1. 3-D seismic characterization of the eocene complex tidal channels in Xihu Sag, East China Sea

Accession number: 20151700789906
Authors: Li, Lei (1); Wang, Xiao-Gang (2); Chen, Ling-Ling (3); Tan, Zhuo (4); Cao, Bing (5); Shen, Wen-Long (5)
Author affiliation: (1) School of Earth Sciences and Engineering, Xi'an Shiyou University, Xi'an, China; (2) China Oilfield Services Limited-WellTech, Sanhe, China; (3) Overseas Research Center, The Research Institute of Shanxi Yanchang Petroleum (Group) Co., Ltd., Xi'an, China; (4) CNOOC Research Institute, Beijing, China; (5) Shanghai Branch of CNOOC Ltd., Shanghai, China
Corresponding author: Li, Lei
Source title: Natural Gas Geoscience
Abbreviated source title: Nat. Gas Geosci.
Volume: 26
Issue: 2
Issue date: February 10, 2015
Publication year: 2015
Pages: 352-359
Language: Chinese
ISSN: 16721926
Document type: Journal article (JA)
Publisher: Science Press
Abstract: Ancient tidal channel systems have been recognized and studied by many researchers and constitute an important target for sedimentary study and oil and gas exploration and development. Based on X-drilling data, logs, and 3-D seismic data of Xihu Sag, using facies analysis, seismic forward modeling, seismic attribute analysis and three dimensional imaging technology, the complex tidal channel of Eocene Pinghu Formation was identified and its internal structure, external morphology, stacked style and evolution were studied. Three main conclusions were made: (1) tidal channels were northwest trending, 500-1000 m wide and 2-10 m deep. Flood and ebb currents could cause tidal channel meanders to laterally migrate and form point bars; (2) tidal channels were composed of eight sedimentary cycles: channel lag deposits-point bar-mud flat-coal marsh or point bar-mud flat-coal marsh. Marine regression was indicated by the fining-upward sequence in a single depositional cycle; (3) within the complex tidal channel system the seismic waveforms, amplitude, and frequency are different from those of the surrounding rock.
Number of references: 20
Main heading: Sedimentology
Controlled terms: Coal deposits - Seismic prospecting - Wetlands - Seismology - Petroleum prospecting - Seismic waves
Uncontrolled terms: Eocene - Forward modeling - Point bar - Tidal channel - Xihu Sag
Classification code: 481.1 Geology - 481.4 Geophysical Prospecting - 484 Seismology - 484.1 Earthquake Measurements and Analysis - 503 Mines and Mining, Coal - 512.1.2 Petroleum Deposits : Development Operations
Numerical data indexing: Size 2.00e+00m to 1.00e+01m, Size 5.00e+02m to 1.00e+03m
DOI: 10.11764/j.issn.1672-1926.2015.02.0352
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

2. Dating of hydrocarbon accumulation by fluid inclusion characteristics in the Chang9 of Yanchang Formation in Jiyuan area, the Ordos Basin

Accession number: 20151300678564
Authors: Shi, Baohong (1); Zhang, Yan (2, 3); Zhang, Lei (2, 3); Huang, Jing (2, 3); Tang, Chao (2, 3)
Author affiliation: (1) School of Earth Sciences and Engineering, Xi'an Shiyou University, Xi'an; Shaanxi; 710065, China; (2) National Engineering Laboratory for Exploration and Development of Low-Permeability Oil & Gas Fields, Changqing Oilfield Company, PetroChina, Xi'an; Shaanxi; 710018, China; (3) Research Institute of Exploration and Development, Changqing Oilfield Company, PetroChina, Xi'an; Shaanxi; 710018, China
Corresponding author: Shi, Baohong(bh.sh@163.com)
Source title: Oil and Gas Geology
Abbreviated source title: Oil Gas Geol.
Volume: 36
Issue: 1
Issue date: February 28, 2015

Publication year: 2015
Pages: 17-22
Language: Chinese
ISSN: 02539985
Document type: Journal article (JA)
Publisher: Use me
Abstract: Chang9 oil layer of the Triassic Yanchang Formation is a key horizon for reservoir development in Jiyuan area, Ordos Basin. The characteristics of fluid inclusions in Chang9 reservoir in Jiyuan area were analyzed systematically based on the measurements of Fourier transform infrared spectroscopy, fluorescence spectroscopy, and homogenization temperature to determine, in combination with the burial-thermal history, the phases and periods of hydrocarbon migration and accumulation. The results show that there are two types of hydrocarbon inclusions in the reservoir of Chang9, namely liquid hydrocarbon inclusions and gas liquid hydrocarbon inclusions with green or yellow-green fluorescence. The homogenization temperature of brine inclusions associated with the hydrocarbon inclusions has a continuous distribution with a 100-120 peak value. Salinity distribution is relatively concentrated with a peak value of 3-5 wt%NaCl. These characteristics indicate that there is one major phase of oil migration and accumulation in the study area. Consistently, fluorescence spectroscopy and Fourier transform infrared spectroscopy data demonstrate that the Chang9 reservoir has undergone one phase of hydrocarbon charging with high organic matter maturity, with yellow-green and green fluorescence, corresponding to the fluorescence spectrum of 495nm. The analysis of burial and thermo-evolutionary history of Chang9 oil layer show that the hydrocarbon charging occurred mainly in mid-late stage of the Early Cretaceous.
Number of references: 24
Main heading: Fourier transform infrared spectroscopy
Controlled terms: Fluid inclusion - Hydrocarbons - Fluorescence - Fluorescence spectroscopy - Metamorphic rocks - Sodium chloride - Mineralogy - Timing circuits
Uncontrolled terms: Fluid inclusion - Fluorescence spectra - FTIR - Homogenization temperatures - Hydrocarbon accumulation - Jiyuan area - Ordos Basin
Classification code: 482 Mineralogy - 631 Fluid Flow - 713.4 Pulse Circuits - 741.1 Light/Optics - 741.3 Optical Devices and Systems - 801 Chemistry - 804.1 Organic Compounds - 941.3 Optical Instruments - 941.4 Optical Variables Measurements
Numerical data indexing: Size 4.95e-07m
DOI: 10.11743/ogg20150103
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

3. Non-contact water acquisition approach for physical modeling on rugged topographical models

Accession number: 20152801010992
Authors: Liu, Yang (1, 2, 4); Li, Xiangyang (1, 2, 3); Wei, Jianxin (1, 2)
Author affiliation: (1) State Key Laboratory of Petroleum Resources and Prospecting, China University of Petroleum (Beijing), Beijing; 102249, China; (2) CNPC Key Laboratory of Geophysical Prospecting, China University of Petroleum (Beijing), Beijing; 102249, China; (3) Edinburgh Anisotropy Project, British Geophysical Survey, Edinburgh, United Kingdom; (4) School of Earth Sciences and Engineering, Xi'an Shiyou University, Xi'an; Shaanxi; 710065, China
Source title: Shiyou Diqiu Wuli Kantan/Oil Geophysical Prospecting
Abbreviated source title: Shiyou Diqiu Wuli Kantan
Volume: 50
Issue: 3
Issue date: June 15, 2015
Publication year: 2015
Pages: 483-489
Language: Chinese
ISSN: 10007210
CODEN: SDWKEP
Document type: Journal article (JA)
Publisher: Science Press
Abstract: Conventional acquisition on physical models with rugged topography is directly implemented on model surface. This solid acquisition approach usually causes complicated operating process, slow acquisition speed and large coupling error due to the limitation of laboratory conditions. To solve these problems, this paper proposes a novel

non-contact water acquisition approach for physical modeling on rugged topographical models. It calculates the solid acquisition data from water acquisition data. With the authenticity of physical modeling and the flexibility of numerical modeling, this water-surface acquisition approach can solve the problems. In addition, it can also improve the efficiency and data accuracy in the acquisition process. The solid acquisition and water-surface acquisition are implemented on rugged topography models, which are simulated by both numerical modeling and physical modeling, to verify the superiority of this approach.
Number of references: 10
Main heading: Numerical models
Controlled terms: Topography
Uncontrolled terms: Acquisition process - Coupling errors - Data accuracy - Laboratory conditions - Operating process - Physical model - Rugged topography - Wave reconstruction
Classification code: 921 Mathematics - 951 Materials Science
DOI: 10.13810/j.cnki.issn.1000-7210.2015.03.014
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

4. Seismic high frequency information recovery constrained by well data

Accession number: 20155301741769
Authors: Liu, Hanqing (1, 2); Zhang, Fanchang (1); Wang, Nashen (3); Zhang, Jingdong (4); Ju, Shu-Xia (5); Yu, Zhilong (4)
Author affiliation: (1) School of Geosciences, China University of Petroleum (East China), Qingdao; Shandong; 266580, China; (2) Research Institute, Shenzhen Branch, CNOOC, Guangzhou; Guangdong; 510240, China; (3) School of Earth Sciences and Engineering, Xi'an Shiyou University, Xi'an; Shaanxi; 710056, China; (4) Geological Research Center, BGP Inc., CNPC, Zhuozhou; Hebei; 072751, China; (5) Information Technology Center, BGP Inc., CNPC, Zhuozhou; Hebei; 072751, China
Corresponding author: Liu, Hanqing(han0101qing@163.com)
Source title: Shiyou Diqiu Wuli Kantan/Oil Geophysical Prospecting
Abbreviated source title: Shiyou Diqiu Wuli Kantan
Volume: 50
Issue: 5
Issue date: October 15, 2015
Publication year: 2015
Pages: 890-895
Language: Chinese
ISSN: 10007210
CODEN: SDWKEP
Document type: Journal article (JA)
Publisher: Science Press
Abstract: We propose in this paper a method to recover high-frequency information of surface seismic data and improve the resolution using the spectral relationship between well data and seismic data. Firstly we extract surface seismic recoverable bandwidth from the well data with the matching pursuit algorithm. Then we obtain the stable amplitude spectra of the well data using the Gaussian amplitude spectra fitting algorithm. Therefore, we build the mapping relationship between Gaussian fit spectra in the frequency domain, and add Cauchy constraint item to increase the stability of the algorithm. Finally we apply the mapping relationship to the entire seismic data to broaden the bandwidth. So we enhance the energy of high-frequency weak signal and improve thin bed identification on seismic data. Application results show that the proposed method can not only obtain broader band but also higher resolution seismic information. So thin bed and complex reservoir identification can easily be achieved on formation parameter inversion sections on this kind of seismic data. © 2015, Science Press. All right reserved.
Number of references: 17
Main heading: Bandwidth
Controlled terms: Frequency domain analysis - Seismic response - Mapping - Seismic waves - Gaussian distribution
Uncontrolled terms: Gaussian fitting - High resolution - Mapping relationships - Matching pursuit - Thin bed - Well data
Classification code: 405.3 Surveying - 484 Seismology - 484.2 Secondary Earthquake Effects - 716.1 Information Theory and Signal Processing - 921.3 Mathematical Transformations - 922.1 Probability Theory - 922.2 Mathematical Statistics
DOI: 10.13810/j.cnki.issn.1000-7210.2015.05.011

Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

5. Gravity and magnetic field feature for archaeology in site of the emperor Qinshihuang Mausoleum, China

Accession number: 20154601546694
Authors: Yuan, Bingqiang (1); Liu, Shiyi (2); Yu, Guoming (3); Yang, Mingsheng (4)
Author affiliation: (1) School of Geoscience and Engineering, Xi'an Shiyou University, Xi'an; 710065, China; (2) Center of Development and Research, Chinese Geological Survey, Beijing; 100037, China; (3) Beijing Explo-Teck Engineering Co. Ltd., Beijing; 100192, China; (4) The Second Integrated Geophysical Exploration Brigade, Exploration and Empolder Bureau of Geological and Mineral Resources, Xi'an; Shanxi Province; 710016, China
Source title: Diqiu Kexue - Zhongguo Dizhi Daxue Xuebao/Earth Science - Journal of China University of Geosciences
Abbreviated source title: Diqiu Kexue Zhongguo Dizhi Daxue Xuebao
Volume: 40
Issue: 10
Issue date: October 1, 2015
Publication year: 2015
Pages: 1616-1620
Language: Chinese
ISSN: 10002383
CODEN: DIKEEL
Document type: Journal article (JA)
Publisher: China University of Geosciences
Abstract: The method validity has been tested on those sites known using high precision gravity and magnetic survey, which are for to explore the distribution of underground relics, to choose geophysical prospecting method and technology being fit to existing character in the area. The test results have showed that the range of ancient construction base site can be confirmed and the underground distribution can be conjectured by using high precision gravity survey. It is valid to explore the accompanying pits burned and also to find the accompanying tombs by using high precision magnetic method. The test results have yet provided the foundation to explore the similar cultural relics in the Emperor Qinshihuang mausoleum area in future. ©, 2015, China University of Geosciences. All right reserved.
Number of references: 15
Main heading: Magnetic fields
Controlled terms: Geological surveys - Geophysical prospecting
Uncontrolled terms: Accompanying Pits and tombs - Cultural relics - Emperor Qin Shi Huang Mausoleum - High precision gravity survey - High-precision - Magnetic methods - Magnetic surveys - Underground distribution
Classification code: 481.1 Geology - 481.4 Geophysical Prospecting - 701.2 Magnetism: Basic Concepts and Phenomena
DOI: 10.3799/dqkx.2015.146
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

6. Microstructure and mechanical properties of ultrasonic spot welded Al/Ti alloy joints

Accession number: 20151900828055
Authors: Wang, S.Q. (1, 2); Patel, V.K. (2); Bhole, S.D. (2); Wen, G.D. (3); Chen, D.L. (2)
Author affiliation: (1) School of Materials Science and Engineering, Xi'an Shiyou University, 18 Dianzier Road, Xi'an, Shaanxi; 710065, China; (2) Department of Mechanical and Industrial Engineering, Ryerson University, 350 Victoria Street, Toronto; ON; M5B 2K3, Canada; (3) Xi'an Research Institute of China Coal Technology and Engineering Group Corp, 1 Jingyeyi Road, Xi'an, Shaanxi; 710077, China
Corresponding author: Wang, S.Q.(sqwang@xsyu.edu.cn)
Source title: Materials and Design
Abbreviated source title: Mater. Des.
Volume: 78
Issue date: August 05, 2015
Publication year: 2015

Pages: 33-41
Language: English
ISSN: 02641275
E-ISSN: 18734197
Document type: Journal article (JA)
Publisher: Elsevier Ltd
Abstract: The microstructure, hardness, and tensile properties of solid-state ultrasonic spot welded (USWed) dissimilar joints between Al5754-O and Ti-6Al-4V alloys with or without a pure Al interlayer were studied. Significant difference in the microstructure was observed at the interface of the USWed Al/Ti alloy joints, where the phenomenon of adhesion on each side of the joint with Al interlayer was more obvious than that of the joint without Al interlayer. An asymmetrical hardness profile across the dissimilar joint was observed such that the hardness value increased gradually from the Al side to the Ti side. With increasing energy input, the lap shear strength of the USWed Al/Ti alloy joint with a 75. μm thick Al interlayer first increased and then decreased, with the maximum lap shear strength reaching about 206. MPa at a welding energy of 1000. J. No samples failed at the interface when the energy was above 1000. J or the thickness of Al interlayer was more than 75. μm. The fracture was predominantly characterized by the dimple-like ductile fracture. © 2015 Elsevier Ltd.
Number of references: 59
Main heading: Titanium alloys
Controlled terms: Ternary alloys - Ductile fracture - Hardness - Spot welding - Microstructure - Tensile strength - Aluminum alloys - Vanadium alloys
Uncontrolled terms: Al-alloy - Dissimilar joints - Hardness profiles - Lap shear strength - Microstructure and mechanical properties - Tensile shear strength - Ti-6Al-4V alloy - Ultrasonic spot welding
Classification code: 538.2.1 Welding Processes - 541.2 Aluminum Alloys - 542.3 Titanium and Alloys - 543.6 Vanadium and Alloys - 951 Materials Science
DOI: 10.1016/j.matdes.2015.04.023
Funding Details: Number: -, Acronym: NPU, Sponsor: Northwestern Polytechnical University; Number: -, Acronym: CFI, Sponsor: Canada Foundation for Innovation; Number: -, Acronym: NSERC, Sponsor: Natural Sciences and Engineering Research Council of Canada;
Funding text: The authors would like to thank the Natural Sciences and Engineering Research Council of Canada (NSERC) for the financial support, and Northwestern Polytechnical University (NWPU), Xi'an, China for providing test materials. One of the authors (D.L. Chen) is also grateful for the financial support by the Premier's Research Excellence Award (PREA), NSERC-Discovery Accelerator Supplement (DAS) Award , Automotive Partnership Canada (APC), Canada Foundation for Innovation (CFI), and Ryerson Research Chair (RRC) program. The authors would also like to thank Messrs. Q. Li, A. Machin, J. Amankrah and R. Churaman for easy access to the laboratory facilities of Ryerson University and their assistance in the experiments.
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

7. Development characteristics of shale fracture in Longmaxi Formation in southeasten Sichuan

Accession number: 20152600966645
Authors: Wang, Nai-Chuan (1, 2, 3); Zhao, Jing-Zhou (1); Ding, Wen-Long (2, 3, 4); Zeng, Wei-Te (2, 3)
Author affiliation: (1) School of Earth Science, Xi'an Shiyou University, Xi'an, China; (2) School of Energy Resources, China University of Geosciences, Beijing, China; (3) Key Laboratory for Marine Reservoir Evolution and Hydrocarbon Abundance Mechanism, Ministry of Education, China University of Geosciences, Beijing, China; (4) Key Laboratory for Shale Gas Exploitation and Assessment, Ministry of Land and Resources, China University of Geosciences, Beijing, China
Source title: Natural Gas Geoscience
Abbreviated source title: Nat. Gas Geosci.
Volume: 26
Issue: 4
Issue date: April 10, 2015
Publication year: 2015
Pages: 760-770
Language: Chinese
ISSN: 16721926
Document type: Journal article (JA)

Publisher: Science Press
Abstract: Based on core data, a detailed identification was carried out on the shale fracture in Longmaxi Formation in southestern Sichuan. Statistics of core fracture basic parameters were done and the fracture density was calculated. A method was established which apply fracture characteristic parameters to determine the fracture development characteristics. Taking Yuye 1 well as an example, combined with the microscope observation of micro crack, macroscopic core crack, shale fracture and fracture density, a detailed description was carried out on the fracture development characteristics of the organic-enriched marine black shale in Longmaxi Formation. Also, the influencing factors of shale fracture development degree are studied, the relationship between shale fracture development characteristics and the rock brittleness mineral content was determined qualitatively or semi-quantitatively and the relationship between the fracture development degree of organic-enriched marine shale and the organic carbon content was analyzed. Results show that: (1) Shale with high content of quartz, feldspar, calcite, brittleness mineral and low content of clay is easy to produce fractures; (2) To some extent, the TOC has a positive correlation with the fracture development degree of organic-enriched marine shale. The higher the TOC, the larger the fracture density; (3) The fracture development degree can be divided into three categories according to the TOC: Poor, normal and good.

Number of references: 22
Main heading: Cracks
Controlled terms: Shale - Brittleness - Calcite - Feldspar - Plasticity - Brittle fracture - Organic carbon
Uncontrolled terms: Development characteristics - Development degree - Fracture characteristics - Longmaxi Formation - Organic carbon contents - Positive correlations - Sichuan - TOC
Classification code: 482.2 Minerals - 804.1 Organic Compounds - 804.2 Inorganic Compounds - 951 Materials Science
DOI: 10.11764/j.issn.1672-1926.2015.04.0760
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

8. Synthesis, evaluation and thermodynamics of a 1H-benzo-imidazole phenanthroline derivative as a novel inhibitor for mild steel against acidic corrosion

Accession number: 20154901635363
Authors: Lei, Xiaowei (1); Wang, Hongyan (2); Feng, Yaorong (3); Zhang, Jianxun (1); Sun, Xuejiao (3, 4); Lai, Suming (2); Wang, Zhilong (2); Kang, Song (2)
Author affiliation: (1) State Key Laboratory for Mechanical Behavior of Materials, Xi'An Jiaotong University, Xi'an; 710049, China; (2) Key Laboratory of Macromolecular Science of Shaanxi Province, School of Chemistry and Chemical Engineering, Shaanxi Normal University, Xi'an; 710062, China; (3) Tubular Goods Research Institute, China National Petroleum Corporation, Xi'an; 710077, China; (4) College of Petroleum Engineering, Xi'An Shiyou University, Xi'an; 710065, China
Corresponding author: Wang, Hongyan(hongyan-wang@snnu.edu.cn)
Source title: RSC Advances
Abbreviated source title: RSC Adv.
Volume: 5
Issue: 120
Issue date: 2015
Publication year: 2015
Pages: 99084-99094
Language: English
E-ISSN: 20462069
CODEN: RSCACL
Document type: Journal article (JA)
Publisher: Royal Society of Chemistry
Abstract: A novel 1H-benzo-imidazole phenanthroline derivative (1) was developed as a corrosion inhibitor for mild steel in 1.0 M HCl solution with temperature ranging from 25 °C to 90 °C. Potentiodynamic polarization, electrochemical impedance spectroscopy and weight loss indicates that inhibitor 1 can efficiently protect mild steel from corrosion in acidic medium with better performance under moderately higher concentration and temperature. Based on thermodynamic and kinetic analysis, it is observed that 1 functioned as a mixed-type inhibitor and obeyed Langmuir adsorption isotherm via chemisorption. Further assisted by synergistic effect of iodide ions, inhibition efficiency can be dramatically enhanced up to 99.2%. © 2015 The Royal Society of Chemistry.
Number of references: 64

Main heading: Electrochemical impedance spectroscopy
Controlled terms: Corrosion inhibitors - Electrochemical corrosion - Thermodynamics - Steel corrosion - Low carbon steel - Chlorine compounds - Corrosion protection
Uncontrolled terms: Acidic corrosion - Acidic mediums - HCl solution - Inhibition efficiency - Langmuir adsorption isotherms - Phenanthroline derivatives - Synergistic effect - Thermodynamic and kinetic analysis
Classification code: 539.1 Metals Corrosion - 539.2 Corrosion Protection - 539.2.1 Protection Methods - 545.3 Steel - 641.1 Thermodynamics - 801 Chemistry - 801.4.1 Electrochemistry - 802.2 Chemical Reactions - 803 Chemical Agents and Basic Industrial Chemicals
Numerical data indexing: Percentage 9.92e+01%, Temperature 2.98e+02K to 3.63e+02K
DOI: 10.1039/c5ra15002g
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

9. Joining sheet metals by electrically-assisted roll bonding (*Open Access*)

Accession number: 20151800807094
Authors: Ng, Man-Kwan (1); Li, Lanyun (1, 2); Fan, Zhaoyan (3); Gao, Robert X. (4); Smith, Edward F. (5); Ehmann, Kornel F. (1); Cao, Jian (1)
Author affiliation: (1) Department of Mechanical Engineering, Northwestern University, Evanston; IL; 60208, United States; (2) School of Materials Science and Engineering, Xi'An Shiyou University, Xi'an, China; (3) Department of Mechanical Engineering, University of Connecticut, Storrs; CT, United States; (4) Department of Mechanical and Aerospace Engineering, Case Western Reserve University, Cleveland; OH; 44106, United States; (5) Deringer-Ney, Inc., New Industrial Park, Bloomfield; CT; 06002, United States
Corresponding author: Cao, Jian(jcao@northwestern.edu)
Source title: CIRP Annals
Abbreviated source title: CIRP Ann
Volume: 64
Issue: 1
Issue date: 2015
Publication year: 2015
Pages: 273-276
Language: English
ISSN: 00078506
E-ISSN: 17260604
CODEN: CIRAAT
Document type: Journal article (JA)
Publisher: Elsevier Inc.
Abstract: Roll bonding is a solid-state welding process performed by means of rolling. During the process, virgin metal is extruded to the surface from underneath the surface through micro cracks leading to the formation of new metallic bonds. Electrically-assisted roll bonding (EARB) was applied to roll bond 127 μm aluminum sheet to 127 μm aluminum or copper sheets. The quality of the bonds was examined through micrographs and peel tests. It was found that the Joule heating effect in EARB lowered rolling forces and increased the bond strengths of bonded sheets by as much as three times. © 2015 CIRP.
Number of references: 16
Main heading: Joining
Controlled terms: Roll bonding - Rolling - Aluminum alloys
Uncontrolled terms: Bonded sheets - Copper sheets - Electrically assisted forming - Joule heating effect - Metallic bonds - Rolling force - Solid-state welding process - Surface from
Classification code: 408.2 Structural Members and Shapes - 535.1 Metal Rolling - 541.2 Aluminum Alloys
Numerical data indexing: Size 1.27e-04m
DOI: 10.1016/j.cirp.2015.04.131
Funding Details: Number: 1560628,CMMI-1100507/1100787, Acronym: NSF, Sponsor: National Science Foundation;
Funding text: Financial support from the National Science Foundation (CMMI-1100507/1100787) and technical support from the Optical Microscopy and Metallography Facility of Northwestern University are greatly appreciated.
Compendex references: YES
Open Access type(s): All Open Access, Bronze
Database: Compendex
Data Provider: Engineering Village

10. Redundant posture measurement and system reconfiguration method of steering drilling tool

Accession number: 20155201713346
Authors: Liu, Zili (1); Yan, Weisheng (1); Kang, Simin (2); Liu, Zishen (3); Wang, Yuelong (2); Zhang, Shouxu (1)
Author affiliation: (1) College of Marine Engineering, Northwestern Polytechnical University, Xi'an; Shaanxi; 710072, China; (2) Shaanxi Key Laboratory of Oil-Drilling Rigs Controlling Technique, Xi'an Petroleum University, Xi'an; Shaanxi; 710065, China; (3) PetroChina Liaoyang Petrochemical Company, Liaoyang; Liaoning; 111003, China
Corresponding author: Liu, Zili(lzllizhi@126.com)
Source title: Shiyou Xuebao/Acta Petrolei Sinica
Abbreviated source title: Shiyou Xuebao
Volume: 36
Issue: 11
Issue date: November 1, 2015
Publication year: 2015
Pages: 1433-1440
Language: Chinese
ISSN: 02532697
CODEN: SYHPD9
Document type: Journal article (JA)
Publisher: Science Press
Abstract: Real-time downhole posture measurement of steering drilling tool is vital to realize exact reliable control on the well trajectory of modulated steering drilling tool. Aiming at the poor reliability of measurement system under atrocious working environment, this study proposes a posture measurement method based on nonorthogonal quadri-axle gravity accelerometers, and the corresponding posture parameter solution and signal effectiveness judgment formulas are also given. As for inaccurate posture parameter under the status of small borehole deviation, a nonorthogonal measurement method is proposed, which depends on the quadri-axle gravity accelerometers installed with an initial tilt, so as to improve the measurement accuracy. To cope with problems that the accelerometer tends to fail or be destroyed in atrocious downhole environment, a measurement method is presented based on dual redundant nonorthogonal quadri-axle gravity accelerometers. Then the mutual conversion formula between relative signals of dual redundant gravity accelerometer is given. Moreover, this study discusses the judgment method and diagnosis process of gravity accelerometer fault based on signal characteristics, based on which a system reconfiguration scheme is established accordingly. The hydraulic driving test results indicate that tool posture measurement is accurate, and the stable control of platform angle is achieved.
Number of references: 23
Main heading: Accelerometers
Controlled terms: Parameter estimation - Axles
Uncontrolled terms: Conversion formulas - Measurement accuracy - Non-orthogonal - Posture measurement - Redundant - Signal characteristic - System reconfiguration - Working environment
Classification code: 943.1 Mechanical Instruments
DOI: 10.7623/syxb201511013
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

11. D-amino acids enhanced biocide mitigation of field biofilm consortia in lab tests

Accession number: 20153601232470
Authors: Li, Yingchao (1); Gu, Tingyue (1); Xu, Dake (2); Zhang, Peiyu (3); Xu, Congmin (4)
Author affiliation: (1) Dept. of Chemical and Biomolecular Engineering, Institute for Corrosion and Multiphase Technology, Ohio University, Athens; OH; 45701, United States; (2) Institute of Metal Research, Chinese Academy of Sciences, 72 Wenhua Road, Shenyang; 110016, China; (3) Dept. of Bioengineering, University of Missouri-Columbia, Columbia; MO; 65211, United States; (4) School of Materials Science and Engineering, Xi'an Shiyou University, 18 Dianzi 2nd Road, Xi'an; 710065, China
Source title: NACE - International Corrosion Conference Series
Abbreviated source title: NACE - Int. Corros. Conf. Ser.
Volume: 2015-January
Part number: 1of1
Issue title: Corrosion 2015: Collaborate. Educate. Innovate. Mitigate.

