ANSYS - Anti-clogging - Coal bed methane - Drainage pump - Sand reservoir
Classification Code: 403.1 Urban Planning and Development - 503 Mines and Mining, Coal - 512.2 Natural Gas Deposits - 512.2.1 Natural Gas Fields - 522 Gas Fuels - 524 Solid Fuels - 618.2 Pumps - 619.1 Pipe, Piping and

Pipelines - 804.1 Organic Compounds - 911.1 Cost Accounting - 911.2 Industrial Economics - 921.5 Optimization Techniques - 921.6 Numerical Methods
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

304. Influences of dilatancy on rock properties under shock loading

Wang, Jun-Qi (1); Wang, Liang (1); Zhang, Jie (1)
Source: *Baozha Yu Chongji/Explosion and Shock Waves*, v 32, n 3, p 333-336, May 2012; **Language:** Chinese; **ISSN:** 10011455; **Publisher:** Explosion and Shock Waves
Author affiliation: (1) College of Petroleum Engineering, Xi'an Shiyou University, Xi'an 710065, Shaanxi, China
Abstract: Drop-hammer load experiments were performed on different rock samples. By changing the drop hammer weight, drop height and piston rod spacer material, transient shock pressure pulses in the rock samples were recorded by the pressure gauges. Experimental results indicate that the properties of the rocks undergo the following changes induced by dilatancy: (1) the permeability of the rocks increases in varying degrees, and the denser the rock is, the greater the increase multiple of the permeability is; (2) the elastic modulus and elastic limit decrease with the increase of rock volume; (3) the propagation velocities of longitudinal and transverse waves decrease in the rocks; (4) the porosities in the rocks increase due to the extension of the new-produced or inherent micro-cracks in the rocks. (6 refs)
Main heading: Rocks
Controlled terms: Hammers - Drops
Uncontrolled terms: Dilatancy - Impact loads - Pressure gauges - Propagation velocities - Rock properties - Solid mechanics - Spacer materials - Transverse waves
Classification Code: 605.2 Small Tools, Unpowered
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

305. Study on corrosion behaviors of the PTA plant in halogen

Wang, Jingang (1); Gao, Ying (1)
Source: *Applied Mechanics and Materials*, v 217-219, p 496-500, 2012, *Advanced Materials and Process Technology*; **ISSN:** 16609336, **E-ISSN:** 16627482; **ISBN-13:** 9783037855027; **DOI:** 10.4028/www.scientific.net/AMM.217-219.496; **Conference:** 2nd International Conference on Advanced Design and Manufacturing Engineering, ADME 2012, August 16, 2012 - August 18, 2012; **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Mechanical Engineering, Xi'an Shiyou University, Xi'an, Shaanxi (710065), China
Abstract: In the acetic acid solution containing bromine ions, Br- has strong penetration ability, which cause PTA production device serious pitting corrosion, and even perforation failure. This paper use the immersion method and the electrochemical experiment, to study the corrosion behaviors of austenitic stainless steel which is commonly used in equipment 316L and 1Cr18Ni9Ti in the acetic acid solution containing bromide ions. The results show that: In a certain temperature range, as the temperature rising, 316L and 1Cr18Ni9Ti's annual average corrosion depth shows the changing law of type curve. At the start, the annual average corrosion depth increases rapidly, and after the passivation film formation, the rate of increase slows. With the increase of the Br- concentration, 316L and 1Cr18Ni9Ti's corrosion rate increases, but apparently the 316L than 1Cr18Ni9Ti slow growth of many. © (2012) Trans Tech Publications, Switzerland. (5 refs)
Main heading: Steel corrosion
Controlled terms: Acetic acid - Chromium alloys - Pitting - Corrosive effects - pH - Austenitic stainless steel - Passivation - Corrosion rate - Electrochemical corrosion - Ions - Ternary alloys - Bromine - Titanium alloys
Uncontrolled terms: 1Cr18Ni9Ti - Acid solutions - Annual average - Bromide ions - Corrosion behavior - Corrosion depth - Electrochemical experiments - Immersion method - Passivation film - Penetration ability - Rate of increase - Slow growth - Temperature range - Temperature rising - Type curves
Classification Code: 539.1 Metals Corrosion - 539.2.1 Protection Methods - 542.3 Titanium and Alloys - 543.1 Chromium and Alloys - 545.3 Steel - 801.1 Chemistry, General - 801.4.1 Electrochemistry - 802.2 Chemical Reactions - 804.1 Organic Compounds - 804.2 Inorganic Compounds
Database: Compendex
Data Provider: Engineering Village
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306. The analysis of the corrosion parameters' sensitivity of the fractionator overhead recycle system