Issue date: 2015
Publication year: 2015
Report number: C2015-5522
Language: English
ISSN: 03614409
Document type: Conference article (CA)
Conference name: Corrosion 2015: Collaborate. Educate. Innovate. Mitigate.
Conference date: March 15, 2015 - March 19, 2015
Conference location: Dallas, TX, United states
Conference code: 113704
Publisher: NACE International
Abstract: Microbiologically influenced corrosion (MIC) is a major problem in the oil and gas industry as well as many other industries. Current treatment methods rely mostly on pigging and biocide dosing. Because field systems are not sterile, microbes always recover, leading to repeated treatment cycles. It is anticipated that the application of the same biocide will selectively promote resistant microbes. Overtime, this can lead to the biocide dosage escalating, resulting in a cost increase and environmental concerns. Previously published work demonstrated that some D-amino acids are biocide enhancers. D-amino acids are naturally occurring. They occupy a significant fraction of amino acids in processed food because of heat conversion of L-amino acids to D-amino acids. It has been postulated that D-amino acids can replace the D-alanine terminus in bacterial cell walls. Under a biocide stress, these D-amino acids can disperse recalcitrant biofilms such as the Desulfovibrio vulgaris biofilm on carbon steel coupons. It is well known that planktonic cells are much easier to treat than sessile cells. Because D-amino acids are used as signal molecules, only relatively low concentrations are needed. They can reduce biocide dosage while achieving increased efficacy. The new data provided herein reveal that a mixture of D-amino acids enhanced biocide treatment of two recalcitrant biofilm consortia, thus paving the way for field trials. © 2015 by Nace International.
Number of references: 34
Main heading: Biocides
Controlled terms: Cell membranes - Amino acids - Biofilms - Bacteria - Gas industry - Oils and fats - Biodegradation
Uncontrolled terms: Current treatments - D-amino acid - Desulfovibrio vulgaris - Environmental concerns - Low concentrations - Microbiologically influenced corrosions - Naturally occurring - Oil and Gas Industry
Classification code: 461.2 Biological Materials and Tissue Engineering - 461.8 Biotechnology - 462.5 Biomaterials (including synthetics) - 522 Gas Fuels - 801.2 Biochemistry - 804.1 Organic Compounds
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

12. Hydrogel formed by the co-assembly of sodium laurate and silica nanoparticles

Accession number: 20155201715110
Authors: Wei, Ying (1); Wang, Yijie (1); Wei, Congrui (1); Zhao, Qiang (1); Yan, Yun (1); Yang, Jiang (2); Huang, Jianbin (1)
Author affiliation: (1) Beijing National Laboratory for Molecular Sciences (BNLMS), State Key Laboratory for Structural Chemistry of Unstable and Stable Species, College of Chemistry and Molecular Engineering, Peking University, Beijing; 100871, China; (2) Department of Petroleum Engineering, Xi'An Petroleum University, Xi'an Shaanxi; 710065, China
Corresponding author: Yang, Jiang(jyang@xsyu.edu.cn)
Source title: RSC Advances
Abbreviated source title: RSC Adv.
Volume: 5
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Issue date: 2015
Publication year: 2015
Pages: 106005-106011
Language: English
E-ISSN: 20462069
CODEN: RSCACL
Document type: Journal article (JA)
Publisher: Royal Society of Chemistry
Abstract: Co-assembly between surfactants and inorganic nanoparticles is an appealing research field which has been proved to be an effective approach to create hybrid materials. In this paper, a new type of co-assembled hydrogel

formed by an anionic surfactant and nanoparticles is reported. The hydrogel can be achieved by mixing the anionic surfactant, sodium laurate (SL), with silica nanoparticles (silica NPs) in an aqueous solution with dissolved potassium chloride (KCl). It was found that the silica NPs and SL co-assembled to intertwined 1D fibers as well as a macroscopic hydrogel, where the complexes of amphiphilic molecules and nanoparticles acted as building blocks. We proved that the formation of the hydrogels originates from the hydrogen bond and hydrophobic effect in the SL and silica NPs co-assembled system. In addition, the silica NPs assembled with SL molecules by hydrogen bonds, rather than SL aggregates, which is different with the conventional studies. The novel phenomenon of co-assembly between a surfactant and nanoparticles not only provides a new strategy for the construction of co-assemblies, but also may advance a better understanding of the fundamental science. ©2015 The Royal Society of Chemistry.
Number of references: 24
Main heading: Silica nanoparticles
Controlled terms: Anionic surfactants - Hydrogen bonds - Hydrophobicity - Hydrogels - Molecules - Potash - Potassium chloride - Sodium - Cationic surfactants - Solutions - Biophysics - Hybrid materials
Uncontrolled terms: Amphiphilic molecules - Assembled system - Building blockes - Effective approaches - Hydrophobic effect - Inorganic nanoparticle - Research fields - Sodium laurate
Classification code: 461.9 Biology - 549.1 Alkali Metals - 761 Nanotechnology - 801.3 Colloid Chemistry - 801.4 Physical Chemistry - 803 Chemical Agents and Basic Industrial Chemicals - 804 Chemical Products Generally - 804.1 Organic Compounds - 804.2 Inorganic Compounds - 931.2 Physical Properties of Gases, Liquids and Solids - 931.3 Atomic and Molecular Physics
DOI: 10.1039/c5ra23636c
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

13. Petrologic characteristics and genetic model of lacustrine lamellar fine-grained rock and its significance for shale oil exploration: A case study of Permian Lucaogou Formation in Malang sag, Santanghu Basin, NW China

Accession number: 20154901646655
Authors: Liu, Bo (1, 2); Lü, Yanfang (1); Meng, Yuanlin (1); Li, Xinning (3); Guo, Xiaobo (4); Ma, Qiang (3); Zhao, Wanchun (1)
Author affiliation: (1) Accumulation and Development of Unconventional Oil and Gas, State Key Laboratory Cultivation Base Jointly-constructed by Heilongjiang Province and the Ministry of Science and Technology, Northeast Petroleum University, Daqing; 163318, China; (2) " Fault Deformation, Sealing and Fluid Migration" Science and Technology Innovation Team in Colleges and Universities of Heilongjiang, Daqing; 163318, China; (3) PetroChina Turpan-Hami Oilfield Company, Hami; 839009, China; (4) School of Earth Sciences and Engineering, Xi'an Shiyou University, Xi'an; 710065, China
Source title: Shiyou Kantan Yu Kaifa/Petroleum Exploration and Development
Abbreviated source title: Shiyou Kantan Yu Kaifa
Volume: 42
Issue: 5
Issue date: October 23, 2015
Publication year: 2015
Pages: 598-607
Language: Chinese
ISSN: 10000747
CODEN: SKYKEG
Document type: Journal article (JA)
Publisher: Science Press
Abstract: Taking the Permian Lucaogou Formation in the Malang sag, Santanghu Basin as an example, by using petrological methods such as high resolution core image scanning, conventional thin section, scanning electron microscope and energy spectrum analysis and geochemical tests such as trace elements and biomarker compounds, the petrologic features and sedimentary origin of the lamellar organic rich fine-grained rocks of lake facies were investigated, and its significance for shale oil and tight oil exploration was analyzed. The results of the study show that there are four types of laminae, siliciclastic enrichment laminae, carbonate enrichment laminae, tuffaceous enrichment laminae and organic matter enrichment laminae, which can form three kinds of layer combinations. Organic matter is laminar enrichment or dispersed in the carbonate laminae and tuff laminae. Stratification of ancient lake water was formed in the closed saline lake sedimentary systems with insufficient continental clast supply, and the activity of warm water at the lake bottom and the monsoon climate worked jointly to control enrichment of organic matter and formation

of lacustrine lamina fine-grained rocks. This kind of fine-grained rocks have higher potential of hydrocarbon generation due to high abundance of organic matter, are rich in reservoir space due to the existence of micro-pores in carbonate laminae and micro-cracks between the laminae, and suitable for fracturing because of high brittle mineral content. They have favorable conditions for shale oil and tight oil accumulation, and are significant for exploration.
Number of references: 33
Main heading: Biological materials
Controlled terms: Lakes - Carbonation - Biogeochemistry - Trace elements - Sedimentology - Shale - Spectrum analysis - Scanning electron microscopy
Uncontrolled terms: Fine grained - Genetic models - Laminae combination - Oil and gas - Petrologic characteristics
Classification code: 461.2 Biological Materials and Tissue Engineering - 481.1 Geology - 481.2 Geochemistry - 801.2 Biochemistry - 802.2 Chemical Reactions
Funding Details: Number: 41472125, Acronym: -, Sponsor: -; Number: QC 2015043, Acronym: -, Sponsor: Natural Science Foundation of Heilongjiang Province; Number: UNPYSCT-2015077, Acronym: -, Sponsor: -; Number: 41202101, Acronym: -, Sponsor: -;
Funding text: Received date: 26 Mar. 2015; Revised date: 25 Jul. 2015. * Corresponding author. E-mail: liubo6869@163.com Foundation item: Supported by the National Natural Science Foundation (41472125); National Natural Science Foundation for the Youth (41202101); Heilongjiang Natural Science Foundation for the Youth (QC 2015043); and Training Plan for Young and Innovative Talents from Undergraduate Schools in Heilongjiang Province (UNPYSCT-2015077).
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

14. Determination of enantiomeric composition of tryptophan by using fluorescence spectroscopy combined with backward interval partial least squares

Accession number: 20152300912371
Authors: Jiao, Long (1, 2); Bing, Shan (1); Zhang, Xiaofeng (1); Wang, Yunxia (2); Li, Hua (2)
Author affiliation: (1) College of Chemistry and Chemical Engineering, Xi'an Shiyou University, Xi'an; 710065, China; (2) College of Chemistry and Materials Science, Northwest University, Xi'an; 710069, China
Corresponding author: Jiao, Long(mop@xsyu.edu.cn)
Source title: Analytical Methods
Abbreviated source title: Anal. Methods
Volume: 7
Issue: 11
Issue date: June 7, 2015
Publication year: 2015
Pages: 4535-4540
Language: English
ISSN: 17599660
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Document type: Journal article (JA)
Publisher: Royal Society of Chemistry
Abstract: The application of backward interval partial least squares (BiPLS) method to fluorescence spectroscopy analysis was studied. A method which combines BiPLS and fluorescence spectroscopy was developed for determining the enantiomeric composition of tryptophan (Trp). Fluorescence spectroscopy was utilized to measure the interaction between Trp enantiomers and bovine serum albumin, which is the chiral selector of the two enantiomers. BiPLS was used to select spectral regions and build the calibration model. In terms of BiPLS, five spectral regions were selected and used to develop the calibration model between the spectral data and enantiomeric composition of Trp. In addition, a full-spectrum PLS model and two local-spectrum PLS models were developed in order to make a comparison to the BiPLS model. The prediction performance of the established models was assessed by external test validation and leave-one-out cross-validation. The BiPLS model shows the highest prediction accuracy among these models. For the BiPLS model, the root mean square relative error of external test validation and leave-one-out validation was 6.59% and 5.67%, respectively. It is demonstrated that fluorescence spectroscopy combined with BiPLS is a practicable method for determining the enantiomeric composition of Trp at trace levels. When there is 2.50 μmol L-1 Trp in the samples, the enantiomeric composition of Trp can be accurately determined. Furthermore, the result demonstrates that

spectral region selection can significantly influence the fluorescence spectroscopy analysis and BiPLS is a practicable method for the spectral region selection in fluorescence spectroscopy analysis. © The Royal Society of Chemistry.
Number of references: 40
Main heading: Fluorescence spectroscopy
Controlled terms: Least squares approximations - Fluorescence - Spectrum analysis - Enantiomers - Amino acids - Statistical methods
Uncontrolled terms: Bovine serum albumins - Calibration model - Enantiomeric composition - Interval partial least squares - Leave-one-out cross validations - Prediction accuracy - Prediction performance - Root Mean Square
Classification code: 741.1 Light/Optics - 741.3 Optical Devices and Systems - 804.1 Organic Compounds - 921.6 Numerical Methods - 922.2 Mathematical Statistics - 941.3 Optical Instruments - 941.4 Optical Variables Measurements
Numerical data indexing: Molar_Concentration 2.50e-03mol/m3, Percentage 5.67e+00%, Percentage 6.59e+00%
DOI: 10.1039/c5ay00190k
Funding Details: Number: 21305108, Acronym: NSFC, Sponsor: National Natural Science Foundation of China; Number: 21375105, Acronym: NSFC, Sponsor: National Natural Science Foundation of China;
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

15. Simulation of R/S UAV-weapon separation based on improved methods

Accession number: 20150900580154
Authors: Zhu, Bing (1, 2); Yang, Juan (2); Zhu, Xiaoping (3)
Author affiliation: (1) Xi'an Shiyou University, Xi'an; 710065, China; (2) College of Astronautics, Northwestern Polytechnical University, Xi'an; 710072, China; (3) Xi'an ASN Technology Group Company, Northwestern Polytechnical University, Xi'an; 710065, China
Corresponding author: Zhu, Bing
Source title: Xibei Gongye Daxue Xuebao/Journal of Northwestern Polytechnical University
Abbreviated source title: Xibei Gongye Daxue Xuebao
Volume: 33
Issue: 1
Issue date: February 1, 2015
Publication year: 2015
Pages: 21-25
Language: Chinese
ISSN: 10002758
CODEN: XGDUE2
Document type: Journal article (JA)
Publisher: Northwestern Polytechnical University
Abstract: We simulated the UAV-weapon separation process with the improved computational fluid dynamics method which comprehensively considered the flying status of both UAV and released weapon. In order to study the aerodynamic interference and the rules of weapon movement more accurately, dynamic grid approach was used coupled with an unsteady Euler flow solver. 6-DOF models of both UAV and weapon were fully integrated into the CFD solution procedure to determine the body dynamics. And we presented the simulation results of a weapon launching process using developed numerical methods. Major trends of the separation were captured. The computation results and their analysis showed preliminarily the accuracy of the improved method. ©, 2014, Xibei Gongye Daxue Xuebao/ Journal of Northwestern Polytechnical University. All right reserved.
Number of references: 8
Main heading: Numerical methods
Controlled terms: Computational fluid dynamics - Angle of attack - Angular velocity - Flow fields - Mach number - Unmanned aerial vehicles (UAV) - Degrees of freedom (mechanics) - Runge Kutta methods - Angle of attack indicators - Antennas - Pressure distribution
Uncontrolled terms: Aerodynamic interference - Computational fluid dynamics methods - Fully integrated - Improved method - Mesh genergtion - Separation process - Solution procedure - Weapon launching
Classification code: 631.1 Fluid Flow, General - 651.1 Aerodynamics, General - 652.1 Aircraft, General - 652.3 Aircraft Instruments and Equipment - 723.5 Computer Applications - 921.6 Numerical Methods - 931.1 Mechanics - 943.2 Mechanical Variables Measurements
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

16. Quantitative analysis of diagenesis and diagenetic facies of reservoir of Shan23Member in the north of Zizhou Gasfield, Ordos Basin

Accession number: 20161202132710
Authors: Ma, Yao (1, 2); Li, Wen-Hou (3); Wang, Ruo-Gu (4); Zhang, Hui-Ruo (5)
Author affiliation: (1) School of Earth Sciences and Engineering, Xi'an Shiyou University, Xi'an, China; (2) Key Laboratory of Shaanxi Province for Oil and Gas Accumulation Geology, Xi'an Shiyou University, Xi'an, China; (3) State Key Laboratory of Continental Dynamics, Department of Geology, Northwest University, Xi'an, China; (4) Research Institute of Yanchang Petroleum (Group) Co., Ltd., Xi'an, China; (5) The Exploration Department of Changqing Oilfield Company, PetroChina, Xi'an, China
Source title: Natural Gas Geoscience
Abbreviated source title: Nat. Gas Geosci.
Volume: 26
Issue: 11
Issue date: November 10, 2015
Publication year: 2015
Pages: 2039-2052
Language: Chinese
ISSN: 16721926
Document type: Journal article (JA)
Publisher: Science Press
Abstract: Analytical tests were used in this study such as core observation, casting thin section observation, SEM, high pressure Hg injection and X-ray diffractometer. Based on study of lithology characteristics, physical properties and pore structure on Shan23member of Shanxi Formation in the north of Zizhou Gasfield in the Ordos Basin, the diagenesis was analyzed qualitatively and quantitatively by multi-parameter. Diagenetic evolution sequence, determined diagenetic stage and porosity evolution were restored. The diagenetic facies of reservoir were divided according to the results of diagenesis analysis, physical property and characteristics of capillary pressure curve. The plane distribution characteristics of diagenetic facies were studied. This research shows that Shan23reservoir of the study area has experienced four stages of diagenesis which respectively are compaction, cementation, metasomatism and dissolution. It is now in the phase B of middle diagenetic stage, with parts of the late diagenetic stage. The diagenetic facies of reservoir are divided into six types. The most favorable facies distribute in central of underwater distributary channel in the southwest of the study area, which are potato-like or island shaped. These areas are the preferred for gas exploration and development of Shan23Member in the north of Zizhou Gasfield. © 2015, Science Press. All right reserved.
Number of references: 44
Main heading: Lithology
Controlled terms: Metamorphic rocks - Petroleum prospecting - Physical properties - Sedimentology - Chemical analysis
Uncontrolled terms: Diagenesis - Diagenetic facies - North of Zizhou Gasfield - Ordos Basin - Shan23member - Shanxi Formation
Classification code: 481.1 Geology - 512.1.2 Petroleum Deposits : Development Operations - 931.2 Physical Properties of Gases, Liquids and Solids
DOI: 10.11764/j.issn.1672-1926.2015.11.2039
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

17. Active control of spatial structure based on GMM actuator and T-S type fuzzy neural network

Accession number: 20155201731103
Authors: Yang, Tao (1); Wang, She-Liang (1); Dai, Jian-Bo (2)
Author affiliation: (1) College of Civil Eng, Xi'an Univ of Architecture and Technology, Xi'an; 710055, China; (2) College of Mechanical Eng, Xi'an Shiyou Univ, Xi'an; 710065, China
Corresponding author: Wang, She-Liang
Source title: Zhendong yu Chongji/Journal of Vibration and Shock
Abbreviated source title: J Vib Shock

Volume: 34
Issue: 24
Issue date: December 28, 2015
Publication year: 2015
Pages: 1-6 and 11
Language: Chinese
ISSN: 10003835
Document type: Journal article (JA)
Publisher: Chinese Vibration Engineering Society
Abstract: Based on independently developed Giant Magnetostrictive Material (GMM) active control actuator, a Takagi-Sugeno (T-S) fuzzy neural network control system of a spatial structure was designed, in which the relative displacement and relative speed of two nodes at the end of the active-member were taken as inputs, and the output control current was calculated by the network. Taking advantage of the adaptive neural network learning function to achieve the fuzzy division and to generate fuzzy rules, an active control simulation of the spatial structure model under the action of seismic response by using the fuzzy reasoning capability, was carried out and the results were compared with the results produced by the simulation of a corresponding standard fuzzy neural network model. The results demonstrate that both the models can achieve good control effects, but the simulation speed of the T-S fuzzy neural network is far faster than the standard model. Therefore, the T-S fuzzy neural network controller can better meet the needs of engineering application requirements. © 2015, Chinese Vibration Engineering Society. All right reserved.
Number of references: 15
Main heading: Fuzzy neural networks
Controlled terms: Fuzzy inference - Magnetostrictive devices - Adaptive control systems - Actuators
Uncontrolled terms: Active control - Engineering applications - Fuzzy neural network control - Fuzzy neural network model - Giant magnetostrictive materials - Simulation - Spatial structure - Spatial structure models
Classification code: 721.1 Computer Theory, Includes Formal Logic, Automata Theory, Switching Theory, Programming Theory - 723.4 Artificial Intelligence - 723.4.1 Expert Systems - 731.1 Control Systems - 732.1 Control Equipment
DOI: 10.13465/j.cnki.jvs.2015.24.001
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

18. The feasible applied experimental study on air foam drive under the high-pressure condition in heterogeneous light reservoirs

Accession number: 20143618143072
Authors: Liu, Yifei (1, 2); Mi, Jie (1, 2)
Author affiliation: (1) Xi'an Shiyou University, Xi'an, China; (2) Western Low and Ultra-Low Permeability Reservoir Development and Treatment, Engineering Research,Center of Ministry of Education, China
Source title: Resources, Environment and Engineering - Proceedings of the 2014 Technical Congress on Resources, Environment and Engineering, CREE 2014
Abbreviated source title: Resour., Environ. Eng. - Proc. Tech. Congr. Resour., Environ. Eng., CREE
Issue title: Resources, Environment and Engineering - Proceedings of the 2014 Technical Congress on Resources, Environment and Engineering, CREE 2014
Issue date: 2015
Publication year: 2015
Pages: 351-356
Language: English
ISBN-13: 9781138027022
Document type: Conference article (CA)
Conference name: 2014 Technical Congress on Resources, Environment and Engineering, CREE 2014
Conference date: September 6, 2014 - September 7, 2014
Conference location: Hong Kong, Hong kong
Conference code: 107253
Publisher: Taylor and Francis - Balkema
Abstract: Air foam drive, which combines the advantages of both air drive and foam drive, is a new environmentally friendly Enhanced Oil Recovery (EOR) method that is energysaving and emission reduction. This paper states the indoor simulation method of air foam drive, analyzes the Enhanced Oil Recovery (EOR) mechanism and security of air injection and air foam drive and points out that air foam drive has a wider scope in application and the oil displacement

efficiency is much better than that of single air drive in heterogeneous reservoir. The results have a positive effect on the application and promotion in the relative oil fields.
Number of references: 4
Main heading: Enhanced recovery
Controlled terms: Emission control - Oil well flooding
Uncontrolled terms: Air foam - Air injection - Energy saving and emission reductions - Enhanced oil recovery - Heterogeneous reservoirs - High-pressure condition - Indoor simulation - Oil-displacement efficiency
Classification code: 451.2 Air Pollution Control - 511.1 Oil Field Production Operations
DOI: 10.1201/b17389-59
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

19. Seismic response optimization control and experimental study on spatial latticed structure based on GMM

Accession number: 20154101360694
Authors: Dai, Jian-Bo (1); Wang, She-Liang (2); Zhao, Xiang (2)
Author affiliation: (1) School of Mechanical Engineering, Xi'an Shiyou University, Xi'an; 710065, China; (2) School of Civil Engineering, Xi'an University of Architecture and Technology, Xi'an; 710055, China
Source title: Zhendong yu Chongji/Journal of Vibration and Shock
Abbreviated source title: J Vib Shock
Volume: 34
Issue: 18
Issue date: September 28, 2015
Publication year: 2015
Pages: 129-135
Language: Chinese
ISSN: 10003835
Document type: Journal article (JA)
Publisher: Chinese Vibration Engineering Society
Abstract: In consideration of the stress and deformation characteristics of a spatial latticed structure under earthquakes, giant magnetostrictive material (GMM) was adopted as the main component to design a kind of new GMM active rod for active vibration control of the spatial latticed structure, and its output performance test was carried out. The genetic algorithm was used to optimize the location of GMM active rods in the spatial latticed structure, and the optimization results were analyzed and confirmed by the numerical simulation of a typical example and the earthquake simulation shaking table test of a Kiewit shell model structure. The result shows that the GMM active rod has fine actuation effect and the optimal control method proposed can improve the efficiency of spatial structure active vibration control. It also shows that the GMM active rods with the optimal control method are effective, and the active control of the structure can achieve higher efficiency and better economy. ©, 2015, Chinese Vibration Engineering Society. All right reserved.
Number of references: 3
Main heading: Earthquakes
Controlled terms: Structural optimization - Efficiency - Vibration control - Genetic algorithms - Seismic response - Control rods
Uncontrolled terms: Active vibration controls - Earthquake simulation - Giant magnetostrictive materials - GMM active rod - Optimal control methods - Optimal controls - Shaking table tests - Stress and deformation
Classification code: 484 Seismology - 484.2 Secondary Earthquake Effects - 621 Nuclear Reactors - 731.3 Specific Variables Control - 913.1 Production Engineering - 921.5 Optimization Techniques
DOI: 10.13465/j.cnki.jvs.2015.18.022
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

20. TCF-MMF-TCF fiber structure based interferometer for refractive index sensing

Accession number: 20151100638383
Authors: Fu, Haiwei (1); Li, Huidong (1); Shao, Min (1); Zhao, Na (1); Liu, Yinggang (1); Li, Yan (1); Yan, Xu (1); Liu, Qinpeng (1)

Author affiliation: (1) Xi'an Shiyou University, Ministry of Education Key Laboratory on Photoelectric Oil-gas Logging and Detecting, Dianzi 2nd Road, Yanta District, Xi'an; 710065, China
Corresponding author: Fu, Haiwei(hwfu@xsyu.edu.cn)
Source title: Optics and Lasers in Engineering
Abbreviated source title: Opt Lasers Eng
Volume: 69
Issue date: June 2015
Publication year: 2015
Pages: 58-61
Language: English
ISSN: 01438166
CODEN: OLENDN
Document type: Journal article (JA)
Publisher: Elsevier Ltd
Abstract: A liquid refractive index (RI) sensor based on in-fiber Mach-Zehnder interferometer (MZI) by sandwiching multi-mode fiber (MMF) between two short sections of thinned core fiber (TCF) is proposed in this paper. The first section of TCF excites the high-order modes and the second section TCF couples the core mode and high-order modes into lead-out SMF to form intermodal interference. The sensor with MMF length of 20 mm and TCFs length of 1 mm was fabricated. The transmission spectrum variation of the sensor with respect to surrounding refractive index (SRI) has been studied by experiment. The results show that the central wavelength of dips/peaks shifting had a good linearity with SRI. The RI sensitivity of the sensor is 130.00 nm/RIU over the RI range of 1.3333-1.4182. The RI sensitivity increase to 433.60 nm/RIU after etching the MMF cladding of the sensor. The sensor keeps low dependence on temperature before and after etching.
Number of references: 12
Main heading: Multimode fibers
Controlled terms: Interferometers - Etching - Refractive index
Uncontrolled terms: In-fiber - Intermodal interferences - Liquid refractive index - Multi-mode fibers (MMF) - Refractive index sensing - RI sensing - Surrounding refractive indices (SRI) - Transmission spectrums
Classification code: 741.1 Light/Optics - 741.1.2 Fiber Optics - 802.2 Chemical Reactions - 941.3 Optical Instruments
Numerical data indexing: Size 1.00e-03m, Size 2.00e-02m
DOI: 10.1016/j.optlaseng.2014.12.014
Funding Details: Number: 14JS073, Acronym: -, Sponsor: -; Number: 61077060,61240028,61275088, Acronym: NSFC, Sponsor: National Natural Science Foundation of China; Number: 2014QN005, Acronym: XSYU, Sponsor: Xi'an Shiyou University; Number: 2009AA06Z203, Acronym: -, Sponsor: National High-tech Research and Development Program;
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Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

21. Bis(2-{1-[(2,4,6-trimethylphenyl)imino]ethyl}pyrrol-1-ido-$_{\kappa 2}$ N,N')nickel(II): A supramolecular structure formed by C - H#(arene) hydrogen bonds

Accession number: 20154901648878
Authors: Su, Bi-Yun (1); Li, Xiao-Teng (1); Wang, Jia-Xiang (2); Wang, Xu-Dong (1)
Author affiliation: (1) College of Chemistry and Chemical Engineering, Xi'An ShiYou University, Xi'an, Shaanxi; 710065, China; (2) Changzheng Engineering Co. Ltd, Lanzhou Branch, Lanzhou, Gansu; 730000, China
Corresponding author: Su, Bi-Yun(subiyun@xsyu.edu.cn)
Source title: Acta Crystallographica Section C: Structural Chemistry
Abbreviated source title: Acta crystallogr., C Struct. Chem.
Volume: 71
Issue date: 2015
Publication year: 2015
Pages: 1053-1056
Language: English

E-ISSN: 20532296
CODEN: ACSCGG
Document type: Journal article (JA)
Publisher: International Union of Crystallography, 5 Abbey Road, Chester, CH1 2HU, United Kingdom
Abstract: Nitrogen-based polydentate ligands are of interest owing to their flexible complexation to transition metal atoms. For the title compound, [Ni(C15H17N2)2], a transition metal complex formed by the coordination of two identical N,N'-bidentate mono(imino)pyrrolyl ligands to an NiII centre, an X-ray crystal diffraction study indicates that the two ligands show an inverted arrangement with respect to one another around the NiII centre, which is located on a crystallographic inversion centre. The planes of the aromatic substituents at the imine N atoms of the ligands show dihedral angles of 85.91;(5)° with respect to the NiN4 plane. The Ni - N bond lengths are in the range 1.9072;(15)-1.9330;(15);A and the Nimino - Ni - Npyrrole bite angles are 83.18;(6)°. The Ni - Npyrrole bond is substantially shorter than the Ni - Nimino bond. Molecules are linked into an extensive network by means of intermolecular C - H#(arene) hydrogen bonds in which every molecule acts both as hydrogen-bond donor and acceptor. The supramolecular assembly takes the form of an infinite two-dimensional sheet. © 2015 International Union of Crystallography.
Number of references: 20
Main heading: Ligands
Controlled terms: Complexation - Metal complexes - Transition metals - Nickel compounds - Crystal structure - Supramolecular chemistry - Hydrogen bonds - Molecules - Dihedral angle
Uncontrolled terms: Flexible complexation - Hydrogen bond donors - imine - Nickel complex - Pyrrolide - Supramolecular assemblies - Supramolecular structure - Transition metal atoms
Classification code: 531 Metallurgy and Metallography - 652.1 Aircraft, General - 801.4 Physical Chemistry - 802.2 Chemical Reactions - 804.2 Inorganic Compounds - 931.3 Atomic and Molecular Physics - 933.1.1 Crystal Lattice
DOI: 10.1107/S2053229615020781
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

22. Experimental simulation of gas seepage characteristics of a low-permeability volcanic rock gas reservoir under different water saturations

Accession number: 20153801293250
Authors: Liu, Zhidi (1); Zhao, Jingzhou (1); Liu, Hongxian (2); Wang, Jian (1)
Author affiliation: (1) School of Earth Sciences and Engineering, Xi'an Shiyou University, Xi'an; 710065, China; (2) Exploration and Development Institute, Xinjiang Oilfield Company, Karamay Xinjiang; 834000, China
Source title: Chemistry and Technology of Fuels and Oils
Abbreviated source title: Chem. Technol. Fuels Oils
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Issue date: May 1, 2015
Publication year: 2015
Pages: 199-206
Language: English
ISSN: 00093092
E-ISSN: 15738310
Document type: Journal article (JA)
Publisher: Springer Science and Business Media, LLC
Abstract: During the gas production process, the permeability of a low-permeability volcanic gas reservoir increases with decreasing water saturation. Additionally, at constant water saturation, the permeability generally increases with decreasing pore pressure if the water saturation is lower than 40%, and the permeability increases slightly with increasing pore pressure if the water saturation is higher than 40%. We undertook this research work in the Kalamay volcanic gas reservoir in the Junggar Basin of China because this gas reservoir has typical seepage characteristics and there are unknown low-permeability volcanic gas reservoirs. Therefore, to study the seepage characteristics of gas in a low-permeability volcanic gas reservoir at different water saturations, we designed experimental methods of measuring the permeability, saturation, and flow rate in the course of core gas displacement to examine the effects of water saturation on gas seepage during the gas production process. In the study, we performed simulation experiments on eight volcanic cores sampled from three wells in the research area and analyzed their gas seepage characteristics at different levels of water saturation. The results reveal that the gas permeability of water-bearing volcanic reservoirs with low permeability values depends mainly on water saturation and pore pressure. Regardless

of the slippage effect on the gas, the permeability of the reservoirs depends largely on the degree of original water saturation. In other words, the degree of water saturation directly determines the seepage capability of gas in reservoirs. The critical value of water saturation in the low-permeability volcanic gas reservoirs may be defined as 40%. When the water saturation is higher than 40%, the permeability increases with increasing pore pressure but does not increase substantially. Under these conditions, the gas seepage shows the characteristics of liquid-phase seepage, the gas-water seepage relation is complex, and the resistance to gas seepage is large. All of these make development very difficult and ineffective. When the water saturation is lower than 40%, the permeability increases with decreasing pore pressure, and the seepage characteristics of the gas follow those of a single-phase gas. Under these conditions, the degree of water saturation only influences the permeability of the reservoir and has little impact on the seepage characteristics of the gas. © ?2015 Springer Science+Business Media New York.
Number of references: 2
Main heading: Pore pressure
Controlled terms: Low permeability reservoirs - Volcanoes - Gases - Gas permeability - Petroleum reservoir engineering - Seepage
Uncontrolled terms: Experimental methods - Experimental simulations - Gas production process - Gas reservoir - Permeability increase - Seepage characteristics - Volcanic - Water saturations
Classification code: 483.1 Soils and Soil Mechanics - 484 Seismology - 512.1 Petroleum Deposits - 512.1.2 Petroleum Deposits : Development Operations - 931.2 Physical Properties of Gases, Liquids and Solids
Numerical data indexing: Percentage 4.00e+01%
DOI: 10.1007/s10553-015-0593-x
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

23. Vibration control tests of a model structure installed with piezoelectric friction damper with reset function

Accession number: 20153301178073
Authors: Zhan, Meng (1); Wang, She-Liang (1); Zhu, Jun-Qiang (1); Zhu, Xi-Yu (2)
Author affiliation: (1) College of Civil Engineering Xi'an University of Architecture and Technology, Xi'an; 710055, China; (2) College of Mechanical Engineering Xi'an Shiyou University, Xi'an; 710065, China
Corresponding author: Wang, She-Liang
Source title: Zhendong yu Chongji/Journal of Vibration and Shock
Abbreviated source title: J Vib Shock
Volume: 34
Issue: 14
Issue date: July 28, 2015
Publication year: 2015
Pages: 45-50
Language: Chinese
ISSN: 10003835
Document type: Journal article (JA)
Publisher: Chinese Vibration Engineering Society
Abstract: A kind of piezoelectric friction damper with reset function was designed. According to the force and deformation characteristics of a transmission tower structure, two damper installation ways namely, the bar connection type and rope connection type were put forward. Corresponding simulated earthquake shaking table tests were carried out on a model structure. Based on the characteristics of the two ways of damper installation, a fuzzy control strategy with strain response and speed response as the inputs was established. Seismic responses of the transmission tower structure with non-control, passive control and semi-active control were tested under EL-Centro seismic wave excitation. The experimental results show that the piezoelectric friction damper can effectively reduce the seismic peak of the model structure under both the ways of damper installation. The fuzzy control algorithm with strain response and speed response as the inputs is simple in strusture and is easy to be operated in actual applications. It can change in real time the damper friction according to the dynamic responses of the structure to realize the vibration control of structures. ©, 2015, Chinese Vibration Engineering Society. All right reserved.
Number of references: 9
Main heading: Fuzzy control
Controlled terms: Vibration control - Dynamic response - Piezoelectricity - Friction - Seismology - Tribology - Seismic waves

Uncontrolled terms: Deformation Characteristics - Earthquake shaking - Fuzzy control strategy - Piezoelectric friction damper - Reset functions - Shaking table tests - Transmission tower - Vibration control of structures
Classification code: 484 Seismology - 484.1 Earthquake Measurements and Analysis - 701.1 Electricity: Basic Concepts and Phenomena - 731 Automatic Control Principles and Applications - 731.3 Specific Variables Control - 931 Classical Physics; Quantum Theory; Relativity
DOI: 10.13465/j.cnki.jvs.2015.14.009
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

24. Wear resistance of two kinds of high-strength casings: An experimental study

Accession number: 20151200672624
Authors: Zhang, Jianbing (1); Han, Yong (2); Xiao, Guozhang (3)
Author affiliation: (1) Xi'an Shiyou University, Xi'an; Shaanxi; 710065, China; (2) Xi'an Maurer Petroleum Engineering Laboratory, Xi'an; Shaanxi; 710065, China; (3) Baoji Petroleum Steel Pipe Co., Ltd., CNPC, Baoji; Shaanxi; 721008, China
Corresponding author: Zhang, Jianbing(zhjb@xsyu.edu.cn)
Source title: Natural Gas Industry
Abbreviated source title: Natur. Gas Ind.
Volume: 35
Issue: 2
Issue date: February 25, 2015
Publication year: 2015
Pages: 64-69
Language: Chinese
ISSN: 10000976
CODEN: TIGOE3
Document type: Journal article (JA)
Publisher: Natural Gas Industry Journal Agency
Abstract: Casing wear is a noticeable issue in the drilling operations of deep and ultra-deep gas wells, so it is remarkably important to investigate the wear resistance of P110 and V140 steel for the casing selection in drilling design. In this paper, the full-scale casing wear tester produced by Moore Industries International, Inc. was used to simulate the actual drilling parameters and drilling fluid formula used in oil and gas fields. Sequentially, full-scale physical wear tests on P110 and V140 steel casings were conducted under three typical low, medium and high lateral contact forces between tool joints and the casing interior wall. Afterwards, associated inspections and a comparative analysis were performed for the depth and width of casing wear groove, wear coefficient, friction coefficient, wear volume, and other parameters which were obtained at different wear stages of casing samples. Finally, the casing friction surface was examined by a scanning electron microscope to further discuss the casing wear mechanism under different working conditions. The study showed that under a low lateral contact force, the wear degrees of two kinds of casings were similar; but under a medium lateral contact force, V140 steel casing was worn more seriously than P110 steel casing, and under a high lateral contact force, P110 steel casing was worn obviously more serious. With the increase in the lateral contact force between tool joints and the casing interior wall, the friction coefficient in a frictional pair increased accordingly, which was in an adhesive wear state. This study will provide valuable reference for the casing selection in the casing string design based on the casing wear resistance considered according to different wellbore curvatures. ©, 2015, Natural Gas Industry Journal Agency. All right reserved.
Number of references: 15
Main heading: Wear resistance
Controlled terms: Natural gas fields - Friction - Scanning electron microscopy - Oil well drilling - Tribology - Gas industry - Wear of materials - Drilling fluids - Oil wells
Uncontrolled terms: Casing - Friction coefficients - Frictional wear - Full scale tests - Lateral contact - Ultra-deep wells - Wear mechanisms
Classification code: 512.1.1 Oil Fields - 512.1.2 Petroleum Deposits : Development Operations - 512.2.1 Natural Gas Fields - 522 Gas Fuels - 931 Classical Physics; Quantum Theory; Relativity - 931.2 Physical Properties of Gases, Liquids and Solids - 951 Materials Science
DOI: 10.3787/j.issn.1000-0976.2015.02.010
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

25. Effects of tilt interface boundary on mechanical properties of Cu/Ni nanoscale metallic multilayer composites

Accession number: 20153701265615
Authors: Yang, Meng (1); Xu, Jian-Gang (1); Song, Hai-Yang (2); Zhang, Yun-Guang (1)
Author affiliation: (1) School of Science, Xi'An University of Posts and Telecommunications, Xi'an; 710121, China; (2) College of Materials Science and Engineering, Xi'An Shiyou University, Xi'an; 710065, China
Corresponding author: Song, Hai-Yang(ymphysics@163.com)
Source title: Chinese Physics B
Abbreviated source title: Chin. Phys.
Volume: 24
Issue: 9
Issue date: September 1, 2015
Publication year: 2015
Article number: 096202
Language: English
ISSN: 16741056
E-ISSN: 20583834
Document type: Journal article (JA)
Publisher: IOP Publishing Ltd
Abstract: The effect of tilt interfaces and layer thickness of Cu/Ni multilayer nanowires on the deformation mechanism are investigated by molecular dynamics simulations. The results indicate that the plasticity of the sample with a 45° tilt angle is much better than the others. The yield stress is found to decrease with increasing the tilt angle and it reaches its lowest value at 33°. Then as the tilt angle continues to increase, the yield strength increases. Furthermore, the studies show that with the decrease of layer thickness, the yield strength gradually decreases. The study also reveals that these different deformation behaviors are associated with the glide of dislocation. © 2015 Chinese Physical Society and IOP Publishing Ltd.
Number of references: 33
Main heading: Yield stress
Controlled terms: Deformation - Multilayers - Molecular dynamics
Uncontrolled terms: Deformation behavior - Deformation mechanism - Glide of dislocations - Interface boundaries - Metallic multilayers - Molecular dynamics simulations - Multilayer composite - Strength increase
Classification code: 801.4 Physical Chemistry - 951 Materials Science
DOI: 10.1088/1674-1056/24/9/096202
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

26. Review of large-scale RDF data processing in mapreduce (*Open Access*)

Accession number: 20163202695611
Authors: Hou, Ke (1, 2); Zhang, Ming (1); Fang, Xing (2)
Author affiliation: (1) School 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
Corresponding author: Hou, Ke
Source title: Journal of Software Engineering
Abbreviated source title: J. Softw. Eng.
Volume: 9
Issue: 1
Issue date: 2015
Publication year: 2015
Pages: 195-202
Language: English
ISSN: 18194311
E-ISSN: 21520941
Document type: Journal article (JA)
Publisher: Academic Journals Inc.
Abstract: Resource Description Framework (RDF) is an important data presenting standard of semantic web and how to process, the increasing RDF data is a key problem for development of semantic web. MapReduce is a widely-used

parallel programming model which can provide a solution to large-scale RDF data processing. This study reviews the recent literatures on RDF data processing in MapReduce framework in aspects of the forward-chaining reasoning, the simple querying and the storage mode determined by the related querying method. Finally, it is proposed that the future research direction of RDF data processing should aim at the scalable, increasing and complex RDF data query. © 2015 Academic Journals Inc.
Number of references: 28
Main heading: Digital storage
Controlled terms: MapReduce - Resource Description Framework (RDF) - Parallel programming - Data handling
Uncontrolled terms: Future research directions - Large-scale RDF datum - Mapreduce frameworks - Parallel programming model - RDF query - RDF reasoning - RDF storage - Resource description framework
Classification code: 722.1 Data Storage, Equipment and Techniques - 723 Computer Software, Data Handling and Applications - 723.1 Computer Programming - 723.2 Data Processing and Image Processing - 723.5 Computer Applications
DOI: 10.3923/jse.2015.195.202
Compendex references: YES
Open Access type(s): All Open Access, Bronze
Database: Compendex
Data Provider: Engineering Village

27. Effects of layer thickness and strain rate on mechanical properties of copper-gold multilayer nanowires (*Open Access*)

Accession number: 20150600488188
Authors: Fan, Qian (1); Xu, Jian-Gang (1); Song, Hai-Yang (1, 2); Zhang, Yun-Guang (1)
Author affiliation: (1) School of Science, Xi'an University of Posts and Telecommunications, Xi'an; 710121, China; (2) College of Materials Science and Engineering, Xi'an Shiyou University, Xi'an; 710065, China
Corresponding author: Song, Hai-Yang(gsfshy@sohu.com)
Source title: Wuli Xuebao/Acta Physica Sinica
Abbreviated source title: Wuli Xuebao
Volume: 64
Issue: 1
Issue date: January 5, 2015
Publication year: 2015
Article number: 016201
Language: Chinese
ISSN: 10003290
CODEN: WLHPAR
Document type: Journal article (JA)
Publisher: Institute of Physics, Chinese Academy of Sciences
Abstract: Effects of individual layer thickness and strain rate on the mechanical behavior of copper-gold multilayer nanowires as well as the dislocation nucleation mechanism under a uniform tensile loading are investigated using molecular dynamics method. Simulations indicate that the highest yield strength increases with the increase of the individual layer thickness. Furthermore, the result also shows that the mechanical properties in the tensile process at different strain rates are dramatically different from each other, where the dislocation motion and twinning deformation are at a lower strain rate, while the individual atoms are at a higher strain rate for leading to amorphization. The general conclusions derived from this work can provide a guideline for the design of high performance multilayer composite materials. © 2015 Chinese Physical Society.
Number of references: 43
Page count: 7
Main heading: Copper
Controlled terms: Gold - Multilayers - Strain rate - Molecular dynamics - Nanowires
Uncontrolled terms: Dislocation motion - Dislocation nucleation - Mechanical behavior - Molecular dynamics methods - Multilayer composite materials - Multilayer nanowires - Strength increase - Tensile loading
Classification code: 544.1 Copper - 547.1 Precious Metals - 761 Nanotechnology - 801.4 Physical Chemistry - 933 Solid State Physics
DOI: 10.7498/aps.64.016201
Funding Details: Number: 10902083, Acronym: -, Sponsor: -;
Compendex references: YES
Open Access type(s): All Open Access, Hybrid Gold

Database: Compendex
Data Provider: Engineering Village

28. Corrosion resistance of Fe-Al/Al2O3 duplex coating on pipeline steel X80 in simulated oil and gas well environment

Accession number: 20151900821729
Authors: Huang, Min (1, 2); Wang, Yu (1); Wang, Ping-Gu (1); Shi, Qin-Yi (1); Zhang, Meng-Xian (1)
Author affiliation: (1) Zhejiang Provincial Key Laboratory for Cutting Tools, TaiZhou University, TaiZhou; 318000, China; (2) School of Materials Science and Engineering, Xi'An Shiyou University, Xi'an; 710065, China
Corresponding author: Wang, Yu(wymater@163.com)
Source title: Surface Review and Letters
Abbreviated source title: Surf. Rev. Lett.
Volume: 22
Issue: 4
Issue date: August 16, 2015
Publication year: 2015
Article number: 1550045
Language: English
ISSN: 0218625X
CODEN: SRLEFH
Document type: Journal article (JA)
Publisher: World Scientific
Abstract: Corrosion resistant Fe-Al/Al2O3 duplex coating for pipeline steel X80 was prepared by a combined treatment of low-temperature aluminizing and micro-arc oxidation (MAO). Phase composition and microstructure of mono-layer Fe-Al coating and Fe-Al/Al2O3 duplex coating were studied by X-ray diffraction (XRD), scanning electron microscope (SEM) with energy dispersive spectrometer (EDS). Corrosion resistance of the coated pipeline steel X80 in a simulated oil and gas well condition was also investigated. Mono-layer Fe-Al coating consists of Fe2Al5 and FeAl, which is a suitable transitional layer for the preparation of ceramic coating by MAO on the surface of pipeline steel X80. Under the same corrosion condition at 373 K for 168 h with 1 MPa CO2 and 0.1 MPa H2S, corrosion weight loss rate of pipeline steel X80 with Fe-Al/Al2O3 duplex coating decreased to 23% of original pipeline steel X80, which improved by 10% than that of pipeline steel X80 with mono-layer Fe-Al coating. It cannot find obvious cracks and pits on the corrosion surface of pipeline steel X80 with Fe-Al/Al2O3 duplex coating. © 2015 World Scientific Publishing Company.
Number of references: 17
Main heading: Corrosion resistance
Controlled terms: Aluminum corrosion - Corrosion resistant coatings - Steel corrosion - Chromium alloys - Pipeline corrosion - Pipelines - X ray diffraction - Aluminum alloys - Ceramic coatings - Ceramic materials - Aluminum coated steel - Spectrometers - Aluminum coatings - Scanning electron microscopy - Steel pipe - Temperature
Uncontrolled terms: Al/Al2O3 - Combined treatment - Corrosion weight loss - Corrosion-resistant - Energy dispersive spectrometers - Oil and gas - Pipeline steel - Transitional layers
Classification code: 539.1 Metals Corrosion - 539.2 Corrosion Protection - 541.1 Aluminum - 541.2 Aluminum Alloys - 543.1 Chromium and Alloys - 545.3 Steel - 619.1 Pipe, Piping and Pipelines - 641.1 Thermodynamics - 741.3 Optical Devices and Systems - 812.1 Ceramics - 813.2 Coating Materials
Numerical data indexing: Percentage 1.00e+01%, Percentage 2.30e+01%, Temperature 3.73e+02K, Time 6.05e+05s
DOI: 10.1142/S0218625X15500456
Funding Details: Number: LQ15E010002, Acronym: -, Sponsor: Natural Science Foundation of Zhejiang Province; Number: SKLSP201210, Acronym: -, Sponsor: -; Number: 51404157, Acronym: -, Sponsor: -; Number: 2012D-5006-0607, Acronym: -, Sponsor: PetroChina Innovation Foundation;
Funding text: This work was supported in part by Natural Science Foundation of Zhejiang Province under Grant No. LQ15E010002, PetroChina Innovation Foundation (Grant No. 2012D-5006-0607), the fund of the State Key Laboratory of Solidi¯cation Processing in NWPU (SKLSP201210) and the National Natural Science Foundations of China (51404157). We acknowledge the assistance from Dr. Xianghong Lv and Dr. Yani Zhang in Xi'an Shiyou University.
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

29. Effect of twin boundary on nanoimprint process of bicrystal Al thin film studied by molecular dynamics simulation

Accession number: 20150700519231
Authors: Xie, Yue-Hong (1); Xu, Jian-Gang (1); Song, Hai-Yang (2); Zhang, Yun-Guang (1)
Author affiliation: (1) School of Science, Xi'An University of Posts and Telecommunications, Xi'an; 710121, China; (2) College of Materials Science and Engineering, Xi'An Shiyou University, Xi'an; 710065, China
Corresponding author: Xie, Yue-Hong(lengyue204@163.com)
Source title: Chinese Physics B
Abbreviated source title: Chin. Phys.
Volume: 24
Issue: 2
Issue date: February 2015
Publication year: 2015
Article number: 026201
Language: English
ISSN: 16741056
E-ISSN: 20583834
Document type: Journal article (JA)
Publisher: IOP Publishing Ltd
Abstract: The effects of a twin boundary (TB) on the mechanical properties of two types of bicrystal Al thin films during the nanoimprint process are investigated by using molecular dynamics simulations. The results indicate that for the TB direction parallel to the imprinting direction, the yield stress reaches the maximum for the initial dislocation nucleation when the mould directly imprints to the TB, and the yield stress first decreases with the increase of the marker interval and then increases. However, for the TB direction perpendicular to the imprinting direction, the effect of the TB location to the imprinting forces is very small, and the yield stress is greater than that with the TB direction parallel to the imprinting direction. The results also demonstrate that the direction of the slip dislocations and the deformation of the thin film caused by spring-back are different due to various positions and directions of the TB. © 2015 Chinese Physical Society and IOP Publishing Ltd.
Number of references: 40
Main heading: Molecular dynamics
Controlled terms: Thin films - Yield stress
Uncontrolled terms: Bi-crystal Al - Dislocation nucleation - Molecular dynamics simulations - Nano-imprint - Nanoimprint process - Slip dislocation - Spring back - Twin boundaries
Classification code: 801.4 Physical Chemistry - 951 Materials Science
DOI: 10.1088/1674-1056/24/2/026201
Funding Details: Number: 10902083, Acronym: NSFC, Sponsor: National Natural Science Foundation of China;
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

30. Electrochemical behaviour of X80 pipeline steel with alumina coating

Accession number: 20153301176796
Authors: Huang, M. (1, 2); Zhang, M.-X. (1); Wang, Y. (1); Zhang, P. (1); Xu, A.-J. (1)
Author affiliation: (1) Zhejiang Provincial Key Laboratory for Cutting Tools, Taizhou University, Taizhou; 318000, China; (2) School of Materials Science and Engineering, Xi'an Shiyou University, Xi'an; 710065, China
Corresponding author: Zhang, M.-X.
Source title: Surface Engineering
Abbreviated source title: Surf Eng
Volume: 31
Issue: 4
Issue date: 2015
Publication year: 2015
Pages: 295-301
Language: English
ISSN: 02670844
E-ISSN: 17432944
CODEN: SUENET

Document type: Journal article (JA)
Publisher: Maney Publishing
Abstract: X80 pipeline steel was firstly aluminised at a relative low temperature then treated by a microarc oxidation process. Electrochemical behaviour of X80 pipeline steel before and after the combined treatment was evaluated by electrochemical tests in different solution. Results show that ceramics coating composed of α–Al2O3 and c-Al2O3 can be obtained on the surface of X80 pipeline steel by the combined treatment. In neutral 35% NaCl solution and alkaline solution (pH59), X80 pipeline steel with ceramics coating shows a higher corrosion potential and a lower corrosion current density than pure steel and the X80 pipeline steel treated by one-step aluminising. However, aluminising coating presents a better corrosion protection for X80 pipeline steel than that of ceramic coating in acidic solution with pH55. γ–Al2O3 is considered as the main reason for the corrosion resistance degradation of ceramic coating in acidic solution. © 2015 Institute of Materials, Minerals and Mining.
Number of references: 18
Main heading: Temperature
Controlled terms: Ceramic coatings - Corrosion resistance - Pipeline corrosion - Ceramic materials - Pipelines - Sodium chloride - Alumina - Steel corrosion - Steel pipe - Aluminum oxide - Corrosion resistant coatings - Alkalinity
Uncontrolled terms: Corrosion current densities - Corrosion potentials - Electrochemical behaviour - Electrochemical test - Low temperatures - Microarc oxidation - Resistance degradation - X80 pipeline steels
Classification code: 539.1 Metals Corrosion - 539.2 Corrosion Protection - 545.3 Steel - 619.1 Pipe, Piping and Pipelines - 641.1 Thermodynamics - 801.1 Chemistry, General - 804.2 Inorganic Compounds - 812.1 Ceramics - 813.2 Coating Materials
Numerical data indexing: Percentage 3.50e+01%
DOI: 10.1179/1743294414Y.0000000435
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

31. The Positive Effects of Biomass Materials as Additives on Dehydration Performance and the Pyrolysis System of Oily Sludge

Accession number: 20155201725199
Authors: Zhou, X. (1, 2, 3); Jia, H. (2, 3); Fan, D. (1, 3); Qu, C. (1, 3); Jiang, Y. (1, 3)
Author affiliation: (1) Northwestern University, Institute of Chemical Technology, Xian; 710069, China; (2) Materials Physics and Chemistry, Xinjiang Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, Urumqi, China; (3) Xian Shiyou University, Institute of Chemical Technology, Xian, China
Corresponding author: Qu, C.(xianquct@163.com)
Source title: Petroleum Science and Technology
Abbreviated source title: Petrol Sci Technol
Volume: 33
Issue: 21-22
Issue date: November 17, 2015
Publication year: 2015
Pages: 1829-1836
Language: English
ISSN: 10916466
E-ISSN: 15322459
CODEN: PSTEFV
Document type: Journal article (JA)
Publisher: Bellwether Publishing, Ltd.
Abstract: The focus of the research is the minimizing amount of oil sludge via dehydration. The effects of using combination of polyaluminum chloride and biomass as additives on the possible improvement of the dehydration performance (evaluated via water content of oily sludge) of oil sludge and on the yield of pyrolysis oil at 723 K were investigated. The main influencing factors of dehydration considered in the experiment are biomass species and dosage, temperature, and flocculation time. The water content of oily sludge was significantly reduced when biomass ranging from 0.5 to 3.0 wt% on dosage ratio. The best phase dehydration performance was obtained from Apricot shell of 0.5 wt% at 313-323 K at flocculate time of 30-40 min, while the highest recovery percent of pyrolysis oil (33.54%) was obtained from Walnut shell of 1.0 wt%. The results indicate that the positive effects of the biomass in oily sludge on the improvement of dehydration performance and on recovery rate of the pyrolysis oil were observed. The main reasons that the improvement of dehydration performance may be responsible for the mixtures containing different

proportions of oil sludge and biomass. The pyrolysis of the mixtures can increase the yield of pyrolysis oil and the higher heating value of oily sludge. Copyright © 2015 Taylor & Francis Group, LLC.
Number of references: 17
Main heading: Biomass
Controlled terms: Pyrolysis - Flocculation - Chlorine compounds - Dehydration - Mixtures
Uncontrolled terms: Biomass materials - Biomass species - Dehydration performance - Different proportions - Higher heating value - Oily sludges - Polyaluminum chloride - Recovery percent
Classification code: 802.2 Chemical Reactions - 802.3 Chemical Operations
Numerical data indexing: Percentage 3.35e+01%, Temperature 3.13e+02K to 3.23e+02K, Temperature 7.23e+02K, Time 1.80e+03s to 2.40e+03s
DOI: 10.1080/10916466.2015.1028646
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

32. Effect of coherent twin boundary and stacking fault on deformation behaviors of copper nanowires

Accession number: 20151600762647
Authors: Song, H.Y. (1); Sun, Y. (2)
Author affiliation: (1) College of Material Science and Engineering, Xi'an Shiyou University, Xi'an; 710065, China; (2) School of Science, Xi'an University of Posts and Telecommunications, Xi'an; 710121, China
Corresponding author: Song, H.Y.(gsfshy@sohu.com)
Source title: Computational Materials Science
Abbreviated source title: Comput Mater Sci
Volume: 104
Issue date: June 15, 2015
Publication year: 2015
Pages: 46-51
Language: English
ISSN: 09270256
CODEN: CMMSEM
Document type: Journal article (JA)
Publisher: Elsevier B.V., Netherlands
Abstract: The effect of coherent twin boundary (TB) spacing and stacking fault (SF) spacing on the deformation behaviors of copper nanowires (NWs) is investigated using molecular dynamics simulation. The study indicates that there is a pronounced shift in the mechanical behavior of nanotwinned copper NWs when TB spacing is smaller than 10.23 nm, which declares that there exists an optimal TB spacing, and that the peak stress decreases with decreasing coherent TB spacing, which reveals a reverse Hall-Petch relationship. The results also show that for the specimens with various SF spacing, the peak stress turns out to be a similar trend with those of nanotwinned specimens. When the SF spacing is rather fine, the SF acts as strong barrier like TB. In addition, the deformation behavior of crystalline copper containing parallel alternate TB and SF are also investigated. The results indicate that this model has higher peak stress and potential high peak strain. The general conclusions derived from this work may provide a guideline for the design of high-performance metal NWs.
Number of references: 38
Main heading: Molecular dynamics
Controlled terms: Copper - Deformation - Nanowires - Stacking faults
Uncontrolled terms: Coherent twin - Copper nanowires - Deformation behavior - Mechanical behavior - Molecular dynamics simulations - Nanotwinned copper - Reverse Hall-Petch relationship - Twin boundaries
Classification code: 544.1 Copper - 761 Nanotechnology - 801.4 Physical Chemistry - 933 Solid State Physics - 933.1.1 Crystal Lattice
Numerical data indexing: Size 1.02e-08m
DOI: 10.1016/j.commatsci.2015.03.052
Funding Details: Number: 2012KJXX-39, Acronym: -, Sponsor: -; Number: NCET-12-1046, Acronym: MOE, Sponsor: Ministry of Education of the People's Republic of China; Number: 2014JQ1036, Acronym: -, Sponsor: Natural Science Foundation of Shaanxi Province;
Funding text: This work is supported by the Program for New Century Excellent Talent in University of Ministry of Education of China (Grant No. NCET-12-1046), the Program for New Scientific and Technological Star of Shaanxi

Province (Grant No. 2012KJXX-39) and the Natural Science Basic Research Plan in Shaanxi Province of China (Grant No. 2014JQ1036).
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

33. Simulation of mechanical properties of carbon nanotubes with superlattice structure

Accession number: 20152901044868
Authors: Xi, H. (1); Song, H.Y. (1, 2); Zou, R. (1)
Author affiliation: (1) School of Science, Xi'An University of Posts and Telecommunications, Xi'an; 710121, China; (2) College of Materials Science and Engineering, Xi'An Shiyou University, Xi'an; 710065, China
Corresponding author: Song, H.Y.(gsfshy@sohu.com)
Source title: Current Applied Physics
Abbreviated source title: Curr. Appl. Phys.
Volume: 15
Issue: 10
Issue date: October 4, 2015
Publication year: 2015
Pages: 1216-1221
Language: English
ISSN: 15671739
Document type: Journal article (JA)
Publisher: Elsevier B.V., Netherlands
Abstract: The effect of radius and layer thickness on the mechanical properties of carbon nanotubes with 'zigzag-armchair-zigzag' superlattice structure (CNTSS) is investigated using molecular dynamics simulation method. The interactions between carbon atoms are modeled using the second-generation reactive empirical bond-order Brenner potential coupled with the Lennard-Jones potential. The results indicate that the Young's modulus of CNTSS shows a significant dependence on its radius and layer thickness. In contrast, the critical stress is insensitive to the layer thickness and radius of CNTSS. And the critical stress of CNTSS is close to that of its thicker carbon nanotubes segment. In addition, the damage modes of CNTSS depend on the connecting region due to the presence of 5-7 defects and the energy early concentrating in the junctions. The effects of the number of junctions on the mechanical properties of CNTSS are also discussed. The results indicate that the joints made in this way still have relatively high mechanical properties corresponding to that of the ideal single-walled carbon nanotube. © 2015 Elsevier B.V. All rights reserved.
Number of references: 38
Main heading: Molecular dynamics
Controlled terms: Lennard-Jones potential - Semiconductor junctions - Elastic moduli - Single-walled carbon nanotubes (SWCN) - Yarn
Uncontrolled terms: Armchair zigzags - Brenner potential - High mechanical properties - Molecular dynamics simulation methods - Molecular dynamics simulations - Reactive empirical bond orders - Second generation - Super-lattice structures
Classification code: 714.2 Semiconductor Devices and Integrated Circuits - 761 Nanotechnology - 801.4 Physical Chemistry - 819.4 Fiber Products - 931 Classical Physics; Quantum Theory; Relativity - 933.1 Crystalline Solids - 951 Materials Science
DOI: 10.1016/j.cap.2015.07.008
Funding Details: Number: 2012KJXX-39, Acronym: -, Sponsor: -; Number: 2014JQ1036,2015JM6327, Acronym: -, Sponsor: Natural Science Foundation of Shanghai; Number: NCET-12-1046, Acronym: MOE, Sponsor: Ministry of Education of the People's Republic of China; Number: CXL2014-22, Acronym: XUPT, Sponsor: Xi'an University of Posts and Telecommunications;
Funding text: This work is supported by the Program for New Century Excellent Talent in University of Ministry of Education of China (Grant No. NCET-12-1046), the Program for New Scientific and Technological Star of Shaanxi Province (Grant No. 2012KJXX-39), Shaanxi Natural Science Foundation (Grant Nos. 2014JQ1036 and 2015JM6327) and the Program for Graduate Innovation Fund of Xi'an University of Posts and Telecommunications (Grant No. CXL2014-22).
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

34. Erratum: Erratum to "refractive index measurement based on fiber Bragg grating connected with a multimode fiber core" (Opt. Commun. (2015) 351C:70-74) (*Open Access*)

Accession number: 20154201405914
Authors: Shao, Min (1); Qiao, Xueguang (2); Jia, Zhenan (1); Fu, Haiwei (1); Liu, Yinggang (1); Li, Huidong (1); Zhao, Xue (1)
Author affiliation: (1) Ministry of Education, Key Laboratory on Photoelectric Oil-Gas Logging and Detecting, School of Science, Xi'An Shiyou University, Xi'an, China; (2) School of Physics, Northwest University, Xi'an, China
Corresponding author: Shao, Min
Source title: Optics Communications
Abbreviated source title: Opt Commun
Volume: 355
Issue date: November 15, 2015
Publication year: 2015
Pages: 612
Language: English
ISSN: 00304018
CODEN: OPCOB8
Document type: Erratum (ER)
Publisher: Elsevier
DOI: 10.1016/j.optcom.2015.09.002
Open Access type(s): All Open Access, Bronze
Database: Compendex
Data Provider: Engineering Village

35. Preference Driven Multi-objective Optimization of Beam Pumping Process

Accession number: 20162902605141
Authors: Gao, Lun (1); Gu, Xiao-Hua (1); Wang, Kan (2); Li, Tai-Fu (1)
Author affiliation: (1) College of Electrical and Information Engineering, Chongqing University of Science and Technology, Chongqing; 401331, China; (2) School of Electric Engineering, Xi'an Shiyou University, Xi'an; 710065, China
Source title: Proceedings - 2015 8th International Symposium on Computational Intelligence and Design, ISCID 2015
Abbreviated source title: Proc. - Int. Symp. Comput. Intell. Des., ISCID
Volume: 1
Part number: 1of2
Issue title: Proceedings - 2015 8th International Symposium on Computational Intelligence and Design, ISCID 2015
Issue date: May 11, 2016
Publication year: 2015
Pages: 546-550
Article number: 7469013
Language: English
ISBN-13: 9781467395861
Document type: Conference article (CA)
Conference name: 8th International Symposium on Computational Intelligence and Design, ISCID 2015
Conference date: December 12, 2015 - December 13, 2015
Conference location: Hangzhou, Zhejiang, China
Conference code: 121826
Sponsor: IEEE Nanjing Computational Intelligence Chapter; University of Bristol; Zhejiang Sci-Tech University; Zhejiang University
Publisher: Institute of Electrical and Electronics Engineers Inc., United States
Abstract: Obtaining optimal decision parameters has significant meaning to improve the beam pumping process's inefficiency and energy-intensity. However, affected by uncertainties from mechanism, geological environment and human, it is hard to grasp the relationships among the operation parameters, the environment variables and the performances. This paper proposes a preference driven multi-objective optimization method to achieve optimal decision parameters based on neutral network model. First, using back propagation neutral network to find beam pumping system's latent rule represented by a model. Furthermore, constructing the preference function of oil yield, and finally using Non-dominated Sorting Genetic Algorithm II to optimize the preference driven multi-objective optimization problem which reaches the optimal decision parameters. The experimental results show that the optimal

decision parameters can reduce the energy consumption about 15.87%, which proves the feasibility and effectiveness of the proposed method. © 2015 IEEE.
Number of references: 19
Main heading: Multiobjective optimization
Controlled terms: Parameter estimation - Pumps - Energy utilization - Genetic algorithms
Uncontrolled terms: Beam pumping - Decision parameters - Geological environment - Multi-objective optimization problem - Neutral network - Non-dominated sorting genetic algorithm - ii - Operation parameters - Preference functions
Classification code: 525.3 Energy Utilization - 618.2 Pumps - 921.5 Optimization Techniques
Numerical data indexing: Percentage 1.59e+01%
DOI: 10.1109/ISCID.2015.192
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

36. Influences of coal seam on seismic reflection characteristics of sand and significances of seismic lithology: a case study of Shan-2 member in Ordos Basin