Fan, Yuguang (1); Piao, Zaidong (1); Chen, Bing (1); Zhou, Sanping (1)
Source: *Advanced Materials Research*, v 590, p 91-94, 2012, *Mechatronic Systems and Materials Application*; **ISSN:** 10226680; **ISBN-13:** 9783037855294; **DOI:** 10.4028/www.scientific.net/AMR.590.91; **Conference:** 2012 International Conference on Mechatronic Systems and Materials Application, ICMSMA 2012, September 8, 2012 - September 9, 2012; **Publisher:** Trans Tech Publications
Author affiliation: (1) College of Mechanical Engineering, Xi'an Shiyou University, Xi'an, Shaanxi, 710065, China
Abstract: The relation model established by artificial neural network that includes 4 corrosive material parameters that are Cl-, H2S, NH3 and pH value and corrosion testing parameter that is Fe2+ of the fractionator overhead recycle system, studied the corrosion sensitivity of the corrosion parameters, has got the sensitive areas, put forward the suitable range of the corrosive material parameters of corrosion control in the production process. The corrosion of catalytic fractionator overhead recycle system has become one of the main factors in the refinery operating smoothly and stable production, not only cause the recycle system equipment damage, shorten the cycle of system safety operation, but also reduce the product quality of the subsequent processing device[1]. The corrosion factors of the fractionator overhead recycle system and their relationships are very complicated, and the combination of corrosive material parameters is diversification, it is very essential that research the corrosion model of the fractionator overhead recycle system and the corrosive material parameters' sensitivity. © (2012) Trans Tech Publications, Switzerland. (2 refs)
Main heading: Neural networks
Controlled terms: Chlorine compounds - Corrosive effects - Iron compounds - Sensitivity analysis - Recycling - Corrosion rate
Uncontrolled terms: Corrosion control - Corrosion factor - Corrosion models - Corrosion parameters - Corrosion testing - Corrosive materials - Equipment damage - Fractionators - pH value - Processing device - Product quality - Production process - Recycle systems - Relation models - Sensitive area - Sensitivity - System safety
Classification Code: 452.3 Industrial Wastes - 539.1 Metals Corrosion - 921 Mathematics
Database: Compendex
Data Provider: Engineering Village
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307. The reservoir plane heterogeneity characteristics of the number 2 of the shanxi Formation in ChangBei gas field, Ordos Basin, China