Accession number: 20150700525158
Authors: Lai, Shenghua (1); Liang, Quansheng (2); Zeng, Hongliu (3); Li, Pengfei (1)
Author affiliation: (1) Xi'an Shiyou University, Xi'an; Shaanxi; 710065, China; (2) Yanchang Petroleum (Group) Co. Ltd., Xi'an; Shaanxi; 716000, China; (3) University of Texas at Austin, Austin; 78758, United States
Corresponding author: Lai, Shenghua(laishenghua@126.com)
Source title: Shiyou Diqiu Wuli Kantan/Oil Geophysical Prospecting
Abbreviated source title: Shiyou Diqiu Wuli Kantan
Volume: 50
Issue: 1
Issue date: February 15, 2015
Publication year: 2015
Pages: 136-143
Language: Chinese
ISSN: 10007210
CODEN: SDWKEP
Document type: Journal article (JA)
Publisher: Science Press
Abstract: According to the fact that sand is directly overlain or underlain by coal seam of Permian Shan 2 member in Ordos Basin, six geologic models were designed, which include three layered sand models and there wedge-shaped sand models. The corresponding reflection coefficient of the models and Ricker wavelets with 0° and 90° phases and dominant frequencies from 5 to 120Hz (step 5Hz & sample interval 1ms) are calculated by convolution model, and then synthesis seismic datasets with different frequencies were obtained. Coal seam influence on seismic reflection characteristics of sand under wavelets with 0° and 90° phases were firstly simulated by extracting synthetic seismogram of upper, lower, and medium sand amplitude. The results show that coal seam thickness, position and the distance between coal and sand have influence on tuning frequency, tuning amplitude, reflection strength and polarity of seismic reflection. Coal seam can reverse polarity of sand seismic reflection, so sandstone thickness prediction is very difficult. When both coal seam thickness and the distance between coal and sand vary, the upper, lower, and medium sandstone amplitude cannot indicate its thickness. When thickness and position of coal seam vary, other methods should be used, such as amplitude slice at different positions. ©, 2015, Science Press. All right reserved.
Number of references: 27
Main heading: Lithology
Controlled terms: Coal - Coal deposits - Sand - Metamorphic rocks - Sandstone - Seismology - Seismic waves
Uncontrolled terms: Coal seam thickness - Coal seams - Different frequency - Ordos Basin - Ricker wavelets - Seismic reflection characteristics - Seismic reflections - Synthetic seismogram
Classification code: 481.1 Geology - 482.2 Minerals - 483.1 Soils and Soil Mechanics - 484 Seismology - 484.1 Earthquake Measurements and Analysis - 503 Mines and Mining, Coal - 524 Solid Fuels
Numerical data indexing: Frequency 5.00e+00Hz to 1.20e+02Hz, Time 1.00e-03s
DOI: 10.13810/j.cnki.issn.1000-7210.2015.01.021
Compendex references: YES
Database: Compendex

Data Provider: Engineering Village

37. Novel solid base catalyst for biodiesel production by surface modification CaO with ethyl bromide

Accession number: 20143600051645
Authors: Xue, Chenghu (1); Wang, Shanshan (2); Zhang, Zhifang (1); Tang, Ying (2)
Author affiliation: (1) School of Chemistry and Chemical Engineering, Yulin University, Yulin, Shaanxi; 719000, China; (2) College of Chemistry and Chemical Engineering, Xi'an Shiyou University, Xi'an, Shaanxi; 710065, China
Corresponding author: Tang, Ying
Source title: Research on Chemical Intermediates
Abbreviated source title: Res Chem Intermed
Volume: 41
Issue: 5
Issue date: May 1, 2015
Publication year: 2015
Pages: 2697-2707
Language: English
ISSN: 09226168
E-ISSN: 15685675
CODEN: RCINEE
Document type: Journal article (JA)
Publisher: Kluwer Academic Publishers
Abstract: Abstract To decrease the environmentally toxic wastewater caused by the homogeneous basic system of biodiesel production, a stable CaO was developed by modifying commercial CaO with ethyl bromide. Fourier transform infrared spectroscopies indicate that the modifier bonded onto the surface of CaO chemically. Almost no other water was adsorbed on the modified CaO surface, even with exposure in saturated water vapor atmosphere for 50 h, as suggested by the results of a humidity test, while a 98 % moisture absorption degree was detected over commercial CaO. The high catalytic activity of modified CaO in a 4 % water-content reaction system contributes to the hydrophobic layer formed by ethyl groups of modifier, which have the capacity of preventing the absorption of water to the CaO surface. Both the optimization of reaction condition and the water resistance of modified CaO were investigated in this work. © 2013 Springer Science+Business Media Dordrecht.
Number of references: 17
Main heading: Biodiesel
Controlled terms: Fourier transform infrared spectroscopy - Surface treatment - Catalyst activity - Water absorption - Toxic materials
Uncontrolled terms: Biodiesel production - Heterogeneous - Hydrophobic layers - Reaction conditions - Reaction system - Saturated water - Solid base catalysts - Water-resistances
Classification code: 523 Liquid Fuels - 801 Chemistry - 802.3 Chemical Operations - 803 Chemical Agents and Basic Industrial Chemicals - 804 Chemical Products Generally
Numerical data indexing: Percentage 4.00e+00%, Percentage 9.80e+01%, Time 1.80e+05s
DOI: 10.1007/s11164-013-1380-0
Funding Details: Number: 21306149, Acronym: NSFC, Sponsor: National Natural Science Foundation of China;
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

38. Study on Water Injection in Horizontal Wells of Low Permeability Reservoir (I)

Accession number: 20165303204743
Authors: Jin, Lv (1, 2)
Author affiliation: (1) Chemical-Machinery Department, Mechanical Engineering College, Xi'An Shiyou University, Xi'an; 710065, China; (2) State Key Laboratory of Multi-phase Flow, Xi'An Jiaotong University, Xi'an; 710049, China
Corresponding author: Jin, Lv(lvjin69@Hotmail.com)
Source title: Proceedings - 8th International Conference on Intelligent Computation Technology and Automation, ICICTA 2015
Abbreviated source title: Proc. - Int. Conf. Intell. Comput. Technol. Auto., ICICTA
Part number: 1of1

Issue title: Proceedings - 8th International Conference on Intelligent Computation Technology and Automation, ICICTA 2015
Issue date: May 18, 2016
Publication year: 2015
Pages: 896-899
Article number: 7473445
Language: English
ISBN-13: 9781467376440
Document type: Conference article (CA)
Conference name: 8th International Conference on Intelligent Computation Technology and Automation, ICICTA 2015
Conference date: June 14, 2015 - June 15, 2015
Conference location: Nanchang, Jiangxi, China
Conference code: 121722
Sponsor: Communications Research Institute of Changsha University of Science and Technology; Hong Kong Intelligent Computation Technology and Automation Association; Shenzhen Research Institute of Central South University
Publisher: Institute of Electrical and Electronics Engineers Inc., United States
Abstract: The technology of horizontal well injection has greater advantage to exploit low permeability reservoir, it has an important economic and engineering significance to design a reasonable horizontal well and calculate it's production capacity correctly for enhancing oil recover efficiency. © 2015 IEEE.
Number of references: 6
Main heading: Water injection
Controlled terms: Horizontal wells - Injection (oil wells) - Low permeability reservoirs - Petroleum reservoir engineering - Oil well flooding
Uncontrolled terms: Horizontal well injection - Production capacity
Classification code: 511.1 Oil Field Production Operations - 512.1 Petroleum Deposits - 512.1.1 Oil Fields - 512.1.2 Petroleum Deposits : Development Operations - 612.1 Internal Combustion Engines, General
DOI: 10.1109/ICICTA.2015.228
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

39. A new algorithm for detecting defects of sub-arc welding x-ray image based on compress sensor theory

Accession number: 20155201713327
Authors: Gao, Weixin (1); Hu, Yuheng (2); Wu, Xiaomeng (1)
Author affiliation: (1) School of Electrical Engineering, Xi'an Shiyou University, Xi'an; 710065, China; (2) Department of Electrical and Computer Engineering, University of Wisconsin-Madison, Madison; WI; 53705, United States
Source title: Hanjie Xuebao/Transactions of the China Welding Institution
Abbreviated source title: Hanjie Xuebao
Volume: 36
Issue: 11
Issue date: November 25, 2015
Publication year: 2015
Pages: 85-88
Language: Chinese
ISSN: 0253360X
CODEN: HHPAD2
Document type: Journal article (JA)
Publisher: Harbin Research Institute of Welding
Abstract: An efficient X-ray radiography image analysis algorithm is developed for submerged-arc welding defects detection. The compress sensor theory is incorporated into the new algorithm, and the problem of defect detection is changed to a model recognition problem. The given X-ray image is represented by a linear combination of few model X-ray images. If a dictionary of model defect images and noise images are obtained, the coefficient vector can give important information for deciding the given image is defect or noise. Thus a sparse vector representation is sought by performing l0, l1 and l2 norm minimization. Finally, the sparse representations of the defect part and noisy part are compared in the context of a maximum likelihood ratio test which leads to the final classification. Tested with 800 x-

ray radiography images obtained from a factory production line, the proposed algorithm achieves a sensitivity 99% and specificity 98%. © 2015, Harbin Research Institute of Welding. All right reserved.
Number of references: 10
Main heading: X ray radiography
Controlled terms: Maximum likelihood - Defects - Image recognition - X ray analysis - Image reconstruction - Submerged arc welding
Uncontrolled terms: Coefficient vector - Defect detection - Detecting defects - Linear combinations - Maximum likelihood ratios - Model recognition - Radiography images - Sparse representation
Classification code: 538.2.1 Welding Processes - 922.1 Probability Theory - 951 Materials Science
Numerical data indexing: Percentage 9.80e+01%, Percentage 9.90e+01%
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

40. An improved SMO algorithm for credit risk evaluation

Accession number: 20201708556284
Authors: Wang, Jue (1); Lu, Aiguo (2); Jiang, Xuemei (1)
Author affiliation: (1) Center for Forecasting Science, Academy of Mathematics and Systems Science Chinese Academy of Sciences, 100190, China; (2) Department of Applied Mathematics, Xi'an Shiyou University, Xian; 710065, China
Source title: Conferences in Research and Practice in Information Technology Series
Abbreviated source title: Conf. Res. Pract. Inf. Technol. Ser.
Volume: 168
Part number: 1 of 1
Issue title: Data Mining and Analytics 2015 - Proceedings of the 13th Australasian Data Mining Conference, AusDM 2015
Issue date: August 2015
Publication year: 2015
Pages: 169-176
Language: English
ISSN: 14451336
ISBN-13: 9781921770180
Document type: Conference article (CA)
Conference name: 13th Australasian Data Mining Conference, AusDM 2015
Conference date: August 8, 2015 - August 9, 2015
Conference location: Sydney, NSW, Australia
Conference code: 150073
Sponsor: togaware; University of Technology Sydney (UTS); UTS:QCIS; Western Sydney University
Publisher: Australian Computer Society
Abstract: Sequential minimal optimization (SMO) is the most commonly used algorithm for numerical solution of SVM, but traditional SMO is quite limited to the long execution time because of its high computational complexity. We present an improved SMO learning algorithm named FV-SMO in this paper. At each iteration, it jointly optimizes four variables and an theorem is proposed to guarantee an analytical solution of sub-problem. Three credit datasets are selected to demonstrate the performance of FV-SMO, including China credit dataset and two public datasets: German credit dataset from UCI and Darden credit dataset from CD-ROM databases. China credit dataset is generated based on a multi-dimensional and multi-level credit risk indicator system of China credit data. Experimental results demonstrate that FV-SMO is competitive in saving the computational cost and performs best in credit risk evaluation accuracy compared with other five popular classification methods. © 2015, Australian Computer Society, Inc.
Number of references: 20
Main heading: CD-ROM
Controlled terms: Data mining - Risk assessment - Optimization - Iterative methods
Uncontrolled terms: Classification methods - Computational costs - Credit risk evaluation - Credit risks - Multi dimensional - Numerical solution - Sequential minimal optimization - SMO algorithms
Classification code: 722.1 Data Storage, Equipment and Techniques - 723.2 Data Processing and Image Processing - 914.1 Accidents and Accident Prevention - 921.5 Optimization Techniques - 921.6 Numerical Methods
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

41. High temperature probe sensor with high sensitivity based on Michelson interferometer

Accession number: 20150400443215
Authors: Zhao, Na (1); Fu, Haiwei (1, 2); Shao, Min (1); Yan, Xu (1); Li, Huidong (1); Liu, Qinpeng (1); Gao, Hong (1); Liu, Yinggang (1); Qiao, Xueguang (2)
Author affiliation: (1) Ministry of Education, Key Laboratory on Photoelectric Oil-gas Logging and Detecting, Xi'An Shiyou University, Xi'an; 710065, China; (2) Department of Physics, Northwest University, Xi'an; 710069, China
Corresponding author: Fu, Haiwei(hwfu@xsyu.edu.cn)
Source title: Optics Communications
Abbreviated source title: Opt Commun
Volume: 343
Issue date: May 15, 2015
Publication year: 2015
Pages: 131-134
Language: English
ISSN: 00304018
CODEN: OPCOB8
Document type: Journal article (JA)
Publisher: Elsevier B.V., Netherlands
Abstract: A novel Michelson interferometer based on a bi-taper is achieved. Such a device is fabricated by splicing a section of thin core fiber (TCF) at one end of single-mode fiber (SMF). Due to the fiber bi-taper at the splicing point of SMF and TCF, the light is coupled into the fiber core and cladding from lead in fiber core. The light will be reflected at the end of the fiber and then will be recoupled back into the lead out fiber core by the fiber bi-taper. While the light returns back to the lead out fiber, the intermodal interference will occur for the optical path difference between core mode and cladding mode. A high temperature sensitivity of 0.140 nm/°C is achieved from 30 to 800 °C, and the linearity is 99.9%. The configuration features the advantages of easy fabrication, a compact size, high sensitivity, wide sensing range and high mechanical strength, making it a good candidate for distant temperature sensing and oil prospecting. ©2015 Elsevier B.V. All rights reserved.
Number of references: 20
Main heading: Single mode fibers
Controlled terms: Temperature measurement - Temperature sensors - Michelson interferometers
Uncontrolled terms: Configuration features - Fiber taper - High mechanical strength - High temperature sensitivity - Intermodal interferences - Optical path difference - Temperature sensing - Thin-core fibers
Classification code: 741.1.2 Fiber Optics - 941.3 Optical Instruments - 944.5 Temperature Measuring Instruments - 944.6 Temperature Measurements
Numerical data indexing: Percentage 9.99e+01%, Temperature 3.03e+02K to 1.07e+03K
DOI: 10.1016/j.optcom.2014.12.012
Funding Details: Number: 14JK1580, Acronym: -, Sponsor: Natural Science Foundation of Shaanxi Province; Number: 14JS073, Acronym: -, Sponsor: -; Number: 2013JM8032, Acronym: -, Sponsor: Natural Science Foundation of Shaanxi Province; Number: 61275088, Acronym: NSFC, Sponsor: National Natural Science Foundation of China;
Funding text: This work is supported by the National Natural Science Foundation of China under Grant nos. 61275088 , 61240028 ; the Research Foundation of Education Bureau of Shaanxi Province under Grant nos. 12JS077 , 14JS073 ; the Natural Science Foundation of Shaanxi Province under Grant no. 2013JM8032; the Science Foundation of Shaanxi Province under Grant no. 14JK1580 .
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

42. Optical fiber core diameter mismatched in-fiber Mach-Zehnder interferometer for strain sensing

Accession number: 20151100635573
Authors: Zhao, Na (1); Fu, Haiwei (1, 2); Qiao, Xueguang (2); Shao, Min (1, 2); Li, Huidong (1); Liu, Qinpeng (1); Gao, Hong (1); Yan, Xu (1); Zhang, Yunshan (1)
Author affiliation: (1) Xi'an Shiyou University, Ministry of Education Key Laboratory on Photoelectric Oil-gas Logging and Detecting, Dianzi 2nd Road, Xi'an; 710065, China; (2) Northwest University, Xi'an; 710069, China
Source title: Proceedings of SPIE - The International Society for Optical Engineering
Abbreviated source title: Proc SPIE Int Soc Opt Eng
Volume: 9449

Volume title: International Conference on Photonics and Optical Engineering, icPOE 2014
Part number: 1of1
Issue date: 2015
Publication year: 2015
Article number: 94491Y
Language: English
ISSN: 0277786X
E-ISSN: 1996756X
CODEN: PSISDG
ISBN-13: 9781628415650
Document type: Conference article (CA)
Conference name: International Conference on Photonics and Optical Engineering, icPOE 2014
Conference date: October 13, 2014 - October 15, 2014
Conference location: Xi'an, China
Conference code: 111356
Sponsor: Optics and Photonics Society of Singapore; Shaanxi Optical Society; Shaanxi Provincial Physical Society
Publisher: SPIE
Abstract: A novel strain sensor based on in-fiber Mach-Zehnder interferometer (MZI) is proposed in this paper. The sensor is with the structure of single mode-thin core-multimode-thin core-single mode (STMTS) fiber structures fabricated by splicing two short sections of thin core fiber (TCF) among lead-in single mode fiber (SMF), multi-mode fiber (MMF) and lead-out SMF. The first section of TCF excites the core mode and high-order modes in the core of MMF and the second section of TCF couples the core mode and high-order modes into lead-out SMF to procedure inter-modes interferences. The sensor with MMF length of 20mm and TCFs length of 1mm is fabricated. The transmission spectrum of the sensor with respect to external strain has been studied by experiment. The result shows that the central wavelength respects to external strain with a good linearity. The strain sensitivity of the sensor is -2 pm/ue; over a strain range of 0 to 4500ue;. The temperature response of the sensor is also studied by experiment. The results indicate that the central wavelength of the transmission spectrum is insensitive to external temperature change. The proposed sensor features the advantages of easy fabrication, low cost and high sensitivity, and it exhibits great potential in single parameter measurement. © 2015 SPIE.
Number of references: 14
Main heading: Multimode fibers
Controlled terms: Mach-Zehnder interferometers - Temperature sensors - Single mode fibers - Optical fiber fabrication
Uncontrolled terms: External temperature - In-fiber - Multi-mode fibers (MMF) - Optical fiber cores - Strain sensing - Temperature response - Temperature sensing - Transmission spectrums
Classification code: 741.1.2 Fiber Optics - 741.3 Optical Devices and Systems - 941.3 Optical Instruments - 944.5 Temperature Measuring Instruments
Numerical data indexing: Size 1.00e-03m, Size 2.00e-02m
DOI: 10.1117/12.2075148
Funding Details: Number: 61240028, Acronym: NSFC, Sponsor: National Natural Science Foundation of China; Number: 61275088, Acronym: NSFC, Sponsor: National Natural Science Foundation of China;
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

43. Catalytic performance of Mo-Ni/Al2O3 for thioetherification of FCC gasoline

Accession number: 20160201793748
Authors: Shen, Zhibing (1, 2); Ke, Ming (2); Zhang, Juntao (1); Zhang, Zhiping (1); Liang, Shengrong (1)
Author affiliation: (1) School of Chemistry and Chemical Engineering, Xi'an Shiyou University, Xi'an; 710065, China; (2) State Key Laboratory of Heavy Oil Processing, China University of Petroleum, Beijing; 102249, China
Corresponding author: Shen, Zhibing(shen_zhibing@163.com)
Source title: Shiyou Xuebao, Shiyou Jiagong/Acta Petrolei Sinica (Petroleum Processing Section)
Abbreviated source title: Shiyou Xuebao Shiyou Jiagong
Volume: 31
Issue: 6
Issue date: December 25, 2015
Publication year: 2015
Pages: 1269-1274
Language: Chinese

ISSN: 10018719
CODEN: SXSHEY
Document type: Journal article (JA)
Publisher: Science Press
Abstract: The thioetherification reaction is considered as the pretreatment step for the selective hydrogenation technology of FCC gasoline. The catalytic performance of Mo-Ni/Al2O3 catalyst in thioetherification reaction was evaluated with FCC gasoline as feedstocks in a fixed bed reactor to find the optimal reaction conditions, and then, a long time test was carried on to study its stability. The results showed that the optimized reaction conditions for thioetherification were pressure of 2.5 MPa, space velocity of 4 h-1, H2/oil volume ratio of 3 and temperature of 130, under which Mo-Ni/Al2O3 catalyst could run 600 h with the mercaptans conversion keeping above 95% and diene selective hydrogenation ratio of 100%, and no hydrogenation of olefins happening and the octane number of gasoline remaining. © 2015, Editorial Office of Acta Petrolei Sinica. All right reserved.
Number of references: 10
Main heading: Catalysts
Controlled terms: Hydrogenation - Nickel compounds - Chemical reactors - Aluminum compounds - Gasoline - Olefins
Uncontrolled terms: Catalytic performance - Fixed bed reactor - Hydrogenation of olefins - Ni/Al2O3 catalyst - Optimal reaction condition - Optimized reaction conditions - Selective hydrogenation - Thioetherification
Classification code: 523 Liquid Fuels - 802.1 Chemical Plants and Equipment - 802.2 Chemical Reactions - 803 Chemical Agents and Basic Industrial Chemicals - 804 Chemical Products Generally - 804.1 Organic Compounds
Numerical data indexing: Percentage 1.00e+02%, Percentage 9.50e+01%, Pressure 2.50e+06Pa, Time 2.16e+06s
DOI: 10.3969/j.issn.1001-8719.2015.06.003
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

44. A variable-length chromosome evolutionary algorithm for reversible circuit synthesis

Accession number: 20154801619985
Authors: Wang, Xiaoxiao (1, 2); Jiao, Licheng (1); Li, Yangyang (1); Qi, Yutao (1); Wu, Jianshe (1)
Author affiliation: (1) Key Laboratory of Intelligent Perception and Image Understanding of Ministry of Education, School of Electronic Engineering, Xidian University, China; (2) School of Computer Science, Xi'an Shiyou University, China
Corresponding author: Wang, Xiaoxiao(xxwang@xsyu.edu.cn)
Source title: Journal of Multiple-Valued Logic and Soft Computing
Abbreviated source title: J. Mult.-Valued Logic Soft Comput.
Volume: 25
Issue: 6
Issue date: 2015
Publication year: 2015
Pages: 643-671
Language: English
ISSN: 15423980
E-ISSN: 15423999
Document type: Journal article (JA)
Publisher: Old City Publishing
Abstract: A variable-length chromosome evolutionary algorithm for reversible circuit synthesis (VLEA RC) is presented to improve the quality of solutions in terms of quantum cost. The synthesis problem is formulated as a minimization problem with an equality constraint. To begin with, a modified stochastic ranking method for constraint handling is devised. This gives a better balance between decreasing the constraint violation and increasing the objective value through the use of parsimony pressure. Then, a periodic population update mechanism is applied when the evolution process stagnates. This mechanism employs heuristic information extracted from the positive polarity Reed-Muller expansion of the reversible specification. This can improve the feasible ratio and reduce the search space effectively. Our design is tested on several widely used benchmarks with circuit size varying from 4 to 30 inputs. The results show that the proposed method can find high quality solutions for the tested benchmarks as well as improve the circuit size that can be handled compared to previous evolutionary methods. © 2015 Old City Publishing, Inc.
Number of references: 42
Main heading: Chromosomes
Controlled terms: Evolutionary algorithms - Timing circuits - Constraint handling - Benchmarking - Stochastic systems

Uncontrolled terms: Constraint violation - Equality constraints - Heuristic information - High-quality solutions - Minimization problems - Reed-Muller expansions - Reversible circuits - Variable length chromosome
Classification code: 461.2 Biological Materials and Tissue Engineering - 713.4 Pulse Circuits - 721.1 Computer Theory, Includes Formal Logic, Automata Theory, Switching Theory, Programming Theory - 731.1 Control Systems - 961 Systems Science
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

45. Determination of movable fluid percentage and movable fluid porosity in ultra-low permeability sandstone using nuclear magnetic resonance (NMR) technique

Accession number: 20152700987786
Authors: Gao, Hui (1); Li, Huazhou (2)
Author affiliation: (1) School of Petroleum Engineering, Xi'an Shiyou University, Xi'an; 710065, China; (2) School of Mining and Petroleum Engineering, Faculty of Engineering, University of Alberta, Edmonton; T6G 2W2, Canada
Corresponding author: Li, Huazhou(huazhou@ualberta.ca)
Source title: Journal of Petroleum Science and Engineering
Abbreviated source title: J. Pet. Sci. Eng.
Volume: 133
Issue date: September 01, 2015
Publication year: 2015
Pages: 258-267
Language: English
ISSN: 09204105
Document type: Journal article (JA)
Publisher: Elsevier B.V., Netherlands
Abstract: In ultra-low permeability reservoirs, the movable fluid parameters (including movable fluid percentage and movable fluid porosity) are very important measures in that they can provide realistic assessment of the amount of fluid that can flow in the porous media. In this study, the movable fluid percentage and movable fluid porosity of 264 core samples obtained from the Yanchang group of Ordos basin (China) are determined using the nuclear magnetic resonance (NMR) technique. The test results show that the T2 distributions present five typical patterns: bimodal distribution with higher left peak and lower right peak (occupying 26.52%), bimodal distribution with lower left peak but higher right peak (occupying 37.50%), bimodal distribution with similar amplitudes of the two peaks (occupying 35.23%), unimodel distribution (occupying 0.38%), and triple-peak distribution (occupying 0.38%). The pore throat radius exists mainly over the ranges of 1-10μm and 10-100μm, while the T2 cutoff value is found to mainly distribute between 5.34 and 20.00ms. The average movable fluid percentage and average movable fluid porosity of the 264 core samples are 48.35% and 5.43%, respectively. The movable fluid percentage shows almost no correlation with porosity; it varies dramatically when the permeability is low and tends to converge to a higher value with an increase in permeability. The movable fluid porosity exhibits a relatively good correlation with core porosity as well as core permeability. There is obvious difference between the movable fluid parameters and physical property in different reservoirs because of the difference in wettability, microcrack and pore structure. The movable fluid parameters are comprehensive reflection of micro-characteristics of ultra-low permeability reservoir. © 2015.
Number of references: 33
Main heading: Nuclear magnetic resonance
Controlled terms: Low permeability reservoirs - Porous materials - Core samples - Petroleum reservoir engineering - Mechanical permeability - Porosity
Uncontrolled terms: Bimodal distribution - Micro characteristics - Movable fluid - Movable fluid porosity - Nuclear magnetic resonance techniques - Pore throat radius - Ultra low permeability - Ultra-low permeability reservoirs
Classification code: 512.1 Petroleum Deposits - 512.1.2 Petroleum Deposits : Development Operations - 931.2 Physical Properties of Gases, Liquids and Solids - 951 Materials Science
Numerical data indexing: Percentage 2.65e+01%, Percentage 3.52e+01%, Percentage 3.75e+01%, Percentage 3.80e-01%, Percentage 4.84e+01%, Percentage 5.43e+00%, Size 1.00e-05m to 1.00e-04m, Size 1.00e-06m to 1.00e-05m, Time 5.34e-03s to 2.00e-02s
DOI: 10.1016/j.petrol.2015.06.017
Funding Details: Number: 2012JQ5003, Acronym: -, Sponsor: -; Number: 212172, Acronym: -, Sponsor: -; Number: 41102081, Acronym: NSFC, Sponsor: National Natural Science Foundation of China;
Funding text: This research was financially supported by the National Natural Science Foundation Of China (No. 41102081), Educational Ministry's Key Projects of China (No. 212172) and Natural Science Fundamental Research

Grant of Shaanxi (No. 2012JQ5003). The authors greatly acknowledge Yuan Cheng who has assisted in conducting the NMR experiments. The authors also acknowledge a start-up fund from the Faculty of Engineering at the University of Alberta to H. Li.
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

46. Composition analysis and thermal decomposition behavior of polysulfoethers mixed sulfiding agent

Accession number: 20152801027158
Authors: Xu, Haisheng (1, 2); Xu, Shiye (1); Zhou, Anning (2)
Author affiliation: (1) College of Chemistry and Chemical Engineering, Xi'an Shiyou University, Xi'an; 710065, China; (2) School of Chemistry and Chemical Engineering, Xi'an University of Science and Technology, Xi'an; 710054, China
Corresponding author: Xu, Haisheng(xhs74@xsyu.edu.cn)
Source title: Shiyou Xuebao, Shiyou Jiagong/Acta Petrolei Sinica (Petroleum Processing Section)
Abbreviated source title: Shiyou Xuebao Shiyou Jiagong
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Issue: 3
Issue date: June 25, 2015
Publication year: 2015
Pages: 740-744
Language: Chinese
ISSN: 10018719
CODEN: SXSHEY
Document type: Journal article (JA)
Publisher: Science Press
Abstract: The mixed sulfiding agent of polysulfoethers was synthesized by using bromoethane, elemental sulfur and sodium sulfide as raw materials in the presence of phase transfer catalyst. The composition of the mixture of polysulfoethers was analyzed, and its thermal decomposition behavior and mechanism were studied. The results showed that the synthesized mixture contained mainly the target compounds of diethyl disulfide, diethyl trisulfide and diethyl tetrasulfide, and their mass fraction accounted for 97.8%, with the single yield of 85.3% and the product sulfur mass fraction of 63.86%. The synthesized mixed sulfiding agent had a wide range of decomposition temperature (50-235) and larger endothermic effect, which can be applied directly to the presulfurization of hydrogenation catalyst without separation, so a broad application prospects may be expected. ©, 2015, Science Press. All right reserved.
Number of references: 20
Main heading: Thermolysis
Controlled terms: Sodium sulfate - Mixtures - Sulfur compounds - Catalysts - Sodium sulfide
Uncontrolled terms: Composition analysis - Decomposition temperature - Endothermic effects - Hydrogenation catalyst - Phase transfer catalysts - Polysulfoether - Sulfiding - Thermal decomposition behavior
Classification code: 801.4 Physical Chemistry - 802.2 Chemical Reactions - 803 Chemical Agents and Basic Industrial Chemicals - 804 Chemical Products Generally - 804.2 Inorganic Compounds
Numerical data indexing: Percentage 6.39e+01%, Percentage 8.53e+01%, Percentage 9.78e+01%
DOI: 10.3969/j.issn.1001-8719.2015.03.019
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

47. Guanidine-phosphate non-covalent interaction in LAP crystal growth solution evidenced from spectroscopy studies

Accession number: 20151500738737
Authors: Wang, L. (1, 2); Zhang, G.H. (2); Wang, X.Q. (2); Zhu, L.Y. (2); Xu, D. (2)
Author affiliation: (1) School of Materials Science and Engineering, Xi'an Shiyou University, Xi'an; 710065, China; (2) State Key Laboratory of Crystal Materials, Institute of Crystal Materials, Shandong University, Jinan; 250100, China
Corresponding author: Zhang, G.H.(ghzhang@sdu.edu.cn)
Source title: Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy
Abbreviated source title: Spectrochim. Acta Part A Mol. Biomol. Spectrosc.

Volume: 148
Issue date: September 5, 2015
Publication year: 2015
Pages: 12-17
Article number: 13539
Language: English
ISSN: 13861425
CODEN: SAMCAS
Document type: Journal article (JA)
Publisher: Elsevier B.V., Netherlands
Abstract: Abstract The similar l-arginine molecule aggregation has been found in l-arginine (LA) and l-arginine phosphate monohydrate (LAP) aqueous solutions. The special fluorescence emission at 380 nm of LA aggregates in LAP solution has been found, compared with the emission of LA solution at 415 nm, which has an obvious blue shift. By comparing the fluorescence spectra of several solutions for l-arginine and l-lysine salts, the interaction between phosphate and guanidine in LAP solution was considered to be the cause of its special fluorescence emission. Meanwhile, when LAP molecule formed in solution, the fluorescence emission wavelength and the UV absorption intensity at 296 nm of l-arginine solutions have mutated. Therefore, the group interaction involved by guanidine has changed the fluorescence properties of l-arginine aggregates in LAP solution, indicating that the specific interaction between phosphate and guanidine exists in LAP molecule.
Number of references: 31
Main heading: Solutions
Controlled terms: Molecules - Fluorescence - Positive ions - Arginine - Aggregates
Uncontrolled terms: Fluorescence emission - Fluorescence properties - Fluorescence spectra - L-arginine phosphate - Molecular aggregate - Non-covalent interaction - Specific interaction - UV-visible absorption
Classification code: 406 Highway Engineering - 412.2 Concrete Reinforcements - 741.1 Light/Optics - 804.1 Organic Compounds - 931.3 Atomic and Molecular Physics
Numerical data indexing: Size 2.96e-07m, Size 3.80e-07m, Size 4.15e-07m
DOI: 10.1016/j.saa.2015.03.124
Funding Details: Number: BS2011CL025, Acronym: -, Sponsor: -; Number: -, Acronym: SEM, Sponsor: Society for Experimental Mechanics; Number: 50872067, Acronym: NSFC, Sponsor: National Natural Science Foundation of China; Number: -, Acronym: SRF, Sponsor: Smoking Research Foundation;
Funding text: This work was supported by funding from the National Natural Science Foundation of China (No. 50872067), the SRF for ROCS, SEM and the Youth Scientist Fund of Shandong Province (BS2011CL025).
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

48. The difference between specularity coefficient of 1 and no-slip solid phase wall boundary conditions in CFD simulation of gas-solid fluidized beds

Accession number: 20153901320120
Authors: Zhong, Hanbin (1); Lan, Xingying (2); Gao, Jinsen (2); Zheng, Yajun (1); Zhang, Zhiping (1)
Author affiliation: (1) School of Chemistry and Chemical Engineering, Xi'an Shiyou University, Xi'an, Shaanxi; 710065, China; (2) State key laboratory of heavy oil processing, China University of Petroleum, Beijing; 102249, China
Corresponding author: Zhang, Zhiping(zhangzp0304@gmail.com)
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Volume: 286
Issue date: December 01, 2015
Publication year: 2015
Pages: 740-743
Language: English
ISSN: 00325910
E-ISSN: 1873328X
CODEN: POTEBX
Document type: Journal article (JA)
Publisher: Elsevier B.V., Netherlands
Abstract: When modeling gas-solid fluidized beds with Eulerian-Eulerian approach, the predicted hydrodynamics is significantly affected by the solid phase wall boundary condition. The specularity coefficient in Johnson and Jackson

wall boundary condition ranges from 0 for perfect specular collisions to 1 for perfectly diffuse collisions. Normally, it is reported that no-slip wall boundary condition is obtained for =. 1. However, in most reports without applying Johnson and Jackson wall boundary condition, the no-slip wall boundary condition was also claimed to be used for the solid phase analogous to the gas phase. Therefore, the dynamic segregation process of binary particles was simulated to investigate whether =. 1 is equivalent with no-slip wall boundary condition. The results reveal the significant differences between =. 1 and no-slip wall boundary condition, which indicate that the no-slip wall boundary condition may not be suitable for describing =. 1 wall boundary condition. © 2015 Elsevier B.V.
Number of references: 25
Main heading: Fluidization
Controlled terms: Fluidized beds - Boundary conditions - Computational fluid dynamics
Uncontrolled terms: CFD simulations - Eulerian-Eulerian - Eulerian-Eulerian approach - Gas-solid fluidized bed - No slips - Segregation process - Specularities - Wall boundary condition
Classification code: 723.5 Computer Applications - 802.3 Chemical Operations - 931.1 Mechanics
DOI: 10.1016/j.powtec.2015.08.055
Funding Details: Number: 2014BS18, Acronym: -, Sponsor: -; Number: SKLHOP201506, Acronym: -, Sponsor: State Key Laboratory of Heavy Oil Processing;
Funding text: The authors acknowledge the support by the Science Foundation of Xi'an Shiyou University (No. 2014BS18) and State Key Laboratory of Heavy Oil Processing (No. SKLHOP201506). The authors also thank the anonymous referees for their comments on this manuscript.
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

49. Thermal-hydraulic calculation and analysis on water wall system of 600 MW supercritical CFB boiler

Accession number: 20151200668329
Authors: Pan, Jie (1); Wu, Gang (1); Yang, Dong (2)
Author affiliation: (1) College of Petroleum Engineering, Xi'An Shiyou University, Xi'an, Shaanxi Province; 710065, China; (2) State Key Laboratory of Multiphase Flow in Power Engineering, Xi'An Jiaotong University, Xi'an; 710049, China
Corresponding author: Pan, Jie(jackpan@xsyu.edu.cn)
Source title: Applied Thermal Engineering
Abbreviated source title: Appl Therm Eng
Volume: 82
Issue date: May 5, 2015
Publication year: 2015
Pages: 225-236
Language: English
ISSN: 13594311
CODEN: ATENFT
Document type: Journal article (JA)
Publisher: Elsevier Ltd
Abstract: Thermal-hydraulic performance of water wall system is a key operating target for supercritical once-through boiler. In this paper, the water wall system of a 600 MW supercritical circulating fluidized bed (CFB) boiler with complex furnace structure is treated as a simplified series-parallel flow network, which consists of parallel flow loops, pressure nodes and connecting tubes. Based on the mass, momentum and energy conservation of these components, a complex but accurate mathematical model for predicting the thermal-hydraulic characteristics of boiler heating surface is developed, which introduces numerous empirical correlations for heat transfer and flow resistance. The model was iteratively solved using the quasi-Newton method, and the thermal-hydraulic parameters of the water wall system at different operating loads, including mass flux distribution, total pressure drops, outlet vapor temperature and metal temperature profiles are obtained. The results exhibit good flow distribution characteristics and low mass flux deviations in the water wall system, and the total pressure drop is far lower than that in conventional supercritical once-through boilers at different operating loads. It is also found that the outlet vapor temperatures and the temperature differences in the water wall system are all in a permissible range and the metal temperatures meet the boiler operating requirement completely. It implies the design of water wall system in supercritical CFB boiler is successful. © 2015 Elsevier Ltd. All rights reserved.
Number of references: 17
Main heading: Pressure drop

Controlled terms: Drops - Fluidized bed process - Fluidized beds - Complex networks - Heat transfer - Heat resistance - Parallel flow - Newton-Raphson method
Uncontrolled terms: Flux distributions - Metal temperature - Supercritical cfb - Thermal hydraulics - Vapor temperature
Classification code: 631.1 Fluid Flow, General - 641.2 Heat Transfer - 722 Computer Systems and Equipment - 921.6 Numerical Methods
Numerical data indexing: Power 6.00e+08W
DOI: 10.1016/j.applthermaleng.2015.03.004
Funding Details: Number: 2006BAA03B02-03, Acronym: -, Sponsor: -; Number: 51304160, Acronym: NSFC, Sponsor: National Natural Science Foundation of China;
Funding text: This study was supported by the National Natural Science Foundation of China (Grant No. 51304160) and National Key Technology R&D Program of China during the 11th Five-Year Plan Period (Grant No. 2006BAA03B02-03).
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

50. Computing the plane electromagnetic wave transient propagation in lossy medium based on COMSOL

Accession number: 20161602266171
Authors: Gao, Li (1); An, Mingqi (2); Zhao, Quansheng (3)
Author affiliation: (1) College of Electronic Engineering, Xi'An Shiyou University, Xi'an; 710065, China; (2) BGP International, Yinchuan; 750005, China; (3) International Projects of Great Wall Wireline Logging Company, CNPC, Beijing; 100101, China
Source title: Proceedings of 2015 International Conference on Estimation, Detection and Information Fusion, ICEDIF 2015
Abbreviated source title: Proc. Int. Conf. Estim., Detect. Inf. Fusion, ICEDIF
Part number: 1of1
Issue title: Proceedings of 2015 International Conference on Estimation, Detection and Information Fusion, ICEDIF 2015
Issue date: September 28, 2015
Publication year: 2015
Pages: 367-371
Article number: 7280225
Language: English
ISBN-13: 9781479964178
Document type: Conference article (CA)
Conference name: International Conference on Estimation, Detection and Information Fusion, ICEDIF 2015
Conference date: January 10, 2015 - January 11, 2015
Conference location: Harbin, China
Conference code: 118253
Publisher: Institute of Electrical and Electronics Engineers Inc., United States
Abstract: It was very important for geophysical exploration to study the electromagnetic wave transient propagation characteristic in the lossy medium. A method for computing the electromagnetic wave transient propagation characteristic in layered medium based on the finite element simulation software COMSOL multi-physics was studied and the absorbing boundary condition and numerical stability condition were analyzed. The two layer medium model was set up and the numerical modeling of the plane wave propagating characteristic was conducted. It was found that the temporal fluctuation characteristic analysis of electromagnetic wave propagation in multilayer medium might provides an indication of the boundary position. © 2015 IEEE.
Number of references: 10
Main heading: Electromagnetic waves
Controlled terms: Circular waveguides - Numerical methods - Computer software - Electromagnetic wave propagation - Finite element method
Uncontrolled terms: Absorbing boundary condition - Finite element simulations - Geophysical exploration - Lossy medium - Multiphysics simulations - Plane electromagnetic waves - Propagating characteristics - Transient propagation
Classification code: 711 Electromagnetic Waves - 714.3 Waveguides - 723 Computer Software, Data Handling and Applications - 921.6 Numerical Methods

DOI: 10.1109/ICEDIF.2015.7280225
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

51. Numerical simulation of pitch-water slurry gasification in both downdraft single-nozzle and opposed multi-nozzle entrained-flow gasifiers: A comparative study

Accession number: 20150500468645
Authors: Zhong, Hanbin (1, 2); Lan, Xingying (1); Gao, Jinsen (1)
Author affiliation: (1) State Key Laboratory of Heavy Oil Processing, China University of Petroleum, Beijing; 102249, China; (2) College of Chemistry and Chemical Engineering, Xi'an Shiyou University, Xi'an, Shaanxi; 710065, China
Corresponding author: Lan, Xingying(lanxy@cup.edu.cn)
Source title: Journal of Industrial and Engineering Chemistry
Abbreviated source title: J. Ind. Eng. Chem.
Volume: 27
Issue date: July 25, 2015
Publication year: 2015
Pages: 182-191
Language: English
ISSN: 1226086X
E-ISSN: 22345957
Document type: Journal article (JA)
Publisher: Korean Society of Industrial Engineering Chemistry
Abstract: Analogous to the coal-water slurry (CWS) gasification technology, the pitch-water slurry (PWS) gasification technology was proposed to gasify pitch with high softening point from the deasphalting unit. The PWS gasification behavior in both downdraft single-nozzle (DSB) and opposed multi-nozzle (OMB) entrained-flow gasifiers were predicted by a three-dimensional numerical model based on Eulerian-Lagrangian method. The flow, temperature, and species mole fraction distributions indicated that PWS was a good feedstock for gasification. The contributions of different competing reactions to the oxygen and fixed carbon consumption were quantitatively analyzed to compare the gasification performances between DSB and OMB gasifiers. © 2015 The Korean Society of Industrial and Engineering Chemistry.
Number of references: 26
Main heading: Gasification
Controlled terms: Lagrange multipliers - Numerical methods - Numerical models - Nozzles
Uncontrolled terms: Comparative studies - Entrained flow gasifiers - Eulerian-lagrangian - Eulerian-Lagrangian method - Gasification technologies - Gasifiers - Three-dimensional numerical modeling - Water slurry
Classification code: 802.3 Chemical Operations - 921 Mathematics - 921.6 Numerical Methods
DOI: 10.1016/j.jiec.2014.12.033
Funding Details: Number: -, Acronym: -, Sponsor: Science Foundation of China University of Petroleum, Beijing; Number: 2012CB215003, Acronym: -, Sponsor: National Basic Research Program of China (973 Program);
Funding text: The authors acknowledge the support by the National Basic Research Program (Grant no. 2010CB226906 , and 2012CB215003) and the Science Foundation of China University of Petroleum, Beijing (no. KYJJ2012-03-01). The authors also thank the anonymous referees for their comments on this manuscript.
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

52. Enhanced blue emission from Si/Al2O3/Zn/ZnO multilayer films

Accession number: 20144300124643
Authors: Chen, Haixia (1); Ding, Jijun (2); Guo, Wenge (1)
Author affiliation: (1) School of Science, Xi'An Shiyou University, Xi'an, Shaanxi; 710065, China; (2) Electronic Materials Research Laboratory, School of Electronic and Information Engineering, Xi'An Jiaotong University, Xi'an, Shaanxi; 710049, China
Corresponding author: Chen, Haixia
Source title: Journal of Alloys and Compounds
Abbreviated source title: J Alloys Compd
Volume: 620

Issue date: 25 January 2015
Publication year: 2015
Pages: 294-298
Language: English
ISSN: 09258388
CODEN: JALCEU
Document type: Journal article (JA)
Publisher: Elsevier Ltd
Abstract: Si/Al2O3/Zn/ZnO multilayer films are prepared by magnetron sputtering. The conjunct effect of Al2O3 insulator interlayer and Zn buffer layer on the photoluminescence (PL) properties of ZnO films are investigated in detail. PL spectrum of Si/Zn/ZnO multilayer film (0 min) shows an evident violet peak and weak blue-green emission. As the deposition time of Al2O3 insulator interlayer is increased to 5 min, the violet peak disappears and there occurs both new peaks at 421 and 433 nm, respectively. Interestingly, as the deposition time of Al2O3 insulator interlayer is further increased to 15 min, a strong violet peak at 413 nm is observed. Also, all the peak intensity attain maximum. A model considering Ohmic contact formed between Zn and ZnO and Al2O3 insulator interlayer effect is proposed to interpret the change of the PL spectra. © 2014 Published by Elsevier B.V. All rights reserved.
Number of references: 27
Main heading: Zinc oxide
Controlled terms: Aluminum oxide - Buffer layers - Deposition - II-VI semiconductors - Ohmic contacts - Multilayer films - Multilayers - Zinc - Alumina
Uncontrolled terms: Blue emission - Blue-green emissions - Deposition time - Insulator interlayer - Interlayer effects - Peak intensity - Photoluminescence properties - Zn buffer layer
Classification code: 546.3 Zinc and Alloys - 712.1 Semiconducting Materials - 802.3 Chemical Operations - 804.2 Inorganic Compounds - 933.1 Crystalline Solids
Numerical data indexing: Size 4.13e-07m, Size 4.21e-07m, Size 4.33e-07m, Time 0.00e+00s, Time 3.00e+02s, Time 9.00e+02s
DOI: 10.1016/j.jallcom.2014.09.046
Funding Details: Number: YS29031223, Acronym: -, Sponsor: -; Number: 12JK0426, Acronym: -, Sponsor: -;
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Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

53. Spectral clustering algorithm based on kernel fuzzy similarity measure

Accession number: 20153601245900
Authors: Yang, Yifang (1, 3); Wang, Yuping (2)
Author affiliation: (1) School of Mathematics and Statistics, Xidian University, Xi'an; 710071, China; (2) School of Computer Science and Technology, Xidian University, Xi'an; 710071, China; (3) College of Science, Xi'an Shiyou University, Xi'an; 710065, China
Source title: Yi Qi Yi Biao Xue Bao/Chinese Journal of Scientific Instrument
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Volume: 36
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Publication year: 2015
Pages: 1562-1569
Language: Chinese
ISSN: 02543087
CODEN: YYXUDY
Document type: Journal article (JA)
Publisher: Science Press
Abstract: Similarity measure is critical to the performance of spectral clustering. The most commonly used similarity measure for spectral clustering is the similarity measure based on Gaussian kernel function. However, spectral clustering is very sensitive to the scaling parameter in this Gaussian kernel similarity measure and the determination of the appropriate scaling parameter is difficult. In addition, the Gaussian kernel similarity measure based on Euclidean distance can not fully express the distribution characteristic of complex distribution dataset. To solve this problem, a novel similarity measure called kernel fuzzy similarity measure is first proposed using the membership distribution in

partition matrix obtained with kernel fuzzy c-means clustering algorithm, then this novel similarity measure is integrated into spectral clustering to get a new clustering algorithm-kernel fuzzy similarity measure based spectral clustering (KFSC), which is used for image segmentation. The proposed KFSC algorithm not only overcomes the sensitivity of spectral clustering to scaling parameter, but also solves the difficulty of selecting an appropriate parameter; and good clustering result is obtained. The segmentation experiments on three benchmark datasets, two synthetic texture images and two natural images were conducted, and the results demonstrate the effectiveness and robustness of the proposed algorithm.
Number of references: 19
Main heading: Fuzzy clustering
Controlled terms: Clustering algorithms - Fuzzy logic - Image segmentation - Gaussian distribution
Uncontrolled terms: Distribution characteristics - Fuzzy c-means clustering algorithms - Fuzzy similarity measure - Gaussian kernel functions - Nearest neighbor method - New clustering algorithms - Spectral clustering - Spectral clustering algorithms
Classification code: 721.1 Computer Theory, Includes Formal Logic, Automata Theory, Switching Theory, Programming Theory - 723 Computer Software, Data Handling and Applications - 903.1 Information Sources and Analysis - 922.1 Probability Theory - 922.2 Mathematical Statistics
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

54. Progress of microbial enhanced oil recovery in China

Accession number: 20161202131922
Authors: Guo, Hu (1); Li, Yiqiang (1); Yiran, Zhao (2); Wang, Fuyong (1); Wang, Yansheng (1); Yu, Zhaoyan (1); Haicheng, She (3); Yuanyuan, Gu (1); Chuyi, Jin (1); Xian, Gao (1)
Author affiliation: (1) China University of Petroleum, Beijing, China; (2) Xi'An Petroleum University, China; (3) Yulin University, China
Source title: Society of Petroleum Engineers - SPE Asia Pacific Enhanced Oil Recovery Conference, EORC 2015
Abbreviated source title: Soc. Pet. Eng. - SPE Asia Pac. Enhanc. Oil Recovery Conf., EORC
Part number: 1of1
Issue title: Society of Petroleum Engineers - SPE Asia Pacific Enhanced Oil Recovery Conference, EORC 2015
Issue date: 2015
Publication year: 2015
Report number: SPE-174697-MS
Pages: 1422-1437
Language: English
ISBN-13: 9781510813434
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Conference name: SPE Asia Pacific Enhanced Oil Recovery Conference, EORC 2015
Conference date: August 11, 2015 - August 13, 2015
Conference location: Kuala Lumpur, Malaysia
Conference code: 118471
Publisher: Society of Petroleum Engineers
Abstract: Compared with other EOR technique like gas flooding, chemical flooding, and thermal production in heavy oil, the prominent advantages MEOR has environment-friendliness and lowest cost. MEOR has various applications not only in sandstone but also carbonate reservoirs, light oil reservoirs as well as heavy oil reservoirs. This paper mainly reviewed progress in laboratory studies and MEOR field tests including six big successful field tests in China. Present focus on MEOR has been changed from qualitative analysis to quantitative characterization, and high-tech like 16S rDNA and advanced method has being tried to investigate its mechanism on molecular level. The mechanism of microbial effects on making oil emulsification and wettability alternation was the main interest of recent study. Application of high resolution mass spectrum (HRMS) on MEOR mechanism has revealed the change of polar compound structures before and after oil degradation by the microbial on molecular level. MEOR could be divided into indigenous microorganism and exogenous microorganism flooding. The key of exogenous microorganism flooding, was to develop effective production strains, and difficulty lies in the compatibility of microorganism, performance degradation and high cost. Indigenous microorganism flooding, has good adaptation but no follow up process on production strains development, thus it represents the main direction of MEOR. China has some of the most complex and diversified reservoirs and was notable for the scale of MEOR field tests since there has been six big MEOR field tests since 1998 after many precious small-cale tests. All field tests have shown positive results in incremental oil and water cut reduction. The combination of indigenous microorganism and exogenous microorganism flooding was adopted because of the cost and difficulty of exogenous microorganism flooding. MEOR screening criteria for

reservoirs has been improved. The parameters include temperature, salinity, oil viscosity, permeability, porosity, wax content, water cut, and microorganism concentration in which production fluid, temperature, and salinity were the most important three parameters. MEOR was suitable in reservoirs of which temperature lower than 80°C, salinity less than 100,000 ppm, and permeability above 50 mD. MEOR experience and study in reservoirs of 120°C, salinity more than 350,000ppm and permeability of 10 mD has expanded the reservoirs range suitable to carry out MEOR. Copyright 2015, Society of Petroleum Engineers.
Number of references: 47
Main heading: Oil well flooding
Controlled terms: Mass spectrometry - Crude oil - Emulsification - Floods - Petroleum reservoirs - Reservoirs (water) - Testing - Enhanced recovery - Heavy oil production - Microorganisms - Petroleum reservoir evaluation - Costs - Biodegradation
Uncontrolled terms: Environment friendliness - Heavy oil reservoirs - High-resolution mass spectrum - Light oil reservoirs - Microbial enhanced oil recoveries - Performance degradation - Qualitative analysis - Quantitative characterization
Classification code: 441.2 Reservoirs - 461.8 Biotechnology - 461.9 Biology - 511.1 Oil Field Production Operations - 512.1 Petroleum Deposits - 512.1.1 Oil Fields - 512.1.2 Petroleum Deposits : Development Operations - 801 Chemistry - 801.2 Biochemistry - 802.3 Chemical Operations - 911 Cost and Value Engineering; Industrial Economics
Numerical data indexing: Temperature 3.53e+02K, Temperature 3.93e+02K
DOI: 10.2118/174697-ms
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

55. Humidity sensing of microfiber Bragg grating

Accession number: 20151100635499
Authors: Shao, Min (1); Qiao, Xueguang (2); Jia, Zhenan (1); Fu, Haiwei (3); Liu, Yinggang (1); Zhao, Xue (1); Li, Lipin (1)
Author affiliation: (1) Shaanxi Key Laboratory of Optical Logging, School of Science, Xi'An Shiyou University, Xi'an; 710065, China; (2) School of Science Northwestern Polytechnical University, Xi'an; 710069, China; (3) Physics Department, Northwest University, Xi'an; 710069, China
Corresponding author: Shao, Min
Source title: Proceedings of SPIE - The International Society for Optical Engineering
Abbreviated source title: Proc SPIE Int Soc Opt Eng
Volume: 9449
Volume title: International Conference on Photonics and Optical Engineering, icPOE 2014
Part number: 1of1
Issue date: 2015
Publication year: 2015
Article number: 944916
Language: English
ISSN: 0277786X
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CODEN: PSISDG
ISBN-13: 9781628415650
Document type: Conference article (CA)
Conference name: International Conference on Photonics and Optical Engineering, icPOE 2014
Conference date: October 13, 2014 - October 15, 2014
Conference location: Xi'an, China
Conference code: 111356
Sponsor: Optics and Photonics Society of Singapore; Shaanxi Optical Society; Shaanxi Provincial Physical Society
Publisher: SPIE
Abstract: A humidity sensor based on microfiber Bragg grating is proposed and demonstrated. The microfiber Bragg grating is obtained through chemical etching commercial fiber Bragg grating. The experimental results show that the central wavelength of the microfiber Bragg grating has red shift with humidity increasing, while the power decreases. The relative humidity sensitivity of the microfiber Bragg grating with diameter of 8.9um is 3pm/%RH in the range of 55%-80%RH. Furthermore, the sensor has a linear response to humidity with linear fitting of 0.991. The sensor possesses advantages of easy fabrication and low cost.. © 2015 SPIE.
Number of references: 15
Main heading: Humidity sensors

Controlled terms: Fiber Bragg gratings
Uncontrolled terms: Central wavelength - Chemical etching - Easy fabrication - Humidity sensing - Linear fitting - Linear response - Micro-fiber - Relative humidity sensitivities
Classification code: 443.2 Meteorological Instrumentation
DOI: 10.1117/12.2075376
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

56. Characteristics of source rocks and its controls on the formation and distribution of gas from Upper Paleozoic in Southwest Ordos Basin

Accession number: 20153301178123
Authors: Hu, Wei-Qiang (1); Zhao, Jing-Zhou (1, 2); Li, Jun (1, 2); Li, Lei (3); Zheng, Jie (3); Jing, Xiang-Hui (3)
Author affiliation: (1) School of Earth Sciences and Engineering Xi'an Shiyou University, Xi'an, China; (2) Shaanxi Key Lab of Petroleum Accumulation Geology, Xi'an, China; (3) Research Institute of Exploration and Development, Changqing Oilfield Company, PetroChina, Xi'an, China
Corresponding author: Zhao, Jing-Zhou
Source title: Natural Gas Geoscience
Abbreviated source title: Nat. Gas Geosci.
Volume: 26
Issue: 6
Issue date: June 10, 2015
Publication year: 2015
Pages: 1068-1075
Language: Chinese
ISSN: 16721926
Document type: Journal article (JA)
Publisher: Science Press
Abstract: By using abundance, type, maturity and gas generation intensity of organic matter, the comprehensive analysis of Upper Paleozoic source rocks in southwest Ordos Basin has been made to determine the plane distribution characteristics of main gas reservoirs, and the controlling effects of gas source rock on the formation are analyzed, which has been compared with that in the Sulige area. The Upper Paleozoic source rocks are composed of coal and dark mudstone of Shanxi Formation, Taiyuan Formation, of which coal seams are main source rocks. The average thickness of coal seams is 4.7m in the study area, while 14m in Sulige. Source rocks are abundant in organic matters. That is, the mean residual TOC in coal seam of the second member of Shanxi Formation and Taiyuan Formation are 54.94% and 66.96%, respectively and in mudstone are 2.88% and 1.75%, respectively; The carbon isotope of kerogen varies from -24.56‰ to -22.05‰, indicating that the kerogen belongs to type ; Vitrinite reflectance of organic matter is 1.6%-3.2%, with an average of 2.3%, which is at high to over-mature stage. Gas generation intensity is mainly between (8-20)×108m3/km2, while between (11-29)×108m3/km2 in Sulige region. Compared with the condition of gas source rocks of Sulige region, condition in the study area is slightly bad. Condition of source rocks controls the formation and distribution of gas reservoir in the study area. Horizontally, gas-producing wells are mainly distributed in coal seams with thickness more than 4m and gas generation intensity greater than 10×108m3/km2, showing a trend that the better the source rocks, the more the hydrocarbon content. Vertically, it has a good positive correlation among the vertical migration distance of gas migration, the thickness of coal seam and gas generation intensity. That is, the vertical migration distance of gas becomes farther along with greater thickness of coal seam and higher gas generation intensity. ©, 2015, Science Press. All right reserved.
Number of references: 21
Main heading: Kerogen
Controlled terms: Gas generators - Hydrocarbons - Geochronology - Coal - Oil shale - Biogeochemistry - Metamorphic rocks - Biological materials - Coal deposits - Gases
Uncontrolled terms: Control actions - Gas source rocks - Hydrocarbon source rocks - Migration - Upper Paleozoic
Classification code: 461.2 Biological Materials and Tissue Engineering - 481.1 Geology - 481.2 Geochemistry - 481.3 Geophysics - 503 Mines and Mining, Coal - 512.1 Petroleum Deposits - 522 Gas Fuels - 524 Solid Fuels - 801.2 Biochemistry - 804.1 Organic Compounds
Numerical data indexing: Percentage 1.60e+00% to 3.20e+00%, Percentage 1.75e+00%, Percentage 2.30e+00%, Percentage 2.88e+00%, Percentage 5.49e+01%, Percentage 6.70e+01%, Size 1.40e+01m, Size 4.00e+00m, Size 4.70e+00m

DOI: 10.11764/j.issn.1672-1926.2015.06.1068
Database: Compendex
Data Provider: Engineering Village

57. 9.2 GHz microwave frequency transmission via 50 km optical fiber

Accession number: 20153201119608
Authors: Meng, Sen (1, 2); Guo, Wen-Ge (1); Zhao, Wen-Yu (2); Yan, Lu-Lu (2); Zhang, Xuan (1); Jiang, Hai-Feng (2); Zhang, Shou-Gang (2)
Author affiliation: (1) School of Science, Xi'an Shiyou University, Xi'an; 710065, China; (2) Key laboratory of Time and Frequency Standards, National Time Service Center (NTSC), Chinese Academy of Sciences, Xi'an; 710600, China
Corresponding author: Guo, Wen-Ge(wguo@xsyu.edu.cn)
Source title: Guangzi Xuebao/Acta Photonica Sinica
Abbreviated source title: Guangzi Xuebao
Volume: 44
Issue: 7
Issue date: July 1, 2015
Publication year: 2015
Article number: 0706003
Language: Chinese
ISSN: 10044213
CODEN: GUXUED
Document type: Journal article (JA)
Publisher: Chinese Optical Society
Abstract: Based on the method of phase conjugation stabilization, a real-time noise cancellation system was proposed. The system which is a modular structure, is composed of microwave reference signal generating, phase compensation and optical fiber transmission module. The experimental results of our ultra-stable 9.2 GHz frequency transfer via a 50 km fiber spool were shown. In 9 days laboratry measurement, the system exhibits frequency transfer stabilities (standard Allan deviation) of 4.2E-13@1s/4.3E-14@1day for freE-running and 5.8E-14@1s/1.9E-17@1day for noisE-compensated link. This system match the requirement of 100 km scale frequency transfer of ultra-stable microwave atomic clocks. ©, 2015, Chinese Optical Society. All right reserved.
Number of references: 21
Page count: 5
Main heading: Stabilization
Controlled terms: Light transmission - Optical fibers - Microwave frequencies - Microwave generation
Uncontrolled terms: Fiber links - Frequency transmissions - Modular structures - Noise cancellation system - Optical fiber transmission - Phase compensation - Phase conjugations - Ultra-stable microwaves
Classification code: 713.2 Oscillators - 741.1 Light/Optics - 741.1.2 Fiber Optics
Numerical data indexing: Age 2.47e-02yr, Frequency 9.20e+09Hz, Size 1.00e+05m, Size 5.00e+04m
DOI: 10.3788/gzxb20154407.0706003
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

58. Explosion-resistance behavior and damage assessment of a duplex hollow CFST column subjected to blast loading

Accession number: 20154801621671
Authors: Cui, Ying (1, 3); Zhao, Jun-Hai (2); Zhang, Chang-Guang (2); Sun, Shan-Shan (2); Chen, Bing (1)
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; (3) School of Aeronautics, Northwestern Polytechnical University, Xi'an; 710072, China
Source title: Zhendong yu Chongji/Journal of Vibration and Shock
Abbreviated source title: J Vib Shock
Volume: 34
Issue: 21
Issue date: November 15, 2015
Publication year: 2015
Pages: 188-193 and 216

Language: Chinese
ISSN: 10003835
Document type: Journal article (JA)
Publisher: Chinese Vibration Engineering Society
Abstract: Test analysis and numerical simulation method were integrated to evaluate dynamic response and damage of a duplex hollow CFST column subjected to blast loading. A pressure-impulse damage evaluation criterion for the duplex hollow CFST column was defined by analyzing the test data. The results showed that under the blast loading for the test condition of the converted distance of 0.14 m/kg1/3, the plastic bending deformation occurs on the surface facing the explosion of the duplex hollow CFST column; the peak pressure in the middle of the column is the highest, the peak pressure at the bottom of the column is higher than that at the top of the column, the latter is the lowest; with the analysis of the duration of the positive pressure, the damage of the middle of the column is the most serious; so, it is important to coordinate the ends' strength and the whole column's strength in order to enhance the explosion-resistance performance of the duplex hollow CFST column. Finally, a pressure-impulse damage criterion based on the deflection of the fixed-end duplex hollow CFST column was defined, and a mathematical formula to generate pressure-impulse diagram (P-I curve) was also established. ©, 2015, Chinese Vibration Engineering Society. All right reserved.
Number of references: 14
Main heading: Explosions
Controlled terms: Damage detection - Numerical methods - Numerical models
Uncontrolled terms: CFST columns - Damage assessments - Explosion mechanics - Explosion resistance performance - Mathematical formulas - Numerical simulation method - Pressure-impulse diagrams - Resistance behaviors
Classification code: 921 Mathematics - 921.6 Numerical Methods
DOI: 10.13465/j.cnki.jvs.2015.21.033
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