Wei, Qin-Lian (1); Xiao, Ling (1)
Source: *Advanced Materials Research*, v 524-527, p 81-84, 2012, *Natural Resources and Sustainable Development II*; **ISSN:** 10226680; **ISBN-13:** 9783037854174; **DOI:** 10.4028/www.scientific.net/AMR.524-527.81; **Conference:** 1st International Conference on Energy and Environmental Protection, ICEEP 2012, June 23, 2012 - June 24, 2012; **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Petroleum Resources, Xi'an Shiyou University, Xi'an 710065, Shanxi, China
Abstract: Reservoir plane heterogeneity means the geometry, the scale, the continuity and the plan variation of physical properties of reservoirs, which is one of the main factors influencing the injection-production in oil reservoirs. Therefore, the study of the reservoir plane heterogeneity play a great role in guiding development wells deployment, gas reservoir well nets adjustment and residual oil & gas development. The reservoir heterogeneity of the sandstone size of gas and the border, and unbalanced formation pressure because of the degree of the development of each well is uneven prevent ChangBei gas field to develoment. They cause difficulty of evaluating the gas field comprehensive, level development wells deployment and well trajectory adjustment, and lead to certain geology risk. It is necessary to study the reservoir heterogeneity of the number 2 of shanxi Formation in this block for concerning the unfavourable extraction condition. The composite index of reservoir plane heterogeneity of the number 2 of shanxi Formation in ChangBei gas field have calculated by adopting entropy method considering influcing reservoir plane heterogeneity which is porosity, tight sandstone, mutation coefficient and variation coefficient of permeability, range of permeability and interlayer frequency. The distributive maps of reservoir's plane heterogeneity under the restriction of sedimentary facies have also been drawed. The entropy method can full use of the reduction and strengthen of entropy method, which means the characteristic of removing the similarities and depositing differences. The study indicate that reservoir plane heterogeneity of the number 2 of shanxi Formation in study area presents the medium to slightly strong characteristics in general. © (2012) Trans Tech Publications. (10 refs)
Main heading: Sandstone
Controlled terms: Low permeability reservoirs - Sustainable development - Oil field development - Natural gas fields - Tight gas - Gases - Gas industry - Petroleum reservoir engineering
Uncontrolled terms: Composite index - Development wells - Entropy methods - Extraction conditions - Formation pressure - Gas development - Gas fields - Gas reservoir - Oil reservoirs - Ordos basin , China - Reservoir heterogeneity - Residual oil - Sedimentary facies - Study areas - Tigh treservoirs - Tight sandstones - Variation coefficient - Well trajectory

Classification Code: 482.2 Minerals - 512.1 Petroleum Deposits - 512.1.2 Petroleum Deposits : Development Operations - 512.2 Natural Gas Deposits - 512.2.1 Natural Gas Fields - 522 Gas Fuels
Database: Compendex
Data Provider: Engineering Village
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308. A rack-and-pinion pumping unit design

Peng, Yong (1); Wang, Lei (1)
Source: *Advanced Materials Research*, v 472-475, p 657-661, 2012, *Advanced Manufacturing Technology*; **ISSN:** 10226680; **ISBN-13:** 9783037853702; **Conference:** 3rd international Conference on Manufacturing Science and Engineering, ICMSE 2012, March 27, 2012 - March 29, 2012; **Sponsor:** Fujian University of Technology; Xiamen University; Fuzhou University; Huaqiao University; University of Wollongong; **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Mechanical Engineering, Xi'an Shiyou University, Xi'an, Shanxi, 710065, China
Abstract: This paper presents a rack-and-pinion pumping unit. A type of SRD (switched reluctance driver) motor is utilized as the driving unit of the pumping unit. The rotation direction of the output shaft of the motor can change automatically, without reversing mechanism, so it can directly dive the gear box and then drive the rack-and-pinion in which the rack connected with the suck rod. Additionally, a super capacitor unit and control unit of charge and discharge is used to design the balance of the pumping unit. Due to the special balance design and no crank-rocker mechanism in the rack-and-pinion pumping unit, it has features of simple structure, less floor area, well balanced and high running efficiency. The most important is that the stroke and number of punching can be adjusted in a wide range which can adapt to different oil wells. © (2012) Trans Tech Publications. (16 refs)
Main heading: Pumps
Controlled terms: Mechanisms - Pumping plants
Uncontrolled terms: Balance design - Charge and discharge - Control unit - Crank-rocker mechanism - Floor areas - Gear-boxes - Pumping unit - Rack-and-pinion - Running efficiency - Simple structures - Super capacitor - Switched reluctance
Classification Code: 446 Waterworks - 601.3 Mechanisms - 618.2 Pumps
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

309. Efficiency research of the equipment of water pumping and gas production for CBM well

Ren, Tao (1); Guo, Yixiao (1); Qu, Wentao (1); Sun, Yanping (1)
Source: *Advanced Materials Research*, v 479-481, p 720-724, 2012, *Advanced Mechanical Design*; **ISSN:** 10226680; **ISBN-13:** 9783037853726; **DOI:** 10.4028/www.scientific.net/AMR.479-481.720; **Conference:** 3rd international Conference on Manufacturing Science and Engineering, ICMSE 2012, March 27, 2012 - March 29, 2012; **Sponsor:** Fujian University of Technology; Xiamen University; Fuzhou University; Huaqiao University; University of Wollongong; **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Mechanical Engineering, Xi'an Shiyou University, Shaanxi, Xi'an, 710065, China
Abstract: According to the characteristics of the low efficiency of drainage equipment for coal bed methane wells, we analyzed and calculated the coefficient of fullness, plunger stroke loss, leakage and volume factor, which affect pump efficiency. After analyzing the displacement loss caused by various factors, we obtained coefficient of fullness of the most influential factor on the pump efficiency. By analyzing the change relationship among the coefficient of fullness and clearance space, gas fluid ratio, compression ratio and pumping speed, we found shrinking clearance space and reducing gas fluid ratio, compression ratio and pumping speed can increase coefficient of fullness, and we presented several improvement measures to improve pump efficiency. These measures will enable coal bed methane wells production more stable and efficient. © (2012) Trans Tech Publications. (7 refs)
Main heading: Coal bed methane
Controlled terms: Natural gas wells - Compression ratio (machinery) - Coal - Efficiency - Coal deposits - Methane - Pumps
Uncontrolled terms: Coal bed methane - Coal bed methane wells - Coefficient of fullness - Gas productions - Improvement measure - Influential factors - Pump efficiency - Pumping speed - Reducing gas - Water pumping
Classification Code: 503 Mines and Mining, Coal - 512.2 Natural Gas Deposits - 512.2.1 Natural Gas Fields - 522 Gas Fuels - 524 Solid Fuels - 618.2 Pumps - 804.1 Organic Compounds - 913.1 Production Engineering
Database: Compendex
Data Provider: Engineering Village
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310. Synthesis, crystal structure and spectroscopy of dibutyl ester-ether fluorescein

Zhang, Keliang (1, 2); Zhang, Ningsheng (3); Qu, Chentun (2)
Source: *Advanced Materials Research*, v 415-417, p 1443-1446, 2012, *Advanced Materials*; **ISSN:** 10226680; **ISBN-13:** 9783037853252; **DOI:** 10.4028/www.scientific.net/AMR.415-417.1443; **Conference:** 2nd International Conference on Advances in Materials and Manufacturing Processes, ICAMMP 2011, December 16, 2011 - December 18, 2011; **Sponsor:** University of Wollongong; Northeastern University; University of Science and Technology Beijing; Hebei Polytechnic University; **Publisher:** Trans Tech Publications
Author affiliation: (1) School of Energy and Power Engineering, Xi'an Jiao Tong University, Shaanxi, 710065, China (2) School of Chemisitry and Chemical Engineering, Xi'an Shiyou University, Shaanxi, 710065, China (3) School of Petroleum Engineering, Xi'an Shiyou University, Shaanxi, 710065, China
Abstract: The title compound has been prepared from the reaction of fluorescein and 1-bromobutane in the presence of potassium carbonate. Its crystal and molecular structure is determined by single crystal X-ray diffraction. Its crystal is monoclinic space group P2(1)/n with lattice parameters: a = 8.0460(19) A, b = 13.198(3) A, c = 22.208(5) A, α = 90.00°, β = 94.140(3)°, γ = 90.00°, V= 2352.1(9)A3, Density (calculated) 1.228 mg /m3, μ(mm-1) = 0.08, absorption coefficient = 0.082m-1, F(000) 1034, Z = 4. In the crystal structure, intermolecular O-H hydrogen bands are responsible for the formation of a 3-dimensional net-work. The UV-vis absorption and fluorescence spectra of both dibutyl ester-ether fluorescein was studied. (6 refs)
Main heading: Ethers
Controlled terms: Crystal structure - Esters - X ray diffraction - Potash - Single crystals
Uncontrolled terms: 3-dimensional - Absorption coefficients - Crystal and molecular structure - Dibutyl ester-ether fluorescein - Monoclinic space groups - Single crystal x-ray diffraction - Title compounds - UV-vis absorptions
Classification Code: 804.1 Organic Compounds - 804.2 Inorganic Compounds - 933.1 Crystalline Solids - 933.1.1 Crystal Lattice
Database: Compendex
Data Provider: Engineering Village
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311. A simply constructed but efficacious shock tester for high-g level shock simulation