59. Shale gas dual porosity-dual permeability model with matrix shrinking

Accession number: 20161202133142
Authors: Cao, Cheng (1, 2); Li, Tian-Tai (1, 3); Zhang, Lei (2); Gao, Chao (2); Wang, Hui (2)
Author affiliation: (1) School of Petroleum Engineering, China University of Petroleum, Beijing, China; (2) Research Institute of Shanxi Yanchang Petroleum (Group) Co. Ltd., Xi'an, China; (3) College of Petroleum Engineering, Xi'an Shiyou University, Xi'an, China
Source title: Natural Gas Geoscience
Abbreviated source title: Nat. Gas Geosci.
Volume: 26
Issue: 12
Issue date: December 10, 2015
Publication year: 2015
Pages: 2381-2387
Language: Chinese
ISSN: 16721926
Document type: Journal article (JA)
Publisher: Science Press
Abstract: In order to investigate the effect of matrix shrinkage on the behavior of gas seepage, Gibbs surface free energy function was introduced to establish a dual porosity-dual permeability model considering matrix shrinkage, effective stress, slippage and free molecular flow effect. Implicit fracture pressure and explicit matrix pressure method was applied to discretize governing equations. We discuss the effect of matrix shrinkage, effective stress, slippage and free molecular flow on gas flow mechanism and production rate in the Upper Paleozoic Shanxi Formation in the Ordos Basin. The results showed that, the rebound of absolute permeability has relationship with Langmuir volume, shale density, temperature, Young modulus, rock compressibility, instead of Langmuir pressure. Matrix shrinkage reduces the ration of viscous flow to total flow rate and decreases the ration of slip flow and free molecular flow to total flow rate. Matrix shrinkage and stress sensitivity have a considerable influence on production rate in large diameter and the influence can be ignored when pore diameter is smaller than 2nm. Slippage and free molecular flow contribute largely to production rate in low pressure and small pore. There is no contribution to production rate when pore diameter is bigger than 50nm. © 2015, Science Press. All right reserved.
Number of references: 15
Main heading: Flow of gases
Controlled terms: Seepage - Shrinkage - Free energy - Porosity - Geochronology - Shale gas

Uncontrolled terms: Dual-porosity dual-permeability models - Effective stress - Free molecule flow - Gibbs surface - Matrix shrinkage - Slippage
Classification code: 481.1 Geology - 481.3 Geophysics - 512.2 Natural Gas Deposits - 522 Gas Fuels - 631.1.2 Gas Dynamics - 641.1 Thermodynamics - 931.2 Physical Properties of Gases, Liquids and Solids - 951 Materials Science
Numerical data indexing: Size 2.00e-09m, Size 5.00e-08m
DOI: 10.11764/j.issn.1672-1926.2015.12.2381
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

60. Residual phase noise and time jitters of single-chip digital frequency dividers

Accession number: 20231213756939
Authors: Yan, Lu-Lu (1); Meng, Sen (2); Zhao, Wen-Yu (1); Guo, Wen-Ge (2); Jiang, Hai-Feng (1); Zhang, Shou-Gang (1)
Author affiliation: (1) Key Laboratory of Time and Frequency Standards, National Time Service Center (NTSC), Chinese Academy of Sciences, Xi'an; 710600, China; (2) School of Science, Xi'an Shiyou University, Xi'an; 710065, China
Corresponding author: Jiang, Hai-Feng(haifeng.jiang@ntsc.ac.cn)
Source title: Journal of Electronic Science and Technology
Abbreviated source title: J. Electron. Sci. Technol.
Volume: 13
Issue: 3
Issue date: 2015
Publication year: 2015
Pages: 264-268
Language: English
ISSN: 1674862X
E-ISSN: 2666223X
Document type: Journal article (JA)
Publisher: Univ. of Electronic Science and Technology of China
Abstract: In this paper, we demonstrate the residual phase noise of a few microwave frequency dividers which usually limit the performance of frequency synthesizers. In order to compare these dividers under different operation frequencies, we calculate additional time jitters of these dividers by using the measured phase noise. The time jitters are various from ~0.1 fs to 43 fs in a bandwidth from 1 Hz to 100 Hz in dependent of models and operation frequencies. The HMC series frequency dividers exhibit outstanding performance for high operation frequencies, and the time jitters can be sub-fs. The time jitters of SP8401, MC10EP139, and MC100LVEL34 are comparable or even below that of HMC series for low operation frequencies.
Number of references: 12
Main heading: Phase noise
Controlled terms: Jitter
Uncontrolled terms: Digital frequency dividers - Frequency dividers - Microwaves frequency - Operation frequency - Performance - Phase-noise - Residual phase noise - Single-chip - Spectra analysis - Time jitters
Classification code: 701.2 Magnetism: Basic Concepts and Phenomena
Numerical data indexing: Frequency 1.00E00Hz to 1.00E+02Hz, Time 1.00E-16s to 4.30E-14s
DOI: 10.11989/JEST.1674-862X.4110516
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

61. Impact of Secondary and Tertiary Floods on Microscopic Residual Oil Distribution in Medium-to-High Permeability Cores with NMR Technique

Accession number: 20153401204021
Authors: Gao, Hui (1); Liu, Yueliang (2); Zhang, Zhang (3); Niu, Baolun (3); Li, Huazhou (2)
Author affiliation: (1) School of Petroleum Engineering, Xian Shiyou University, Xian; 710065, China; (2) School of Mining and Petroleum Engineering, Faculty of Engineering, University of Alberta, Edmonton; T6G 2W2, Canada; (3) Sinopec Production Engineering and Technology Institute, Sinopec Zhongyuan Oilfield Branch Company, Puyang; 457001, China

Corresponding author: Li, Huazhou(huazhou@ualberta.ca)
Source title: Energy and Fuels
Abbreviated source title: Energy Fuels
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Issue date: August 20, 2015
Publication year: 2015
Pages: 4721-4729
Language: English
ISSN: 08870624
E-ISSN: 15205029
CODEN: ENFUEM
Document type: Journal article (JA)
Publisher: American Chemical Society
Abstract: In order to explore the impact of various flood schemes and pore throat heterogeneity on oil recovery efficiency in porous media, core-flood experiments and nuclear magnetic resonance (NMR) tests are conducted to quantitatively determine the initial oil distribution and the residual oil distribution in medium-to-high-permeability cores subjected to these various flood schemes. Multiple experimental runs are conducted with four field core samples to cover the various flood schemes: the secondary water flood, CO2-foam flood, and water-alternating-CO2 flood (WAG). Experimental results show that, relatively speaking, at the initial oil saturation condition, the moderate pore throats contain the highest amount of oil. The water flood recovery degree is higher from larger pore throats (average recovery degree of 98.57%) than that from moderate pore throats (average recovery degree of 78.29%). The water flood efficiency in different cores is found to be dependent on the degree of heterogeneity in pore throat distribution. After water flood, the residual oil is mainly located in smaller pore throats. CO2-foam flood shows good performance in tapping the residual oil contained in smaller pore throats, while the WAG can recover more oil from larger pore throats. Furthermore, it is found that the combination of CO2-foam flood and WAG provides the highest recovery efficiency since it is effective in reducing the oil saturation in pore throats with varied sizes. Based on this investigation on the residual oil saturation in pore throats subjected to secondary and tertiary floods, it is possible to design an optimum flood scheme which suits the microscope pore throat characteristics for a given reservoir. © 2015 American Chemical Society.
Number of references: 27
Main heading: Floods
Controlled terms: Efficiency - Carbon dioxide - Nuclear magnetic resonance - Porous materials - Oil well flooding - Recovery - Reservoirs (water)
Uncontrolled terms: Core flood experiments - High permeability - Nuclear magnetic resonance(NMR) - Oil distributions - Oil recovery efficiency - Recovery efficiency - Residual oil distribution - Residual oil saturation
Classification code: 441.2 Reservoirs - 511.1 Oil Field Production Operations - 804.2 Inorganic Compounds - 913.1 Production Engineering - 951 Materials Science
Numerical data indexing: Percentage 7.83e+01%, Percentage 9.86e+01%
DOI: 10.1021/acs.energyfuels.5b00394
Funding Details: Number: 41102081, Acronym: NSFC, Sponsor: National Natural Science Foundation of China;
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

62. In-Fiber Quasi-Michelson Interferometer Based on Waist-Enlarged Fiber Taper for Refractive Index Sensing

Accession number: 20161202132147
Authors: Fu, Haiwei (1); Zhao, Na (1); Shao, Min (1); Yan, Xu (1); Li, Huidong (1); Liu, Qinpeng (1); Gao, Hong (1); Liu, Yinggang (1); Qiao, Xueguang (2)
Author affiliation: (1) Ministry of Education Key Laboratory on Photoelectric Oil-Gas Logging and Detecting, School of Science, Xi'an Shiyou University, Xi'an; 710065, China; (2) Department of Physics, Northwest University, Xi'an; 710069, China
Source title: IEEE Sensors Journal
Abbreviated source title: IEEE Sensors J.
Volume: 15
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Issue date: December 2015

Publication year: 2015
Pages: 6869-6874
Article number: 7185335
Language: English
ISSN: 1530437X
E-ISSN: 15581748
Document type: Journal article (JA)
Publisher: Institute of Electrical and Electronics Engineers Inc., United States
Abstract: A novel refractive-index (RI) Michelson interferometer based on a waist-enlarged taper is achieved. Such a device is fabricated by splicing a section of multimode fiber (MMF) at one end of single-mode fiber (SMF). Due to the fiber bitaper at the coupling point of SMF and MMF, the light is coupled into the MMF from lead in fiber core, and the intermodal interference will occur for the optical path difference between core mode and cladding mode. Then, the light will be reflected at the end of the fiber and recoupled back into the lead out fiber core by the fiber bitaper. When the lights return back to the lead out fiber, the intermodal interference will occur for the optical path difference between core mode and high order mode. The sensor has a linear response to RI with a sensitivity of -178.424 dB/RIU in the range of 1.351-1.4027 RIU. The temperature cross sensitivity is also analyzed, and the influence can be eliminated by simultaneous measurement of RI and temperature through the matrix equation. The proposed sensor features the advantages of easy fabrication, low cost, high mechanical strength, which make it a good candidate for bio-chemical measurement. © 2015 IEEE.
Number of references: 24
Main heading: Single mode fibers
Controlled terms: Refractometers - Michelson interferometers - Multimode fibers - Refractive index - Matrix algebra
Uncontrolled terms: Fiber taper - High mechanical strength - Intermodal interferences - Multi-mode fibers (MMF) - Refractive index sensing - Refractive index sensor - Simultaneous measurement - Temperature cross-sensitivity
Classification code: 741.1 Light/Optics - 741.1.2 Fiber Optics - 921.1 Algebra - 941.3 Optical Instruments
DOI: 10.1109/JSEN.2015.2465165
Funding Details: Number: 2013cx120837, Acronym: -, Sponsor: -; Number: 14JS073, Acronym: -, Sponsor: -; Number: 61275088, Acronym: NSFC, Sponsor: National Natural Science Foundation of China; Number: 2013JM8032, Acronym: -, Sponsor: Natural Science Foundation of Shaanxi Province; Number: Ys3703151414, Acronym: XSYU, Sponsor: Xi'an Shiyou University;
Funding text: This work was supported in part by the National Natural Science Foundation of China under Grant 61275088, in part by the Research Foundation of Education Bureau of Shaanxi Province under Grant 14JS073, in part by the Natural Science Foundation of Shaanxi Province under Grant 2013JM8032, in part by the Excellent Masters Theses Fund through the Xi'an Shiyou University under Grant Ys3703151414, and in part by the Graduate Student Innovation Fund under Grant 2013cx120837. The associate editor coordinating the review of this paper and approving it for publication was Dr. Anna G. Mignani.
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

63. Refractive index measurement based on fiber Bragg grating connected with a multimode fiber core

Accession number: 20151900818928
Authors: Shao, Min (1); Qiao, Xueguang (2); Jiasurname, Zhenan (1); Fusurname, Haiwei (1); Liu, Yinggang (1); Li, Huidong (1); Zhao, Xue (1)
Author affiliation: (1) Ministry of Education Key Laboratory on Photoelectric Oil-Gas Logging and Detecting, School of Science, Xi'an Shiyou University, Xi'an; 710065, China; (2) School of Physics, Northwest University, Xi'an; 710069, China
Corresponding author: Shao, Min(shaomin@xsyu.edu.cn)
Source title: Optics Communications
Abbreviated source title: Opt Commun
Volume: 351
Issue date: October 1, 2015
Publication year: 2015
Pages: 70-74
Article number: 20079
Language: English

ISSN: 00304018
CODEN: OPCOB8
Document type: Journal article (JA)
Publisher: Elsevier B.V., Netherlands
Abstract: Abstract A novel fiber refractive index sensor based on a fiber-Bragg grating (FBG) connected with a section of multimode fiber core (MMFC) is proposed and demonstrated. The MMFC excites high-order modes to form modal interference, and the core mode reflected by the FBG is sensitive to the surrounding refractive index (SRI) for the power of the core mode within MMFC is dependent on SRI. Measuring the reflective power variation of the core mode could realize the refractive index (RI) detection. Experimental results show that the core mode of FBG has a linear response to RI with enhanced sensitivity of 193.55 dB/RIU in the RI range of 1.3350-1.4042 RIU. The temperature effect of the sensor is also discussed. © 2015 Elsevier B.V. All rights reserved.
Number of references: 16
Main heading: Fiber Bragg gratings
Controlled terms: Refractometers - Multimode fibers - Refractive index
Uncontrolled terms: Enhanced sensitivity - Fiber refractive indexs - High order mode - Modal interference - Power variations - Refractive index measurement - Refractive index sensing - Surrounding refractive indices (SRI)
Classification code: 741.1 Light/Optics - 741.1.2 Fiber Optics - 941.3 Optical Instruments
DOI: 10.1016/j.optcom.2015.04.028
Funding Details: Number: 61077060,61275088, Acronym: NSFC, Sponsor: National Natural Science Foundation of China; Number: 14JK1580, Acronym: -, Sponsor: Scientific Research Plan Projects of Shaanxi Education Department;
Funding text: This work is supported by the National Science Foundation of China under Grants 61275088 and 61077060 , and Science Research Plan Projects of Shaanxi Education Department under Grant 14JK1580.
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

64. Radar target recognition based on structural dictionary learning

Accession number: 20153801281564
Authors: Duan, Peipei (1, 2); Li, Hui (1); Li, Qi (3)
Author affiliation: (1) Department of Electronics Engineering, Northwestern Polytechnical University, Xi'an; 710029, China; (2) School of Computer Science, Xi'an Shiyou University, Xi'an; 710065, China; (3) School of Electronic Engineering, Xidian University, Xi'an; 710071, China
Source title: Xibei Gongye Daxue Xuebao/Journal of Northwestern Polytechnical University
Abbreviated source title: Xibei Gongye Daxue Xuebao
Volume: 33
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Issue date: August 1, 2015
Publication year: 2015
Pages: 672-676
Language: Chinese
ISSN: 10002758
CODEN: XGDUE2
Document type: Journal article (JA)
Publisher: Northwestern Polytechnical University
Abstract: When high resolution range profile(HRRP) are used to recognize radar target, we need to deal with large sample size problem sometimes. In fact, the physical processes observed by a radar is very limited. None of the traditional methods makes use of the sparseness of HRRP samples. Thus, an redundant dictionary and a fast sparse representation algorithm are used to implement radar target recognition here. First, a Gabor redundant dictionary was partitioned by the characteristics of the atoms in it. By doing this, the atoms storage was decreased and the dictionary was generated faster. Then, the sparse representation algorithm (IGAMP) was used to produce the training samples' taxonomic dictionaries quickly. Finally, the reconstruction errors of testing samples were calculated to recognize the targets. The simulations show that this algorithm has the advantages of conciseness, higher recognition rate and good robustness.
Number of references: 9
Main heading: MATLAB
Controlled terms: Genetic algorithms - Learning algorithms - Radar target recognition
Uncontrolled terms: Dictionary learning - High resolution range profiles - IGAMP(improved genetic algorithm matching pursuit) - Redundant dictionaries - Sparse representation

Classification code: 716.2 Radar Systems and Equipment - 723.4.2 Machine Learning - 723.5 Computer Applications - 921 Mathematics
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

65. Electronic structures of Stone-Wales defective chiral (6,2) silicon carbide nanotubes: First-principles calculations

Accession number: 20152901044174
Authors: Song, Jiuxu (1, 2); Liu, Hongxia (3); Guo, Yingna (1); Zhu, Kairan (1)
Author affiliation: (1) School of Electronic Engineering, Xi'an Shiyou University, Xi'an; 710065, China; (2) School of Engineering and Information Technology, Murdoch University, Perth; 6150, Australia; (3) Xi'an Institute of Microelectronic Technology, Xi'an; 710075, China
Corresponding author: Song, Jiuxu(Jxsong@xsyu.edu.cn)
Source title: Physica E: Low-Dimensional Systems and Nanostructures
Abbreviated source title: Phys E
Volume: 74
Issue date: July 18, 2015
Publication year: 2015
Pages: 198-203
Article number: 12000
Language: English
ISSN: 13869477
CODEN: PELNFM
Document type: Journal article (JA)
Publisher: Elsevier B.V., Netherlands
Abstract: Abstract By using first-principle calculations based on density functional theory, the geometries and electronic structures of the Stone-Wales defective chiral (6,2) silicon carbide nanotubes (SiCNTs) are investigated. Independent on their orientations, Stone-Wales defects form two asymmetric pentagons and heptagons coupled in pairs (5-7-7-5) and a defect energy level in the band gap of the SiCNT. By applying transverse electric fields, significant differences in the electronic structures of the defective (6,2) SiCNTs are achieved, which may provide the foundation of identifying the orientation of Stone-Wales defects in chiral SiCNTs. © 2015 Elsevier B.V.
Number of references: 32
Main heading: Electronic structure
Controlled terms: Point defects - Calculations - Energy gap - Nanotubes - Silicon carbide - Yarn - Density functional theory - Electric fields
Uncontrolled terms: Defect energy level - First principle calculations - First-principles calculation - Silicon carbide nanotubes - Stone-Wales defects - Transverse electric field
Classification code: 701.1 Electricity: Basic Concepts and Phenomena - 761 Nanotechnology - 804.2 Inorganic Compounds - 819.4 Fiber Products - 921 Mathematics - 922.1 Probability Theory - 931.3 Atomic and Molecular Physics - 931.4 Quantum Theory; Quantum Mechanics - 933.1 Crystalline Solids - 933.1.1 Crystal Lattice
DOI: 10.1016/j.physe.2015.06.013
Funding Details: Number: 2013K07-14, Acronym: -, Sponsor: -; Number: 14JK1581, Acronym: -, Sponsor: -;
Funding text: This work is supported by the fund of Shaanxi Provincial Educational Department (No.14JK1581) and the Natural Science Basic Research Plan in Shaanxi province of China (No. 2013K07-14).
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

66. Stability criterion of eccentric worn casing under nonuniform external loadings

Accession number: 20153201119714
Authors: Qu, Zhan (1); Wang, Xiao-Zeng (1); Dou, Yi-Hua (2); Ma, Wen-Hai (3)
Author affiliation: (1) School of Aeronautics Northwestern Polytechnical University, Xi'an; Shaanxi; 710072, China; (2) School of Mechanical Engineering, Xi'an Shiyou University, Xi'an; Shaanxi; 710065, China; (3) Daqing Oilfield Limited Company, Daqing; Heilongjiang; 163453, China
Corresponding author: Qu, Zhan(zhqu@xsyu.edu.cn)
Source title: Gongcheng Lixue/Engineering Mechanics

Abbreviated source title: Gongcheng Lixue
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Issue: 7
Issue date: July 1, 2015
Publication year: 2015
Pages: 249-256
Language: Chinese
ISSN: 10004750
CODEN: GOLIEB
Document type: Journal article (JA)
Publisher: Tsinghua University
Abstract: The small parameter perturbation method was adopted to develop the stability criterion of a worn casing with initial ovality under non-uniform loadings, by comparing the relative strain of the worn casing against its critical value. The relationships between the relative strain and key parameters such as the outer diameter, the wall thickness, the initial ovality, the non-uniform loadings, and the worn depth of the casing were analyzed. The increase in the outer diameter of the casing decreased the critical value of the relative strain, and required a heavy casing to maintain its stability. The relative strain of the worn casing increased linearly with the initial ovality under non-uniform loadings. The relative strain was parabolically related to the non-uniformity of the loading. The bigger the non-uniformity coefficient, the greater the relative strain. The relative strain of the worn casing increased linearly with its worn depth under non-uniform loadings. The proposed stability criterion is expected to evaluate the integrity of wellbores which include worn casings subject to non-uniform loadings. ©, 2015, Tsinghua University. All right reserved.
Number of references: 22
Main heading: Stability criteria
Controlled terms: Perturbation techniques
Uncontrolled terms: Casing - Eccentric wear - External loading - Non-uniform - Non-uniformities - Outer diameters - Parameter perturbation - Parameters perturbations
Classification code: 731.4 System Stability - 921 Mathematics - 961 Systems Science
DOI: 10.6052/j.issn.1000-4750.2014.07.0573
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

67. Synergism in Mixed Zwitterionic Surface Activity Ionic Liquid and Anionic Surfactant Solution: Analysis of Interfacial and Micellar Behavior

Accession number: 20144400136675
Authors: Gu, Xue-fan (1, 2); Huo, Jing (3); Wang, Rui-tao (3); Wu, Dao-cheng (1); Yan, Yong-li (2)
Author affiliation: (1) School of Life Science and Technology, Xi'an Jiaotong University, Xi'an, China; (2) College of Chemistry and Chemical Engineering, Xi'an Shiyou University, Xi'an, China; (3) China Research Institute of Daily Chemical Industry, Taiyuan, China
Corresponding author: Yan, Yong-li
Source title: Journal of Dispersion Science and Technology
Abbreviated source title: J. Dispersion Sci. Technol.
Volume: 36
Issue: 3
Issue date: March 27, 2015
Publication year: 2015
Pages: 334-342
Language: English
ISSN: 01932691
E-ISSN: 15322351
Document type: Journal article (JA)
Publisher: Bellwether Publishing, Ltd.
Abstract: Synergistic interactions between zwitterionic surface active ionic liquids (SAILs), N-alkyl-N′_carboxymethyl imidazoliumm inner salts ([N-Cn, N′_CO2-Im], n = 12, 14), and a traditional twin-tail anionic surfactant (dioctyl sulphosuccinate sodium salt, AOT) in aqueous solution has been studied by surface tension and fluorescence measurements at 298.15 K. The results imply that the mixed systems have superior surface activity in comparison to individual surfactant, and they all present a non-ideal behavior with synergism. The strength of interactions between two surfactants increases with the enhancement of the hydrocarbon chain of the zwitterionic SAILs. Compared with

interaction parameters in mixed monolayer, the larger value of interaction parameters in mixed micelles indicates that the mixed micelle formation is more favorable. Additionally, a series of thermodynamic parameters such as the standard Gibbs free energy of adsorption ((Formula presented.)), the standard Gibbs free energy of micellization ((Formula presented.)), and excess free energy of micellization (#G ex) have been calculated. The negative values of (Formula presented.) and (Formula presented.) show that both micellization and adsorption of surfactants are spontaneous, while the negative value of #G ex indicates the formation of stable mixed micelles for [N-Cn, N′_CO2-Im]/AOT mixture, which can potentially be useful for industrial preparations and medicinal formulations. (Figure presented.). © 2015, Taylor & Francis Group, LLC.
Number of references: 46
Main heading: Ionic liquids
Controlled terms: Carbon dioxide - Critical micelle concentration - Surface tension - Anionic surfactants - Free energy - Gibbs free energy - Micelles - Salts - Biophysics - Solutions - Micellization
Uncontrolled terms: Fluorescence measurements - Free energy of adsorption - Free energy of micellization - Micellar behavior - Surface active ionic liquids - Surface activities - Synergistic interaction - Thermodynamic parameter
Classification code: 461.9 Biology - 641.1 Thermodynamics - 801.3 Colloid Chemistry - 803 Chemical Agents and Basic Industrial Chemicals - 804 Chemical Products Generally - 804.2 Inorganic Compounds - 931.2 Physical Properties of Gases, Liquids and Solids
DOI: 10.1080/01932691.2014.901915
Funding Details: Number: 2013JK0649,2013JK0675, Acronym: -, Sponsor: -; Number: 21073140, Acronym: NSFC, Sponsor: National Natural Science Foundation of China;
Funding text: The authors are thankful to the financial support of the National Natural Science Foundation of China (No. 21073140) and the Science & Technology Research Program of Shannxi Education Bureau (No. 2013JK0675, 2013JK0649).
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

68. Erosion of Premium Connection Cross-over Joint in Solid-liquid Flow (*Open Access*)

Accession number: 20154201387747
Authors: Zhao, Yong'An (1); Cai, Wenbin (1); Cui, Lu (2); Cheng, Jiarui (3); Dou, Yihua (2)
Author affiliation: (1) Baoshan Iron and Steel Co., Ltd, Shanghai, China; (2) School of Mechanical Engineering, Xi'An Shiyou University, Xi'an, Shaanxi, China; (3) State Key Laboratory of Multiphase Flow in Power Engineering, Xi'An Jiaotong University, Xi'an, Shaanxi, China
Source title: MATEC Web of Conferences
Abbreviated source title: MATEC Web Conf.
Volume: 22
Part number: 1of1
Issue title: International Conference on Engineering Technology and Application, ICETA 2015
Issue date: July 9, 2015
Publication year: 2015
Article number: 02012
Language: English
ISSN: 22747214
E-ISSN: 2261236X
Document type: Conference article (CA)
Conference name: International Conference on Engineering Technology and Application, ICETA 2015
Conference date: May 29, 2015 - May 30, 2015
Conference location: Xiamen, China
Conference code: 115595
Publisher: EDP Sciences
Abstract: Hydraulic fracturing is a new technique which is used in oil yield to maximize its own production. The pumping of fracturing slurry flow through tubing collar can cause considerable mass loss of inner surface materials. This may pose a significantly potential risk even a well loss. Especially, the erosion phenomenon is particularly serious in the structure of variable diameter. Numerical simulation in this paper was used to get particle impact parameters, and it is combined with jet experiments to find out the main factors of BG-13Cr mass loss. Finally, the equation with experimental data was applied to predict erosion rate of premium connection cross-over joint inner wall. © Owned by the authors, published by EDP Sciences, 2015.
Number of references: 10

Main heading: Erosion
Controlled terms: Numerical models - Fighter aircraft - Hydraulic fracturing - Tubing
Uncontrolled terms: Erosion rates - Inner surfaces - Jet flow - Particle impact - Potential risks - Premium connection - Solid liquid flow - Variable diameter
Classification code: 512.1.2 Petroleum Deposits : Development Operations - 619.1 Pipe, Piping and Pipelines - 652.1.2 Military Aircraft - 921 Mathematics
DOI: 10.1051/matecconf/20152202012
Compendex references: YES
Open Access type(s): All Open Access, Gold
Database: Compendex
Data Provider: Engineering Village

69. Paleoenvironments, stratigraphic evolution and reservoir characteristics of the Upper Cretaceous Yingjisha Group, southwest Tarim Basin

Accession number: 20152600971196
Authors: Guo, Feng (1); Yang, Dan (1); Eriksson, Kenneth A. (2); Guo, Ling (3)
Author affiliation: (1) School of Earth Sciences and Engineering, Xi'an Shiyou University, Xi'an; 710065, China; (2) Department of Geosciences, Virginia Tech, Blacksburg; VA; 24061, United States; (3) Department of Geology, Northwest University, Xi'an; 710069, China
Corresponding author: Guo, Feng
Source title: Marine and Petroleum Geology
Abbreviated source title: Mar. Pet. Geol.
Volume: 67
Issue date: November 01, 2015
Publication year: 2015
Pages: 336-355
Language: English
ISSN: 02648172
Document type: Journal article (JA)
Publisher: Elsevier Ltd
Abstract: The Upper Cretaceous Yingjisha Group in the southwestern Tarim Basin is an important host of hydrocarbons with the highest-quality reservoirs are a product of depositional environment, diagenesis and tectonics. The Yingjisha Group is composed, in ascending order, of the Kukebai, Wuyitak, Yigziya and Tuyiluok formations. Strata are thickest in the Kashgar Sag in the northwest and the Yecheng Sag (up to 635 m) in the southeast and thin over the central Qimugen Uplift (less than 70 m). Six facies associations (1-6) are interpreted, respectively, as braided fluvial, lagoon, nearshore-shelf, playa-lake, restricted carbonate platform and open carbonate platform to platform margin. Stratigraphic evolution of the Yingjisha Group, recorded in vertical changes in inferred depositional environments, is related to changes in water depth and climate. At least two transgressive (Kukebai and Yigziya formations) - regressive (Wuyitak and Tuyiluok formations) cycles are recognized that can be correlated with the global eustatic curve of Haq et al. (1988). Detailed paleoenvironmental analysis forms the basis for understanding and predicting the occurrence of reservoir rocks in this mixed siliciclastic-carbonate succession. High-energy, braided-fluvial sandstones and carbonate platform and platform-margin grainstones (locally dolomitized) comprise the best reservoirs. The most important diagenetic processes in sandstones that resulted in porosity and permeability changes are: 1) mechanical compaction, 2) cementation, and 3) replacement and dissolution of unstable clastic grains and cements, whereas in carbonate rocks the dominant diagenetic processes are cementation and dissolution. Fracturing played an important role in enhancing the quality of sandstone and especially carbonate reservoirs notably in terms of their permeability by connecting previously isolated pores. Stratigraphic evolution of the Yingjisha Group resulted in stacking of seal rocks above reservoirs during the late transgressive and regressive phases of sedimentation. © 2015 Elsevier Ltd.
Number of references: 90
Main heading: Sandstone
Controlled terms: Cements - Deposition - Cementing (shafts) - Tectonics - Carbonation - Mechanical permeability - Petroleum reservoir engineering - Petroleum reservoirs - Stratigraphy - Dissolution
Uncontrolled terms: Depositional environment - Reservoir characteristic - Stratigraphic evolution - Tarim Basin - Upper Cretaceous
Classification code: 412.1 Cement - 481.1 Geology - 482.2 Minerals - 512.1.1 Oil Fields - 512.1.2 Petroleum Deposits : Development Operations - 802.2 Chemical Reactions - 802.3 Chemical Operations
Numerical data indexing: Size 6.35e+02m, Size 7.00e+01m

DOI: 10.1016/j.marpetgeo.2015.05.023
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

70. An electrochemical sensor based on titanium oxide-carbon nanotubes nanocomposite for simultaneous determination of hydroquinone and catechol

Accession number: 20151600761569
Authors: Meng, Zuchao (1, 2); Zhang, Hongfang (1); Zheng, Jianbin (1)
Author affiliation: (1) Institute of Analytical Science, Shaanxi Provincial Key Labortary of Electroanalytical Chemistry, Northwest University, Xi'an, Shaanxi; 710069, China; (2) College of Chemistry and Chemical Engineering, Xi'an Shiyou University, Xi'an, Shaanxi; 710065, China
Corresponding author: Zheng, Jianbin(zhengjb@nwu.edu.cn)
Source title: Research on Chemical Intermediates
Abbreviated source title: Res Chem Intermed
Volume: 41
Issue: 5
Issue date: May 1, 2015
Publication year: 2015
Pages: 3135-3146
Article number: 1420
Language: English
ISSN: 09226168
E-ISSN: 15685675
CODEN: RCINEE
Document type: Journal article (JA)
Publisher: Kluwer Academic Publishers
Abstract: Abstract A novel TiO2/multi-walled carbon nanotubes (MWCNTs) composite film-modified electrode was fabricated to devolop an electrochemical sensor for the simultaneous determination of hydroquinone (HQ) and catechol (CC). The prepared electrode not only separated the peaks of HQ and CC on the cyclic voltammogram with oxidation potential difference of 116 mV but also lowered the overpotential significantly and increased the reversible process and the peak currents of HQ and CC. In 0.1 M PBS (pH = 7.0). The oxidation peak current was linearly proportional to the concentration of CC and HQ in two broad linear ranges with the detection limit of 0.8 μM. The present electrochemical sensor for the simultaneous determination of CC and HQ showed high sensitivity and low detection limit. © Springer Science+Business Media Dordrecht 2013.
Number of references: 37
Main heading: Titanium dioxide
Controlled terms: Nanocomposite films - Nanocomposites - Yarn - Phenols - Carbon nanotubes - Electrochemical electrodes - Electrochemical sensors
Uncontrolled terms: Catechol - Cyclic voltammograms - Film modified electrode - Hydroquinone - Linearly proportional - Oxidation potentials - Oxide-carbon nanotube - Simultaneous determinations
Classification code: 712.1 Semiconducting Materials - 732.2 Control Instrumentation - 761 Nanotechnology - 801 Chemistry - 801.4.1 Electrochemistry - 804.1 Organic Compounds - 804.2 Inorganic Compounds - 819.4 Fiber Products - 933 Solid State Physics - 933.1 Crystalline Solids
Numerical data indexing: Voltage 1.16e-01V
DOI: 10.1007/s11164-013-1420-9
Funding Details: Number: 21275116, Acronym: NSFC, Sponsor: National Natural Science Foundation of China;
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

71. Autonomous Community Architecture and Construction Technology for City Petrol Supply Management System

Accession number: 20152901046584
Authors: Wei, Fan (1); Zhang, Liumei (1); Liu, Tianshi (1); Lu, Xiaodong (2); Mori, Kinji (3)

Author affiliation: (1) School of Computer Science, Xi'an Shiyou University, Xi'an; 710065, China; (2) Electronic Navigation Research Institute, Japan; (3) Department of Computer Science and Engineering, Waseda University, 27 Waseda, Shinjuku, Tokyo; 162-0042, Japan
Source title: Proceedings - 2015 IEEE 12th International Symposium on Autonomous Decentralized Systems, ISADS 2015
Abbreviated source title: Proc. - IEEE Int. Symp. Auton. Decentralized Syst., ISADS
Part number: 1of1
Issue date: April 29, 2015
Publication year: 2015
Pages: 109-113
Article number: 7098245
Language: English
ISBN-13: 9781479982615
Document type: Conference article (CA)
Conference name: 2015 12th IEEE International Symposium on Autonomous Decentralized Systems, ISADS 2015
Conference date: March 25, 2015 - March 27, 2015
Conference location: Taichung, Taiwan
Conference code: 112100
Sponsor: IEEE Computer Society
Publisher: Institute of Electrical and Electronics Engineers Inc., United States
Abstract: City Petrol Supply Management System(CPSMS) is very important in current society. Effective CPSMS could reduce the waiting time of user, reduce pollution gas by incomplete combustion from engine idling, decrease the air pollution and promote the service quality of petroleum enterprise. But via centralized management model of traditional CPSMS, system is not flexible to get good timeliness performance. In this paper, we propose an Autonomous Community Architecture and construction technology to solve this problem. In this architecture, each petrol station could real-timely share information with each other. It could also share information with users. So that each petrol station could make decision to cooperate with each other to construct community. Each user could select most adequate petrol station for filling service. Waiting time for petrol filling service could be decreased. © 2015 IEEE.
Number of references: 7
Main heading: Computer architecture
Controlled terms: Pollution - Information dissemination - Gasoline
Uncontrolled terms: Centralized management - Construction technologies - Flexible - Incomplete combustion - Petrol stations - Petroleum enterprise - Supply management system - Timeliness
Classification code: 523 Liquid Fuels - 903.2 Information Dissemination
DOI: 10.1109/ISADS.2015.31
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

72. Vibrational properties of single-walled silver nanotubes studied from first principles

Accession number: 20153101079109
Authors: Yang, Aping (1); Li, Xiaowei (2); Guo, Ping (3)
Author affiliation: (1) School of Science, Xi'an Shiyou University, Xi'an; 710065, China; (2) School of Materials Science and Technology, China University of Geosciences, Beijing; 100083, China; (3) Department of Physics, Northwest University, Xi'an; 710069, China
Corresponding author: Yang, Aping(yangap@xsyu.edu.cn)
Source title: Physica E: Low-Dimensional Systems and Nanostructures
Abbreviated source title: Phys E
Volume: 74
Issue date: July 25, 2015
Publication year: 2015
Pages: 310-317
Article number: 12042
Language: English
ISSN: 13869477
CODEN: PELNFM
Document type: Journal article (JA)
Publisher: Elsevier B.V., Netherlands

Abstract: Abstract The vibrational modes, especially the radial breathing modes (RBMs), of the single-walled silver nanotubes (SWSNTs) have been calculated by the first principles calculations. It is found that (1) the tip-suspended Ag (4,2) and Ag (6,3) tubes can also be potentially realized in future experiments, due to existence of a local minimum in the cohesive energies and string tension variation with their unit cell lengths. (2) The maximal frequencies of the SWSNTs are comparable to those of bulk silver, but its vibrational density of states is quite different. (3) Although the RBM frequencies of the SWSNTs depend on both of their tube diameters and chiral symmetries, they still approximately follow a linear variation law with the inverse tube diameters. (4) By investigating the stiffness coefficient of Ag (4,4) and Au (4,4) tubes, we have found that the Ag-Ag bond is stronger than the Au-Au ones. (5) The calculated first-order resonant Raman spectra are found to be sensitive to the chiral indices of SWSNTs, which may be useful in future experiment. © 2015 Elsevier B.V.
Number of references: 49
Main heading: Nanotubes
Controlled terms: Yarn - Binary alloys - Calculations - Raman scattering - Silver - Gold alloys - Silver alloys
Uncontrolled terms: First principles - First-principles calculation - Radial breathing mode - Resonant Raman - Single-walled - Stiffness coefficients - Vibrational density of state - Vibrational properties
Classification code: 547.1 Precious Metals - 741.1 Light/Optics - 761 Nanotechnology - 819.4 Fiber Products - 921 Mathematics - 933.1 Crystalline Solids
DOI: 10.1016/j.physe.2015.07.020
Funding Details: Number: 11147115,11304246, Acronym: NSFC, Sponsor: National Natural Science Foundation of China; Number: 2013JK0630, Acronym: -, Sponsor: Education Department of Shaanxi Province;
Funding text: Ap. Yang gratefully acknowledged useful discussions with Prof. Jinming Dong. This work was supported by the National Natural Science Foundation of China under Grant no. 11147115 and 11304246 , also supported by the Scientific Research Program Funded by Shaanxi Provincial Education Department (Program no. 2013JK0630).
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

73. Electrostatic probe analysis of current-carrying region of sheet slanting tungsten electrode arc

Accession number: 20160902026585
Authors: Li, Yuanbo (1); Lu, Tian (1); Zhu, Liang (2); Sun, Zhe (1)
Author affiliation: (1) College of Materials Science and Engineering, Xi'an Shiyou University, Xi'an; 710065, China; (2) State Key Laboratory of Advanced Processing and Recycling of Non-Ferrous Metals, Lanzhou University of Technology, Lanzhou; 730050, China
Source title: Hanjie Xuebao/Transactions of the China Welding Institution
Abbreviated source title: Hanjie Xuebao
Volume: 36
Issue: 12
Issue date: December 25, 2015
Publication year: 2015
Pages: 22-26
Language: Chinese
ISSN: 0253360X
CODEN: HHPAD2
Document type: Journal article (JA)
Publisher: Harbin Research Institute of Welding
Abstract: The sheet slanting tungsten electrode with rectangular section is employed to ensure application of great welding current for narrow gap welding process. The shape and current density distribution of arc current-carrying region can be analyzed by the low disturbance electrostatic probe. The results show that the sheet slanting tungsten electrode make the current density distribution more concentrate with 3~8° of hypotenuse tilt angle; because the current-carrying region section area of sheet slanting tungsten electrode arc is larger than that of cylinder tungsten electrode arc under the same welding parameters, the current density of sheet slanting tungsten electrode arc is smaller; the current density increased with larger welding current, and the heat concentrated near the center of current-carrying region section. © 2015, Harbin Research Institute of Welding. All right reserved.
Number of references: 8
Main heading: Current density
Controlled terms: Electrostatics - Probes - Tungsten

Uncontrolled terms: Arc carrying-current region - Current density distribution - Electrostatic probe - Narrow gap welding - Rectangular section - Tungsten electrodes - Welding current - Welding parameters
Classification code: 543.5 Tungsten and Alloys - 701.1 Electricity: Basic Concepts and Phenomena
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

74. Solutions to Open Problems on Fuzzy Filters of BL-algebras (*Open Access*)

Accession number: 20144600179437
Authors: Wei, Wang (1, 2); Saeid, Arsham Borumand (3)
Author affiliation: (1) College of Electrical Engineering, Southwest Jiaotong University, Chengdu, Sichuan; 610031, China; (2) College of Sciences, Xi'an Shiyou University, Xi'an, Shaanxi; 710065, China; (3) Department of Mathematics, Shahid Bahonar University of Kerman, Kerman, Iran
Corresponding author: Wei, Wang
Source title: International Journal of Computational Intelligence Systems
Abbreviated source title: Int. J. Comput. Intell. Syst.
Volume: 8
Issue: 1
Issue date: January 2, 2015
Publication year: 2015
Pages: 106-113
Language: English
ISSN: 18756891
E-ISSN: 18756883
Document type: Journal article (JA)
Publisher: Taylor and Francis Ltd.
Abstract: Abstract: This paper focuses on the investigation of fuzzy filters of BL-algebras, an important and popular generic logical algebra. By studying the equivalent conditions of fuzzy fantastic filter and fuzzy normal filter of BL-algebras, the relation between these two filters are revealed. Two open problems of BL-algebras, i.e.,"Under what suitable condition a normal filter becomes a fantastic filter? " and " Under what suitable condition extension property for normal filter holds? (Extension property for a normal filter)", are solved accordingly. © 2015,the authors.
Number of references: 22
Main heading: Fuzzy filters
Controlled terms: Algebra - Bandpass filters
Uncontrolled terms: BL-algebra - Equivalent condition - Extension properties - Fuzzy fantastic filter - Non-classical logic - Normal filters - Suitable conditions
Classification code: 703.2 Electric Filters - 723 Computer Software, Data Handling and Applications - 921.1 Algebra
DOI: 10.1080/18756891.2014.963989
Funding Details: Number: 2011FZ0051, Acronym: -, Sponsor: -; Number: [2011]146, Acronym: -, Sponsor: -; Number: 2011BS017, Acronym: -, Sponsor: -; Number: 60875034,61175055, Acronym: NSFC, Sponsor: National Natural Science Foundation of China; Number: 2013M540716, Acronym: -, Sponsor: China Postdoctoral Science Foundation; Number: 2012JQ1023, Acronym: -, Sponsor: Natural Science Foundation of Shaanxi Province;
Funding text: This work is partially supported by the National Natural Science Foundation of China (Grant No. 60875034, 61175055); Sichuan Key Technology Research and Development Program of China (Grant No. 2011FZ0051); Wireless Administration of Ministry of Industry and Information Technology of China ([2011]146); the Natural Science foundation of Shaanxi Province (Grant No. 2012JQ1023), China Postdoctoral Science Foundation funded project (Grant No. 2013M540716) and doctor initial fund of Xi'an Shiyou University of China (Grant No. 2011BS017).
Compendex references: YES
Open Access type(s): All Open Access, Gold
Database: Compendex
Data Provider: Engineering Village

75. Theoretical and experimental study of structural slow light in a microfiber coil resonator

Accession number: 20153801297430
Authors: Ma, Cheng-Ju (1, 2); Ren, Li-Yong (2); Xu, Yi-Ping (2); Wang, Ying-Li (2); Zhou, Hong (1); Fu, Hai-Wei (1); Wen, Jin (1)

Author affiliation: (1) School of Science, Xi'An Shiyou University, Xi'an; 710065, China; (2) State Key Laboratory of Transient Optics and Photonics, Xi'An Institute of Optics and Precision Mechanics, Chinese Academy of Sciences, Xi'an; 710119, China
Corresponding author: Ma, Cheng-Ju(chengjuma@xsyu.edu.cn)
Source title: Applied Optics
Abbreviated source title: Appl. Opt.
Volume: 54
Issue: 18
Issue date: June 20, 2015
Publication year: 2015
Pages: 5619-5623
Language: English
ISSN: 1559128X
E-ISSN: 21553165
CODEN: APOPAI
Document type: Journal article (JA)
Publisher: OSA - The Optical Society
Abstract: In this paper, a compact slow-light microfiber coil resonator (MCR) is fabricated and the slow-light properties of it are analyzed and tested. Based on coupled-wave theory, a theoretical model for describing the slow-light propagation in the MCR is established. Experimentally, the MCR slow-light element is fabricated and its relative slow-light time delay is measured. The group velocity of the light pulse in the MCR slow-light element can be reduced to about 0.47c (c is the speed of light in vacuum) and the shape of the light pulse passing through the MCR is well preserved. © 2015 Optical Society of America.
Number of references: 18
Main heading: Slow light
Controlled terms: Light - Light velocity - Resonators - Light transmission
Uncontrolled terms: Coupled wave theory - Group velocities - In-vacuum - Light elements - Light properties - Light pulse - Microfiber coil resonators - Theoretical modeling
Classification code: 741.1 Light/Optics
DOI: 10.1364/AO.54.005619
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

76. Erratum to "Efficient preparation of biodiesel from rapeseed oil over modified CaO" [Appl. Energy 88 (8) (2011) 2593-2916] DOI: 10.1016/j.apenergy.2011.02.033

Accession number: 20154401462536
Authors: Tang, Ying (1); Meng, Mei (1); Zhang, Jie (1); Lu, Yong (2)
Author affiliation: (1) College of Chemistry and Chemical Engineering, Xi'an Shiyou University, Xi'an, Shannxi, China; (2) Shanghai Key Laboratory of Green Chemistry and Chemical Processes, Department of Chemistry, East China Normal University, Shanghai; 200062, China
Corresponding author: Tang, Ying(tangying78@xsyu.edu.cn)
Source title: Applied Energy
Abbreviated source title: Appl. Energy
Volume: 157
Issue date: November 1, 2015
Publication year: 2015
Pages: 984
Language: English
ISSN: 03062619
CODEN: APENDX
Document type: Erratum (ER)
Publisher: Elsevier Ltd
DOI: 10.1016/j.apenergy.2015.09.060
ErratuFlg: 51320256
Database: Compendex
Data Provider: Engineering Village

77. On open problems based on fuzzy filters of pseudo BCK -algebras (*Open Access*)

Accession number: 20155301740148
Authors: Wei, Wang (1, 2, 4); Hui, Wan (3); Kai, Du (1); Yang, Xu (4)
Author affiliation: (1) State Key Laboratory of Astronautic Dynamics, Xi'an, China; (2) College of Sciences, Xi'An Shiyou University, Xi'an, China; (3) Center for Nonlinear Studies, College of Mathematics, Northwest University, Xi'an, China; (4) College of Electrical Engineering, Southwest Jiaotong University, Chengdu, China
Corresponding author: Hui, Wan(wanhai1000@163.com)
Source title: Journal of Intelligent and Fuzzy Systems
Abbreviated source title: J. Intelligent Fuzzy Syst.
Volume: 29
Issue: 6
Issue date: November 21, 2015
Publication year: 2015
Pages: 2387-2395
Language: English
ISSN: 10641246
E-ISSN: 18758967
Document type: Conference article (CA)
Publisher: IOS Press BV
Abstract: We study the properties and relations of fuzzy pseudo-filters of pseudo-BCK algebras. After we discuss the equivalent conditions of fuzzy normal pseudo-filter of pseudo-BCK algebra (pP), we propose fuzzy implicative pseudo-filter and its relation with fuzzy Boolean filter of (bounded) pseudo-BCK algebras (pP). Then two open problems: "In pseudo-BCK algebra or bounded pseudo-BCK algebra, Is the notion of implicative pseudo-filter equivalent to the notion of Boolean filter?" and "Prove or negate the following conclusion: A pseudo-BCK algebra is an implicative pseudo-BCK algebra if and only if every pseudo-filter of it is a Boolean filter(or an implicative pseudo-filter)" are partly solved.
Number of references: 30
Main heading: Fuzzy filters
Controlled terms: Algebra - Bandpass filters
Uncontrolled terms: BCK-algebra - Fuzzy Boolean filters - fuzzy normal pseudo-filter - fuzzy pseudo-filter - Pseudo B L-algebra
Classification code: 703.2 Electric Filters - 723 Computer Software, Data Handling and Applications - 921.1 Algebra
DOI: 10.3233/IFS-151938
Compendex references: YES
Open Access type(s): All Open Access, Bronze
Database: Compendex
Data Provider: Engineering Village

78. Facies-controlled modeling on Es2 at block I of Shengtuo oilfield

Accession number: 20152801015163
Authors: Pan, Shaowei (1); Yin, Jie (1); Li, Zhenhua (2); Fan, Yongjie (3)
Author affiliation: (1) College of Computer Science, Xi'an Shiyou University, Xi'an, China; (2) Exploration and Development Research Institution of PetroChina Jidong Oilfield, Tangshan, China; (3) Oil Production Plant 3 of Petro China Changqing Oilfield Company, Yinchuan, China
Source title: Electronic Journal of Geotechnical Engineering
Abbreviated source title: Electron. J. Geotech. Eng.
Volume: 20
Issue: 11
Issue date: 2015
Publication year: 2015
Pages: 4699-4709
Language: English
E-ISSN: 10893032
Document type: Journal article (JA)
Publisher: E-Journal of Geotechnical Engineering
Abstract: In order to solve the problems that the reservoir declined quickly and the remaining oil was more difficult than before to exploit of Es2 at block I in Shengtuo Oilfield, the structural model, the sedimentary microfacies model

and the facies-controlled reservoir parameter model were established step by step in this paper. All the models above were on the basis of study results on seism, logging, and geology and development performance. Then the facies-controlled reservoir parameter model and the non-facies-controlled reservoir parameter model were compared. The comparative results revealed that the facies-controlled reservoir parameter model was more reliable in describing reservoir heterogeneity. Therefore the comprehensive tapping measures were adopted according to the modeling results, which raised the recovery rate of Es2 at block I in Shengtuo Oilfield. The successful application of facies-controlled modeling results showed that the facies-controlled modeling could satisfactorily characterize the properties of reservoirs with quick-change sedimentary microfacies and severe heterogeneity, and provide dependable geological model for the later development of oil and gas fields. © 2014 ejge.
Number of references: 6
Main heading: Sedimentology
Controlled terms: Natural gas fields - Oil field development - Gas industry - Oil well flooding
Uncontrolled terms: Development performance - Facies-controlled modeling - Geological modeling - Oil and gas fields - Reservoir heterogeneity - Reservoir parameters - Sedimentary micro-facies - Structural modeling
Classification code: 481.1 Geology - 511.1 Oil Field Production Operations - 512.1.2 Petroleum Deposits : Development Operations - 512.2.1 Natural Gas Fields - 522 Gas Fuels
Database: Compendex
Data Provider: Engineering Village

79. Development of an erbium-fiber-laser-based optical frequency comb at NTSC

Accession number: 20154101361005
Authors: Zhang, Yanyan (1); Yan, Lulu (1); Fan, Songtao (1, 2); Zhang, Long (1); Zhao, Wenyu (1, 2); Guo, Wenge (3); Zhang, Shougang (1); Jiang, Haifeng (1)
Author affiliation: (1) Key Lab. of Time and Freq. Primary Standards, National Time Service Center, Xi'an, China; (2) Graduate University of Chinese Academy of Sciences, Beijing, China; (3) School of Science, Xi'An Shiyou University, Xi'an; 710065, China
Source title: 2015 Joint Conference of the IEEE International Frequency Control Symposium and the European Frequency and Time Forum, FCS 2015 - Proceedings
Abbreviated source title: Jt. Conf. IEEE Int. Freq. Control Symp. Eur. Freq. Time Forum, FCS - Proc.
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Issue title: 2015 Joint Conference of the IEEE International Frequency Control Symposium and the European Frequency and Time Forum, FCS 2015 - Proceedings
Issue date: June 29, 2015
Publication year: 2015
Pages: 599-601
Article number: 7138916
Language: English
ISBN-13: 9781479988662
Document type: Conference article (CA)
Conference name: 2015 Joint Conference of the IEEE International Frequency Control Symposium and the European Frequency and Time Forum, FCS 2015
Conference date: April 12, 2015 - April 16, 2015
Conference location: Denver, CO, United states
Conference code: 113515
Sponsor: IEEE EFTF; IEEE UFFC
Publisher: Institute of Electrical and Electronics Engineers Inc., United States
Abstract: We report the research progress of an erbium-fiber-based optical frequency comb with repetition rate 232 MHz. Its repetition rate is stabilized to a continuous wave laser via an intra-cavity electro-optic modulator and a piezo-transducer, yielding an in-loop frequency instability about 2.1×10-16 @ 1s. The carrier envelope offset (CEO) frequency with a signal-to-noise ratio of 45 dB for 300 kHz resolution spectrum is detected by using a common path f-2f interferometer. CEO frequency is locked to a RF reference frequency by controlling the pump current. The frequency instability induced by in-loop CEO frequency is about 2.9×10-16@ 1s. The frequency count in use is a Π–type counter from K&K. © 2015 IEEE.
Number of references: 15
Main heading: Fiber lasers
Controlled terms: Erbium - Natural frequencies - Optical materials - Continuous wave lasers - Light modulators - Signal to noise ratio

Uncontrolled terms: Carrier envelope offset frequencies - Electro-optic modulators - Erbium fiber lasers - Frequency instabilities - Frequency stabilization - Optical frequency combs - Reference frequency - Resolution spectra
Classification code: 547.2 Rare Earth Metals - 716.1 Information Theory and Signal Processing - 741.3 Optical Devices and Systems - 744.1 Lasers, General - 744.4 Solid State Lasers
Numerical data indexing: Decibel 4.50e+01dB, Frequency 2.32e+08Hz, Frequency 3.00e+05Hz, Time 1.00e+00s
DOI: 10.1109/FCS.2015.7138916
Compendex references: YES
Database: Compendex
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80. Review of capillary number in chemical enhanced oil recovery

Accession number: 20160902024558
Authors: Guo, Hu (1); Dou, Ma (2); Hanqing, Wang (3); Wang, Fuyong (1); Yuanyuan, Gu (1); Yu, Zhaoyan (1); Yansheng, Wang (1); Li, Yiqiang (1)
Author affiliation: (1) China Univerisity of Petroleum, Beijing, China; (2) Yanchang Petroleum Xunyi Project Department, China; (3) Xi'an Petroleum University, China
Source title: Society of Petroleum Engineers - SPE Kuwait Oil and Gas Show and Conference
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Report number: SPE-175172-MS
Language: English
ISBN-13: 9781613994061
Document type: Conference article (CA)
Conference name: SPE Kuwait Oil and Gas Show and Conference
Conference date: October 11, 2015 - October 14, 2015
Conference location: Mishref, Kuwait
Conference code: 117752
Publisher: Society of Petroleum Engineers
Abstract: After decades of development, great progress has been made in capillary number theory and it has important but often incorrect application in EOR. Investigation into progress on capillary number theory and some misuse of capillary number theory helps to make better use of it. Latest progress concerning with capillary number theory and its application in chemical EOR is reviewed by studying the experiments data and checking its model hypothesis. Classic Capillary Desaturation Curves (CDC) are summarized and new CDC is introduced. Typical classical CDC showed larger capillary number lead to lower residual oil saturation and when capillary number increased to a certain critical value(first critical value), the residual oil saturation could drop to a minimum value even zero. CDC shapes were different in water-wet and oil-wet media. Recovery can be improved by increasing flooding rate, though invalid and impractical, displacement phase viscosity or/and reducing oil/water interfacial tension, which are actually adopted by chemical flooding. Guided by this theory and also first critical capillary number value requirement, it lead to the pursuit of low interfacial tension to largest extent and the requirement of ultra-low interfacial tension (10-3mN/m) in surfactant screening. However, experiments data showed that residual oil saturation was not always decreasing as capillary number increased. After capillary number increased to a certain value (second critical value), the residual oil saturation may increase or decrease as capillary number increase. What was more, the final residual oil saturation was quite more than zero and this CDC was regarded as the new CDC. Experiments in heavy oil laboratory tests showed that smaller injection rate lead to higher recovery which seemed contrary to capillary theory. © Copyright 2015, Society of Petroleum Engineers.
Number of references: 13
Main heading: Number theory
Controlled terms: Crude oil - Capillarity - Oil well flooding - Floods - Enhanced recovery - Heavy oil production
Uncontrolled terms: Capillary desaturation - Capillary numbers - Chemical enhanced oil recoveries - Chemical flooding - Displacement phase - ITS applications - Residual oil saturation - Ultralow interfacial tension
Classification code: 511.1 Oil Field Production Operations - 512.1 Petroleum Deposits - 631.1 Fluid Flow, General
Numerical data indexing: Surface_Tension 1.00e-02N*m to 3.00e-03N*m
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

81. A kind of transmission-type lens using in x-ray band

Accession number: 20151100635500
Authors: Li, Yan (1); Li, Xiao-Li (1); Xu, Xiangyan (2)
Author affiliation: (1) Shool of Science, Xi'an Shiyou University, Xi'an, Shaanxi Province; 710065, China; (2) State Key Laboratory of Transient Optics and Photonics, Xi'an Institute of Optics and Precision Mechanics, Chinese Academy of Sciences, Xi'an; 710119, China
Source title: Proceedings of SPIE - The International Society for Optical Engineering
Abbreviated source title: Proc SPIE Int Soc Opt Eng
Volume: 9449
Volume title: International Conference on Photonics and Optical Engineering, icPOE 2014
Part number: 1of1
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Publication year: 2015
Article number: 944917
Language: English
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CODEN: PSISDG
ISBN-13: 9781628415650
Document type: Conference article (CA)
Conference name: International Conference on Photonics and Optical Engineering, icPOE 2014
Conference date: October 13, 2014 - October 15, 2014
Conference location: Xi'an, China
Conference code: 111356
Sponsor: Optics and Photonics Society of Singapore; Shaanxi Optical Society; Shaanxi Provincial Physical Society
Publisher: SPIE
Abstract: The negative refractive index characteristics of one-dimensional photonic crystal consisted by Fibonacci multi-layer films has been studied by numerical method. The refractive indices for two materials, which are used to construct the Fibonacci multi-layer films, are 0.920 and 0.999, respectively. The calculation result shows that, on one hand, there are several negative refractive index zones for this kind of photonic crystal even if the refractive indices are very small; on the other hand, the difference is very large for the frequency between the zones. As an example, a kind of transmission-type plano-concave lens is designed. The simulation of the electromagnetic field distribution for the lens demonstrates that the lens can focus the incoming X-ray radiation. At the same time, the calculation of the absorption strength and refractive indices for real materials shows that not only there are large differences for the absorption strength with different materials, but also the refractive indices for real materials are different in X-ray band. Obviously, the characteristics above support a kind of transmission-type lens using in X-ray.. © 2015 SPIE.
Number of references: 21
Main heading: Refractive index
Controlled terms: Films - Numerical methods - Photonic crystals - Electromagnetic fields
Uncontrolled terms: Absorption strength - Calculation results - Concave lens - Electromagnetic field distribution - Negative refractive index - One dimensional photonic crystal - Two-materials - X ray radiation
Classification code: 701 Electricity and Magnetism - 741.1 Light/Optics - 921.6 Numerical Methods
DOI: 10.1117/12.2075444
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

82. Reaction mechanisms of thioetherification for mercaptans and olefins over sulfided Mo-Ni/Al2O3 catalysts

Accession number: 20144400144294
Authors: Shen, Zhibing (1, 2); Ke, Ming (1); Yu, Pei (1); Hu, Haiqiang (1); Song, Zhaozheng (1); Jiang, Qingzhe (1)
Author affiliation: (1) State Key Laboratory, Heavy Oil Processing, China University of Petroleum, No. 18 Fuxue Road, Changping District, Beijing; 102249, China; (2) College of Chemistry and Chemical Engineering, Xi'An Shiyou University, Xi'an, Shaanxi Province; 710065, China
Corresponding author: Ke, Ming
Source title: Journal of Molecular Catalysis A: Chemical

Abbreviated source title: J. Mol. Catal. A Chem.
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Issue date: January 2015
Publication year: 2015
Pages: 120-127
Language: English
ISSN: 13811169
CODEN: JMCCF2
Document type: Journal article (JA)
Publisher: Elsevier B.V., Netherlands
Abstract: The thioetherification reaction of 1-butanethiol and 1-hexene dissolved in n-hexane was investigatedover sulfided Mo-Ni/Al2O3catalysts. The experimental results showed the catalysts have good cat-alytic performance for thioetherification reaction, but the isomerization and hydrogenation reactions of olefins over the catalysts can inhibit thioetherification reaction. As reaction temperature increases,the isomerization and hydrogenation reactions of olefins increase rapidly, however, the inhibition of thioetherification reaction also increases. The sulfur distribution and molecular structures of sulfurcompounds in the products were analyzed by the gas chromatograph with sulfur chemiluminescencedetector (GC-SCD) and the gas chromatograph/mass spectra spectrometry (GC/MS). Two possible routesof thioetherification reaction could be observed. At low temperature, the major pathway involves a directaddition of 1-butanethiol to the terminal carbon of double bond of 1-hexene. In this mechanism, the mainproduct is anti-Markovnikov adduct. At a higher temperature, the C S bond of 1-butanethiol can be sub-sequently cleaved, and the adsorbed -SH species can be formed on the catalysts. On the same time,abundant 1-hexene can be absorbed on the catalysts, as well. Therefore, the adsorbed SH species canthen recombine with adsorbed 1-hexene to form new hexyl-mercaptans, which can continue to produceanother kind of thioether (di-hexyl sulfide) with adsorbed 1-hexene. Similar with the first reaction route,the thioether of the anti-Markonikov adduct still dominates in the product. © 2014 Published by Elsevier B.V.
Number of references: 28
Main heading: Catalysts
Controlled terms: Hexane - Isomerization - Hydrogenation - Isomers - Sulfur - Sulfur compounds - Olefins - Temperature
Uncontrolled terms: Gas chromatographs - Hydrogenation reactions - Mercaptan - Ni/Al2O3 catalyst - Reaction mechanism - Reaction temperature - Sulfur distributions - Thioetherification
Classification code: 641.1 Thermodynamics - 802.2 Chemical Reactions - 803 Chemical Agents and Basic Industrial Chemicals - 804 Chemical Products Generally - 804.1 Organic Compounds
DOI: 10.1016/j.molcata.2014.09.034
Funding Details: Number: 21276276, Acronym: NSFC, Sponsor: National Natural Science Foundation of China;
Funding text: Financial support by the National Natural Science Foundation of China (Granted No. 21276276) is gratefully acknowledged.
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

83. Stress corrosion cracking behavior of X80 pipeline steel with design factor of 0.8 in near-neutral Ph value solutions

Accession number: 20150700509713
Authors: Yang, Dong-Ping (1); Xu, Cong-Min (1); Luo, Jin-Heng (2); Wang, Ke (2); Li, Hui-Hui (1)
Author affiliation: (1) Key Laboratory of Materials Processing Engineering, College of Materials Science and Engineering, Xi'an Shiyou University, Xi'an; 710065, China; (2) Key Laboratory for Mechanical and Environmental Behavior of Tubular Goods, CNPC Tubular Goods Research Institute, Xi'an; 710065, China
Corresponding author: Xu, Cong-Min(cmxu@xsyu.edu.cn)
Source title: Cailiao Gongcheng/Journal of Materials Engineering
Abbreviated source title: Cailiao Gongcheng
Volume: 43
Issue: 1
Issue date: January 1, 2015
Publication year: 2015
Pages: 89-95
Language: Chinese
ISSN: 10014381