Duan, Zhengyong (1, 2); Zhao, Yulong (1); Liang, Jing (1)
Source: *Review of Scientific Instruments*, v 83, n 7, July 2012; **ISSN:** 00346748; **DOI:** 10.1063/1.4737888; **Article number:** 075115; **Publisher:** American Institute of Physics Inc.
Author affiliation: (1) State Key Laboratory for Manufacturing Systems Engineering, Xian Jiaotong University, Xian, Shaanxi, China (2) School of Mechanical Engineering, Xian Shiyou University, Xian, Shaanxi, China
Abstract: A simply constructed shock tester, different from existing drop table machines, is developed for high-g level shock environment simulation. The theoretical model, structure design, and working principle of the drop tester are described. A prototype device is set up, where a carbon fiber reinforced polymer with a high specific modulus is used. Using a Brüel Kjær high-g accelerometer, experiments to verify the validity of the design are carried out and results are given. The maximum acceleration level is in excess of 60 000 g, limited only by the manual driving force. © 2012 American Institute of Physics. (23 refs)
Main heading: Drops
Controlled terms: Carbon fiber reinforced plastics
Uncontrolled terms: High-G accelerometers - Maximum acceleration - Prototype devices - Shock environment - Shock simulation - Specific modulus - Structure design - Theoretical modeling
Classification Code: 817.1 Polymer Products
Funding Details: Number: IRT1033, Acronym: -, Sponsor: -;
Funding text: This work is supported by the Program for Changjiang Scholars and Innovative Research Teams in the University of China (IRT1033).
Database: Compendex
Data Provider: Engineering Village
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312. Comparison of fracture conductivities from field and lab

Zhou, Desheng (1); Zhang, Gang (2); Ruan, Min (1); He, Anwu (2); Wei, Dengfeng (2)
Source: *Society of Petroleum Engineers - International Petroleum Technology Conference 2012, IPTC 2012*, v 2, p 1625-1630, 2012, *Society of Petroleum Engineers - International Petroleum Technology Conference 2012, IPTC 2012*; **ISBN-13:** 9781618396594; **Conference:** International Petroleum Technology Conference 2012, IPTC 2012, February 7, 2012 - February 9, 2012; **Sponsor:** American Association of Petroleum Geologists (AAPG); et al.; European

Association of Geoscientists and Engineers (EAGE); Society of Exploration Geophysicists (SEG); Society of Petroleum Engineers (SPE); Technip; **Publisher:** Ljetopis Socijalnog Rada
Author affiliation: (1) Xian Petroleum University, China (2) Shaanxi Yanchang Petroleum Corp. Inc., China
Abstract: American Petroleum Institute (API) and International Organization for Standardization (ISO) provide short-term and long-term proppant pack conductivity tests in lab. Those are the standard in testing proppant pack conductivity and are widely used in the industry during fracture design. However, the standard results are far from actual fracture conductivity as many factors are not included in the standard tests. By comparing the environment difference between the standard lab conductivity and actual fracture conductivity, the paper summaries the most possible factors impacting the actual fracture. Those impacting factors are categorized into four types in the paper: proppant filling reduction, Proppant filling reduction, Porosity reduction, and Fluid flowing reduction. Well testing and production data analysis are used in explaining fracture conductivity, but the accuracy is unsatisfied for reservoir, perforation and turtorasity, and geology uncertainties. In-situ measurement is needed to obtain actual fracture conductivity. Copyright 2011, International Petroleum Technology Conference. (5 refs)
Main heading: Proppants
Controlled terms: Uncertainty analysis - Fracture - Fracture testing - Petroleum reservoir evaluation - Well testing
Uncontrolled terms: American Petroleum Institute - Fracture conductivities - Fracture design - Impacting factor - In-situ measurement - International organization for standardizations - Porosity reduction - Production data analysis
Classification Code: 511.1 Oil Field Production Operations - 512.1.2 Petroleum Deposits : Development Operations - 922.1 Probability Theory - 951 Materials Science
Database: Compendex
Data Provider: Engineering Village
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313. Wax precipitation research of crude oil by differential scanning calorimeter

Zhang, Jie (1); Sun, Yan (1); Tang, Ying (1); Chen, Gang (1)
Source: *Advanced Materials Research*, v 524-527, p 1730-1733, 2012, *Natural Resources and Sustainable Development II*; **ISSN:** 10226680; **ISBN-13:** 9783037854174; **DOI:** 10.4028/www.scientific.net/AMR.524-527.1730; **Conference:** 1st International Conference on Energy and Environmental Protection, ICEEP 2012, June 23, 2012 - June 24, 2012; **Publisher:** Trans Tech Publications
Author affiliation: (1) College of Chemistry and Chemical Engineering, Xi'an Shiyou University, Xi'an, 710065, China
Abstract: Thermal characters behavior of five crude oils samples covered a wide range of fluid composition and properties were studied by differential scanning calorimeter (DSC). By comparing with standard alumina method, it is proved that checking the paraffin recovery ratio in kerosene solution containing different concentration wax by thermal method is feasible. © (2012) Trans Tech Publications. (5 refs)
Main heading: Crude oil
Controlled terms: Alumina - Aluminum oxide - Differential scanning calorimetry - Precipitation (chemical) - Calorimeters
Uncontrolled terms: Differential scanning calorimeters - DSC - Fluid composition - Kerosene solutions - Recovery ratio - Thermal methods - WAT - Wax precipitation - Waxy crude
Classification Code: 512.1 Petroleum Deposits - 802.3 Chemical Operations - 804.2 Inorganic Compounds - 944.5 Temperature Measuring Instruments - 944.6 Temperature Measurements
Database: Compendex
Data Provider: Engineering Village
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314. Development of a new drilling fluid additive from lignosulfonate

Zhang, Jie (1); Chen, Gang (1); Yang, Nai-Wang (1)
Source: *Advanced Materials Research*, v 524-527, p 1157-1160, 2012, *Natural Resources and Sustainable Development II*; **ISSN:** 10226680; **ISBN-13:** 9783037854174; **DOI:** 10.4028/www.scientific.net/AMR.524-527.1157; **Conference:** 1st International Conference on Energy and Environmental Protection, ICEEP 2012, June 23, 2012 - June 24, 2012; **Publisher:** Trans Tech Publications
Author affiliation: (1) College of Chemistry and Chemical Engineering, Xi'an Shiyou University, Xi'an, 710065, China
Abstract: Nitration-oxidation lignosulfonate (NOLS) was prepared using lignosulfonate (LS) as raw material. The product was characterized by Fourier Transform Infrared spectroscopy (FT-IR). The performance as a drilling fluid additive was evaluated with regard to rhology, filtration and temperature resistance. The results showed that NOLS can improve the viscosity under room temperature, decrease the viscosity under high temperature and reduce the filtration more effectively than that of lignosulfonate, which display its good temperature resistance. So NOLS may be used as

sustained release nitrogen fertilizer in agriculture as it was abandoned after the drilling process. © (2012) Trans Tech Publications. (10 refs)
Main heading: Temperature control
Controlled terms: Drilling fluids - Fourier transform infrared spectroscopy - Nitration - Viscosity - Nitrogen fertilizers
Uncontrolled terms: Drilling fluid additives - Drilling process - High temperature - Lignosulfonates - Lignsulfonate - Room temperature - Sustained release - Temperature resistances
Classification Code: 631.1 Fluid Flow, General - 731.3 Specific Variables Control - 801 Chemistry - 802.2 Chemical Reactions - 804 Chemical Products Generally - 821.2 Agricultural Chemicals - 931.2 Physical Properties of Gases, Liquids and Solids
Database: Compendex
Data Provider: Engineering Village
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