CODEN: CAGOEW
Document type: Journal article (JA)
Publisher: Beijing Institute of Aeronautical Materials (BIAM)
Abstract: Stress corrosion cracking (SCC) behavior and sensitivity of X80 pipeline steel and weld joint in NS4 solutions were investigated using slow strain rate tension (SSRT) test. The results show that X80 pipeline steel and weld joint appear mainly plastic damage. The plastic damage of weld joint is higher than that of base metal. The fracture mode of X80 pipeline steel and weld joint exhibits typical ductile fracture in the air, and the transgranular SCC in NS4 solution. Both base metal and weld joint fracture's middle areas of X80 pipeline steel exhibit more obvious brittle fracture feature than that of the edge area in NS4 solutions. The corrosion mechanism of X80 steel is anodic dissolution (AD) above -749.86 mV, and the mixed mechanism of AD and hydrogen embrittlement (HE) between -749.86- -839.19 mV, and HE mechanism below-839.19 mV.
Number of references: 20
Main heading: Stress corrosion cracking
Controlled terms: Ductile fracture - Pipelines - Cracks - Hydrogen embrittlement - Steel pipe - Brittle fracture - Pipeline corrosion - Strain rate - Steel corrosion - Welds - Residual stresses
Uncontrolled terms: Anodic dissolution - Corrosion mechanisms - Mixed mechanisms - Near-neutral pH - Plastic damage - Slow Strain Rate Tension (SSRT) - Slow strain rates - X80 pipeline steels
Classification code: 531.1 Metallurgy - 538.2 Welding - 539.1 Metals Corrosion - 545.3 Steel - 619.1 Pipe, Piping and Pipelines
Numerical data indexing: Voltage -7.50e-01V
DOI: 10.11868/j.issn.1001-4381.2015.01.016
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

84. Variable selection for nonlinear soft sensor based on false nearest neighbors in KICA space (*Open Access*)

Accession number: 20151600746235
Authors: Su, Yingying (1, 2); Li, Taifu (1); Yi, Jun (1); Hu, Wenjin (1); Liao, Zhiqiang (3); Xu, Min (1)
Author affiliation: (1) School of Electrical and Information Engineering, Chongqing University of Science and Technology, Chongqing; 401331, China; (2) College of Automation, Chongqing University, Chongqing; 400040, China; (3) School of Electronic Engineering, Xi'an Shiyou University, Xi'an; 710065, China
Corresponding author: Li, Taifu(litaifuemail@qq.com)
Source title: Jixie Gongcheng Xuebao/Journal of Mechanical Engineering
Abbreviated source title: Jixie Gongcheng Xuebao
Volume: 51
Issue: 4
Issue date: February 20, 2015
Publication year: 2015
Pages: 15-21
Language: Chinese
ISSN: 05776686
CODEN: CHHKA2
Document type: Journal article (JA)
Publisher: Chinese Mechanical Engineering Society
Abstract: Selection of secondary variables is an effective way to reduce redundant information and to improve efficiency in nonlinear soft sensor. A novel method based on kernel independent component analysis (KICA) and false nearest neighbors method (FNN) is proposed on selecting the most suitable secondary process variables. The first step is to convert the non-linear operating variables into the linear space with kernel method. One the basis, they are projected into the independent ones with KICA transformations. In order to compare the different impacts on the operating variables, each original variable is eliminated orderly from original datasets with FNN in KICA subspace. In this way, it is possible to trace the important cause for the prediction. The result shows its validity with the verification in hydrocyanic acid (HCN) process industry.
Number of references: 17
Main heading: Independent component analysis
Controlled terms: Nonlinear analysis

Uncontrolled terms: False nearest neighbor - Kernel independent component analysis - Operating variables - Process industries - Secondary process - Secondary variables - Soft sensors - Variable selection
Classification code: 961 Systems Science
DOI: 10.3901/JME.2015.04.015
Compendex references: YES
Open Access type(s): All Open Access, Bronze
Database: Compendex
Data Provider: Engineering Village

85. A long-term frequency-stabilized erbium-fiber-laser-based optical frequency comb with an intra-cavity electro-optic modulator (*Open Access*)

Accession number: 20152300914667
Authors: Zhang, Yan-Yan (1); Yan, Lu-Lu (1); Zhao, Wen-Yu (1, 2); Meng, Sen (1, 3); Fan, Song-Tao (1, 2); Zhang, Long (1); Guo, Wen-Ge (3); Zhang, Shou-Gang (1); Jiang, Hai-Feng (1)
Author affiliation: (1) Key Laboratory of Time and Frequency Standards, National Time Service Center, Xi'an; 710600, China; (2) University of the Chinese Academy of Sciences, Beijing; 100049, China; (3) School of Science, Xi'an Shiyou University, Xi'an; 710065, China
Corresponding author: Jiang, Hai-Feng
Source title: Chinese Physics B
Abbreviated source title: Chin. Phys.
Volume: 24
Issue: 6
Issue date: June 1, 2015
Publication year: 2015
Article number: 064209
Language: English
ISSN: 16741056
E-ISSN: 20583834
Document type: Journal article (JA)
Publisher: IOP Publishing Ltd
Abstract: We demonstrate an optical frequency comb based on an erbium-doped-fiber femtosecond laser with the nonlinear polarization evolution scheme. The repetition rate of the laser is about 209 MHz. By controlling an intra-cavity electro-optic modulator and a piezo-transducer, the repetition rate can be stabilized with a high-bandwidth servo in a frequency range of 3 kHz, enabling long-term repetition rate phase-locking. The in-loop frequency stability of repetition rate is about 1.6×10-13 in an integration time of 1 s, limited by the measurement system; and it is inversely proportional to integration time in the short term. Furthermore, using a common path f-2f interferometer, the carrier envelope offset frequency of the comb is obtained with a signal-to-noise ratio of 40 dB in a 3-MHz resolution bandwidth. Stabilized carrier envelope offset frequency exhibits a deviation of 0.6 mHz in an integration time of 1 s. © 2015 Chinese Physical Society and IOP Publishing Ltd.
Number of references: 26
Main heading: Fiber lasers
Controlled terms: Integration - Optical materials - Erbium - Locks (fasteners) - Bandwidth - Natural frequencies - Signal to noise ratio - Laser mode locking - Frequency stability - Light modulators
Uncontrolled terms: Carrier envelope offset frequencies - Electro-optic modulators - Erbium doped fibers - Frequency instabilities - Frequency stabilization - Nonlinear polarization evolution - Optical frequency combs - Resolution bandwidth
Classification code: 547.2 Rare Earth Metals - 716.1 Information Theory and Signal Processing - 741.3 Optical Devices and Systems - 744.1 Lasers, General - 744.4 Solid State Lasers - 921.2 Calculus - 961 Systems Science
Numerical data indexing: Decibel 4.00e+01dB, Frequency 2.09e+08Hz, Frequency 3.00e+03Hz, Frequency 3.00e+06Hz, Frequency 6.00e-04Hz, Time 1.00e+00s
DOI: 10.1088/1674-1056/24/6/064209
Funding Details: Number: 61127901,91336101, Acronym: -, Sponsor: -;
Compendex references: YES
Open Access type(s): All Open Access, Green
Database: Compendex
Data Provider: Engineering Village

86. Reaction mechanisms of thioetherification for mercaptans and olefins over sulfided Mo-Ni/Al2O3 catalysts

Accession number: 20144800245462
Authors: Shen, Zhibing (1, 2); Ke, Ming (1); Yu, Pei (1); Hu, Haiqiang (1); Song, Zhaozheng (1); Jiang, Qingzhe (1)
Author affiliation: (1) State Key Laboratory of Heavy Oil Processing, China University of Petroleum, No. 18 Fuxue Road Changping District, Beijing; 102249, China; (2) College of Chemistry and Chemical Engineering, Xi'An Shiyou University, Xi'an, Shaanxi Province; 710065, China
Corresponding author: Ke, Ming
Source title: Journal of Molecular Catalysis A: Chemical
Abbreviated source title: J. Mol. Catal. A Chem.
Volume: 396
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Publication year: 2015
Pages: 120-127
Language: English
ISSN: 13811169
CODEN: JMCCF2
Document type: Journal article (JA)
Publisher: Elsevier B.V., Netherlands
Abstract: The thioetherification reaction of 1-butanethiol and 1-hexene dissolved in n-hexane was investigated over sulfided Mo-Ni/Al2O3 catalysts. The experimental results showed the catalysts have good catalytic performance for thioetherification reaction, but the isomerization and hydrogenation reactions of olefins over the catalysts can inhibit thioetherification reaction. As reaction temperature increases, the isomerization and hydrogenation reactions of olefins increase rapidly, however, the inhibition of thioetherification reaction also increases. The sulfur distribution and molecular structures of sulfur compounds in the products were analyzed by the gas chromatograph with sulfur chemiluminescence detector (GC-SCD) and the gas chromatograph/mass spectra spectrometry (GC/MS). Two possible routes of thioetherification reaction could be observed. At low temperature, the major pathway involves a direct addition of 1-butanethiol to the terminal carbon of double bond of 1-hexene. In this mechanism, the main product is anti-Markovnikov adduct. At a higher temperature, the C-S bond of 1-butanethiol can be subsequently cleaved, and the adsorbed -SH species can be formed on the catalysts. On the same time, abundant 1-hexene can be absorbed on the catalysts, as well. Therefore, the adsorbed SH species can then recombine with adsorbed 1-hexene to form new hexyl-mercaptans, which can continue to produce another kind of thioether (di-hexyl sulfide) with adsorbed 1-hexene. Similar with the first reaction route, the thioether of the anti-Markonikov adduct still dominates in the product. © 2014 Published by Elsevier B.V.
Number of references: 28
Main heading: Catalysts
Controlled terms: Isomers - Olefins - Temperature - Isomerization - Sulfur compounds - Chemical bonds - Hexane - Hydrogenation
Uncontrolled terms: Catalytic performance - Hydrogenation reactions - Mercaptan - Ni/Al2O3 catalyst - Reaction temperature - Sulfur chemiluminescence detectors - Sulfur distributions - Thioetherification
Classification code: 641.1 Thermodynamics - 801.4 Physical Chemistry - 802.2 Chemical Reactions - 803 Chemical Agents and Basic Industrial Chemicals - 804 Chemical Products Generally - 804.1 Organic Compounds
DOI: 10.1016/j.molcata.2014.09.034
Funding Details: Number: 21276276, Acronym: NSFC, Sponsor: National Natural Science Foundation of China;
Funding text: Financial support by the National Natural Science Foundation of China (Granted No. 21276276) is gratefully acknowledged.
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

87. Reaction mechanisms of thioetherification for mercaptans and olefins over sulfided Mo-Ni/Al2O3 catalysts

Accession number: 20144800244854
Authors: Shen, Zhibing (1, 2); Ke, Ming (1); Yu, Pei (1); Hu, Haiqiang (1); Song, Zhaozheng (1); Jiang, Qingzhe (1)
Author affiliation: (1) State Key Laboratory of Heavy Oil Processing, China University of Petroleum, No. 18 Fuxue Road, Changping District, Beijing; 102249, China; (2) College of Chemistry and Chemical Engineering, Xi'An Shiyou University, Xi'an, Shaanxi Province; 710065, China
Corresponding author: Ke, Ming

Source title: Journal of Molecular Catalysis A: Chemical
Abbreviated source title: J. Mol. Catal. A Chem.
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Language: English
ISSN: 13811169
CODEN: JMCCF2
Document type: Journal article (JA)
Publisher: Elsevier B.V., Netherlands
Abstract: The thioetherification reaction of 1-butanethiol and 1-hexene dissolved in n-hexane was investigated over sulfided Mo-Ni/Al2O3 catalysts. The experimental results showed the catalysts have good catalytic performance for thioetherification reaction, but the isomerization and hydrogenation reactions of olefins over the catalysts can inhibit thioetherification reaction. As reaction temperature increases, the isomerization and hydrogenation reactions of olefins increase rapidly, however, the inhibition of thioetherification reaction also increases. The sulfur distribution and molecular structures of sulfur compounds in the products were analyzed by the gas chromatograph with sulfur chemiluminescence detector (GC-SCD) and the gas chromatograph/mass spectra spectrometry (GC/MS). Two possible routes of thioetherification reaction could be observed. At low temperature, the major pathway involves a direct addition of 1-butanethiol to the terminal carbon of double bond of 1-hexene. In this mechanism, the main product is anti-Markovnikov adduct. At a higher temperature, the CS bond of 1-butanethiol can be subsequently cleaved, and the adsorbed -SH species can be formed on the catalysts. On the same time, abundant 1-hexene can be absorbed on the catalysts, as well. Therefore, the adsorbed SH species can then recombine with adsorbed 1-hexene to form new hexyl-mercaptans, which can continue to produce another kind of thioether (di-hexyl sulfide) with adsorbed 1-hexene. Similar with the first reaction route, the thioether of the anti-Markonikov adduct still dominates in the product. © 2014 Published by Elsevier B.V.
Number of references: 28
Main heading: Catalysts
Controlled terms: Hydrogenation - Hexane - Isomerization - Isomers - Olefins - Temperature - Sulfur compounds
Uncontrolled terms: Catalytic performance - Hydrogenation reactions - Mercaptan - Ni/Al2O3 catalyst - Reaction temperature - Sulfur chemiluminescence detectors - Sulfur distributions - Thioetherification
Classification code: 641.1 Thermodynamics - 802.2 Chemical Reactions - 803 Chemical Agents and Basic Industrial Chemicals - 804 Chemical Products Generally - 804.1 Organic Compounds
DOI: 10.1016/j.molcata.2014.09.034
Funding Details: Number: 21276276, Acronym: NSFC, Sponsor: National Natural Science Foundation of China;
Funding text: Financial support by the National Natural Science Foundation of China (Granted No. 21276276) is gratefully acknowledged.
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

88. A Very Stable Nickel Broken-Chain Complex with Isolated Ni-Ni Interactions

Accession number: 20231713959819
Authors: Wang, Wen-Zhen (1); Zhao, Dan (1); Tsao, Ting-Bin (2); Ismayilov, Rayyat (2, 3); Lee, Gene-Hsiang (2); Peng, Shie-Ming (2, 3)
Author affiliation: (1) School of Chemistry and Chemical Engineering, Xi'An Shiyou University, 18 Dian-zi-er Road, Xi'an, Shaanxi, China; (2) Department of Chemistry, National Taiwan University, Taipei; 10617, Taiwan; (3) Institute of Chemistry, Academia Sinica, Taipei; 11529, Taiwan
Corresponding author: Wang, Wen-Zhen(wzwang@xsyu.edu.cn)
Source title: European Journal of Inorganic Chemistry
Abbreviated source title: Eur. J. Inorg. Chem.
Volume: 2015
Issue: 26
Issue date: September 1, 2015
Publication year: 2015
Pages: 4329-4334
Language: English
ISSN: 14341948

E-ISSN: 10990682
CODEN: EJICFO
Document type: Journal article (JA)
Publisher: Wiley-VCH Verlag
Abstract: Two defective nickel-extended metal-atom chain (EMAC) complexes were synthesized from a pyrazine- and naphthyridine-containing ligand and structurally characterized. The chains consist of dinickel and trinickel units with one absent metal center, in spite of which the complexes are very stable. The magnetic interaction between the two terminal, high-spin nickel atoms is very weak with a spin exchange of J = -0.62(3) cm-1. An electrochemical study on one of the defective nickel EMAC complexes showed high resistance to both oxidation and reduction, with one reduction at E1/2 = -0.76 V and no observable oxidation events in the range from -0.9 V to +1.20 V. © 2015 WILEY-VCH Verlag GmbH and Co. KGaA, Weinheim.
Number of references: 33
DOI: 10.1002/ejic.201500674
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

89. Effects of fractal surface roughness and lithology on single and multiphase flow in a single fracture: An experimental investigation

Accession number: 20144600200660
Authors: Babadagli, Tayfun (1); Ren, Xiaojuan (2); Develi, Kayhan (3)
Author affiliation: (1) University of Alberta, Dept. of Civil and Environmental Engineering School of Petroleum Engineering, Edmonton; AB, Canada; (2) Xi'an Shiyou University, Xi'an, China; (3) Istanbul Technical University, Department of Petroleum and Natural Gas Engineering, Maslak, Istanbul, Turkey
Corresponding author: Babadagli, Tayfun
Source title: International Journal of Multiphase Flow
Abbreviated source title: Int. J. Multiph. Flow
Volume: 68
Issue date: January 01, 2015
Publication year: 2015
Pages: 40-58
Language: English
ISSN: 03019322
Document type: Journal article (JA)
Publisher: Elsevier Ltd
Abstract: This paper presents qualitative and quantitative analysis of single and multiphase flow in a single fracture based on experimental results and demonstrates relationships between the roughness and fluid movement and distribution. Experiments were conducted on seven perfectly-matching and tightly-closed rough model fractures reproduced from the single fractures of lithologically different seven rock blocks that were jointed artificially through laboratory indirect tensile tests. Transparent upper and opaque lower walls of these models facilitated the visualization of the flow experiments. Rough surfaces of the model fractures were first digitized. Then, using the gathered data in variogram analysis, surface roughness was quantified by fractal dimension. Another roughness quantification parameter was also handled as the ratio between total fracture surface area and planar surface area. Experimental measurements of flow were quantitatively correlated to surface roughness under different normal loading (aperture) conditions. Also, constant rate immiscible displacement experiments were performed to assess the roughness effect represented by seven different lithologies and wettability effect controlled by the material used in manufacturing the fracture samples on the residual saturation development. © 2014 Elsevier Ltd.
Number of references: 85
Main heading: Fracture
Controlled terms: Surface roughness - Tensile testing - Lithology - Multiphase flow - Fractal dimension
Uncontrolled terms: Experimental investigations - Fracture roughness - Immiscible displacement - Qualitative and quantitative analysis - Quantification parameters - Single fracture - Single-phase flow - Unsteady state
Classification code: 481.1 Geology - 631.1 Fluid Flow, General - 921 Mathematics - 931.2 Physical Properties of Gases, Liquids and Solids - 951 Materials Science
DOI: 10.1016/j.ijmultiphaseflow.2014.10.004
Funding Details: Number: -, Acronym: NSERC, Sponsor: Natural Sciences and Engineering Research Council of Canada; Number: -, Acronym: -, Sponsor: Schlumberger Foundation; Number: RES0011227, Acronym: -, Sponsor: -;

Number: -, Acronym: -, Sponsor: Suncor Energy Incorporated; Number: -, Acronym: TÃ£BITAK, Sponsor: TÃ¼rkiye Bilimsel ve Teknolojik AraÅŸtirma Kurumu;
Funding text: This research was conducted under the first author's (TB) NSERC Industrial Research Chair in Unconventional Oil Recovery (industrial partners are Schlumberger, CNRL, SUNCOR, Petrobank, Sherritt Oil, APEX Eng., PEMEX, Statoil, and Husky Energy) and an NSERC Discovery Grant (No: RES0011227). The third author (KD) is also thankful to the Scientific and Technological Research Council of Turkey (TÜBTAK) for his postdoctoral scholarship through the BIDEP program. We gratefully acknowledge these supports.
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

90. QSPR study on the photolysis half-life of PCDD/Fs adsorbed on spruce (Picea abies (L.) Karst.) needle surfaces under sunlight irradiation by using a molecular distance-edge vector index

Accession number: 20150300427608
Authors: Jiao, Long (1, 2); Wang, Xiaofei (1); Bing, Shan (1); Xue, Zhiwei (3); Li, Hua (2)
Author affiliation: (1) College of Chemistry and Chemical Engineering, Xi'an Shiyou University, Xi'an; 710065, China; (2) College of Chemistry and Materials Science, Northwest University, Xi'an; 710069, China; (3) No. 203 Research Institute of Nuclear Industry, Xian yang; 712000, China
Corresponding author: Jiao, Long
Source title: RSC Advances
Abbreviated source title: RSC Adv.
Volume: 5
Issue: 9
Issue date: 2015
Publication year: 2015
Pages: 6617-6624
Language: English
E-ISSN: 20462069
CODEN: RSCACL
Document type: Journal article (JA)
Publisher: Royal Society of Chemistry
Abstract: The quantitative structure property relationship (QSPR) for the photolysis half-life (t1/2) of polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans (PCDD/Fs) on spruce (Picea abies (L.) Karst.) needle surfaces under sunlight irradiation was investigated. Molecular distance-edge vector (MDEV) index was used as the structural descriptor of PCDD/Fs. The quantitative relationship between the MDEV index and log t1/2 was modeled by using multivariable linear regression (MLR) and artificial neural network (ANN) respectively. Leave-one-out cross validation and external validation were carried out to assess the prediction ability of the developed models. For the MLR method, the prediction root mean square relative error (RMSRE) of leave-one-out cross validation and external validation is 3.47 and 4.25 respectively. For the ANN method, the prediction RMSRE of leave-one-out cross validation and external validation is 2.68 and 3.52 respectively. It is demonstrated that there is a quantitative relationship between the MDEV index and log t1/2 of PCDD/Fs. Both MLR and ANN are practical for modeling this relationship. The developed MLR model and ANN model can be used to predict the log t1/2 of PCDD/Fs. Thus, the log t1/2 of each PCDD/F congener was predicted by using the developed models. © The Royal Society of Chemistry 2015.
Number of references: 39
Main heading: Multiple linear regression
Controlled terms: Plants (botany) - Irradiation - Needles - Forecasting - Neural networks - Photolysis
Uncontrolled terms: Leave-one-out cross validations - Multi-variable linear regression - Picea Abies (L.) Karst - Polychlorinated dibenzo- p - dioxins - Polychlorinated dibenzofurans - Quantitative structure property relationships - Structural descriptor - Sunlight irradiation
Classification code: 802.2 Chemical Reactions - 922.2 Mathematical Statistics
DOI: 10.1039/c4ra14178d
Funding Details: Number: 21305108, Acronym: NSFC, Sponsor: National Natural Science Foundation of China; Number: 21375105, Acronym: NSFC, Sponsor: National Natural Science Foundation of China;
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

91. A local approach to rule induction in multi-scale decision tables

Accession number: 20153301176596
Authors: She, Yanhong (1); Li, Jinhai (2); Yang, Hailong (3)
Author affiliation: (1) College of Science, Xi'An Shiyou University, Xi'an; 710065, China; (2) Faculty of Science, Kunming University of Science and Technology, Kunming, Yunnan; 650500, China; (3) College of Mathematics and Information Science, Shaanxi Normal University, Xi'an, Shaanxi; 710062, China
Corresponding author: She, Yanhong(yanhongshe@gmail.com)
Source title: Knowledge-Based Systems
Abbreviated source title: Knowl Based Syst
Volume: 89
Issue date: November 2015
Publication year: 2015
Pages: 398-410
Language: English
ISSN: 09507051
CODEN: KNSYET
Document type: Journal article (JA)
Publisher: Elsevier B.V., Netherlands
Abstract: In order to represent hierarchical structure of data measured at different levels of granularities, the notion of multi-scale information table has been developed from the perspective of granular computation. In the present study, we mainly address the issue of rule induction in multi-scale decision tables. By considering independently three different types of complete multi-scale decision tables, we propose a local approach to rule induction. Compared with the existing literature, the selection of the optical level of scale and attribute reduction are both performed in a pointwise manner instead of the global one. Precisely speaking, the optical level of scale of any element relative to the decision attribute is firstly defined, then by removing superfluous attribute-value pairs in each decision rule, a set of simplified rules is derived. Lastly, a rule reduction is defined and the final set of decision rules is thus obtained. © 2015 Elsevier B.V. All rights reserved.
Number of references: 33
Main heading: Decision tables
Controlled terms: Rough set theory - Computation theory
Uncontrolled terms: Attribute reduction - Attribute-value pairs - Decision attribute - Decision logic - Decision rules - Granular computation - Hierarchical structures - Multi-scale informations
Classification code: 721.1 Computer Theory, Includes Formal Logic, Automata Theory, Switching Theory, Programming Theory - 723.1 Computer Programming - 921.4 Combinatorial Mathematics, Includes Graph Theory, Set Theory
DOI: 10.1016/j.knosys.2015.07.020
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

92. Theoretical study of regioselectivity in the synthesis of spiro [pyrrolidine-2,3#-oxindole] compounds by [3+2] cycloaddition

Accession number: 20143600052254
Authors: Chen, Gang (1, 2); Yang, Jing (2); Gao, Suo (2); Zhang, Yu (2); Hao, Xiaojiang (2)
Author affiliation: (1) College of Chemistry and Chemical Engineering, Xi'An Shiyou University, Xi'an, Shannxi; 710065, China; (2) State Key Laboratory of Phytochemistry and Plant Resources in West China, Kunming Institute of Botany, Chinese Academy of Sciences, Kunming; 650201, China
Corresponding author: Hao, Xiaojiang
Source title: Research on Chemical Intermediates
Abbreviated source title: Res Chem Intermed
Volume: 41
Issue: 7
Issue date: July 1, 2015
Publication year: 2015
Pages: 4987-4996
Language: English
ISSN: 09226168

E-ISSN: 15685675
CODEN: RCINEE
Document type: Journal article (JA)
Publisher: Kluwer Academic Publishers
Abstract: Study of the structures of a series of spiro [pyrrolidine-2,3#-oxindole] derivatives synthesized by [3+2] cycloaddition reaction of isatin, α–amino acids, and β–substituted phenylethylenes revealed the regioselectivity of the reaction was completely novel. The reaction mechanism for [3+2] cycloaddition of oxindole azomethine ylide and the β–substituted phenylethylenes was calculated by use of density functional theory with the B3LYP functional and different basis sets. The results show that the regioselectivity of this [3+2] cycloaddition reaction is kinetically controlled, which agrees with experimental results. © 2014 Springer Science+Business Media Dordrecht.
Number of references: 11
Main heading: Regioselectivity
Controlled terms: Cycloaddition - Synthesis (chemical) - Density functional theory
Uncontrolled terms: Alpha-amino acids - Azomethine ylides - Kinetically controlled - Reaction mechanism - Spiro-oxindole - Theoretical - Theoretical study - [3+2]-cycloaddition
Classification code: 802.2 Chemical Reactions - 922.1 Probability Theory - 931.3 Atomic and Molecular Physics - 931.4 Quantum Theory; Quantum Mechanics
DOI: 10.1007/s11164-014-1582-0
Funding Details: Number: 2009CB940900, Acronym: MOST, Sponsor: Ministry of Science and Technology;
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

93. Classification of different types of slag samples by laser-induced breakdown spectroscopy (LIBS) coupled with random forest based on variable importance (VIRF)

Accession number: 20154401477533
Authors: Tang, Hongsheng (1); Zhang, Tianlong (1); Yang, Xiaofeng (2); Li, Hua (1, 3)
Author affiliation: (1) Institute of Analytical Science, College of Chemistry and Material Science, Northwest University, Xi'an; 710069, China; (2) College of Chemistry and Material Science, Northwest University, Xi'an; 710069, China; (3) College of Chemistry and Chemical Engineering, Xi'An Shiyou University, Xi'an; 710065, China
Corresponding author: Li, Hua(huali@nwu.edu.cn)
Source title: Analytical Methods
Abbreviated source title: Anal. Methods
Volume: 7
Issue: 21
Issue date: November 7, 2015
Publication year: 2015
Pages: 9171-9176
Language: English
ISSN: 17599660
E-ISSN: 17599679
Document type: Journal article (JA)
Publisher: Royal Society of Chemistry
Abstract: A laser induced breakdown spectroscopy (LIBS) technique coupled with random forest based on variable importance (VIRF) was proposed to perform the classification analysis of slag samples. Three types of slag samples (open-hearth furnace slag, converter slag and high titanium slag) were identified and classified by a random forest (RF) method with different pre-processing methods (normalized with maximum integrated intensity, first-order derivative and second-order derivative) and different input variables (200-300, 200-400, 200-500, 200-600, 200-700 and 200-800 nm), and the importance of the input variable was employed to improve the classification performance of the RF model for slag samples. Averaged OOB (out-of-bag) error, sensitivity, specificity and accuracy were calculated to evaluate the classification performance of the RF model for slags. Normalized by maximum integrated intensity LIBS spectra (200-500 nm) of slag samples were used as the input variable to construct the PLS-DA, SVM, RF and VIRF models for the classification analysis of slags. The VIRF model shows a better classification performance than the other three models. The LIBS technique coupled with RF perhaps is a promising approach to achieve the online analysis and process control of slag and even industrial waste recycling. © 2015 The Royal Society of Chemistry.
Number of references: 29
Main heading: Slags
Controlled terms: Decision trees - Atomic emission spectroscopy - Laser induced breakdown spectroscopy

Uncontrolled terms: Classification analysis - Classification performance - First order derivatives - Integrated intensities - Laserinduced breakdown spectroscopy (LIBS) - Pre-processing method - Second order derivatives - Variable importances
Classification code: 921.4 Combinatorial Mathematics, Includes Graph Theory, Set Theory - 931.1 Mechanics - 961 Systems Science
Numerical data indexing: Size 2.00e-07m to 5.00e-07m, Size 2.00e-07m to 8.00e-07m
DOI: 10.1039/c5ay02208h
Funding Details: Number: 21375105, Acronym: NSFC, Sponsor: National Natural Science Foundation of China;
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

94. An improved optimization localization algorithm in WSNs

Accession number: 20152500946808
Authors: Zhang, Ya-Ming (1, 2); Shi, Hao-Shan (2); Chen, Ke-Song (3); Cheng, Wei (2)
Author affiliation: (1) School of Electronics Engineering, Xi'an Shiyou University, Xi'an; 710065, China; (2) School of Electronics and Information, Northwestern Polytechnical University, Xi'an; 710129, China; (3) School of Electronic Engineering, University of Electronic Science and Technology of China, Chengdu; 611731, China
Source title: Dianzi Keji Daxue Xuebao/Journal of the University of Electronic Science and Technology of China
Abbreviated source title: Dianzi Keji Diaxue Xuebao
Volume: 44
Issue: 3
Issue date: May 30, 2015
Publication year: 2015
Pages: 357-362
Language: Chinese
ISSN: 10010548
CODEN: DKDAEM
Document type: Journal article (JA)
Publisher: Univ. of Electronic Science and Technology of China
Abstract: Node localization of wireless sensor networks (WSNs) is a key problem in the practical applications. To improve the localization accuracy and reduce the cost, an improved localization algorithm based on particle swarm optimization (PSO) is proposed. In the algorithm, the idea of proactive estimate is introduced to estimate the area of nodes, reduce and restrict the solution space, so as to quicken the search speed of particles, and then the idea of competition evolution and adaptive weighting are used to enhance the global and local search ability when accelerating convergence speed. Simulation results show that, compared with other similar methods, the proposed algorithm can make more effective use of anchor node information, reduce the cost of network, and increase positioning accuracy while significantly reducing the calculation amount. Moreover the algorithm shows robust for communication ranging error. ©, 2015, Univ. of Electronic Science and Technology of China. All right reserved.
Number of references: 19
Main heading: Particle swarm optimization (PSO)
Controlled terms: Cost reduction - Sensor nodes
Uncontrolled terms: Adaptive weighting - Convergence speed - Localization - Localization accuracy - Localization algorithm - Node localization - Positioning accuracy - Wireless sensor network (WSNs)
Classification code: 716.3 Radio Systems and Equipment - 722 Computer Systems and Equipment - 723 Computer Software, Data Handling and Applications - 921.5 Optimization Techniques
DOI: 10.3969/j.issn.1001-0548.2015.03.007
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

95. Electronic structures of double-walled armchair SiC nanotube under transverse electric fields

Accession number: 20144100090556
Authors: Song, Jiuxu (1, 2); Yang, Yintang (2); Liu, Hongxia (3); Zhang, Zhiyong (4)

Author affiliation: (1) School of Electronic Engineering, Xi'An Shiyou University, Xi'an; 710065, China; (2) School of Microelectronics, Xidian University, Xi'an; 710071, China; (3) Xi'An Institute of Microelectronic Technology, Xi'an; 710075, China; (4) Information Science and Technology Institution, Northwest University, Xi'an; 710127, China
Corresponding author: Song, Jiuxu
Source title: Computational Materials Science
Abbreviated source title: Comput Mater Sci
Volume: 96
Issue: PA
Issue date: January 2015
Publication year: 2015
Pages: 28-32
Language: English
ISSN: 09270256
CODEN: CMMSEM
Document type: Journal article (JA)
Publisher: Elsevier B.V., Netherlands
Abstract: By using first-principle calculations based on density functional theory (DFT), the electronic structures of a double-walled armchair (5,5) (9,9) SiC nanotube (SiCNT) under transverse electric fields are investigated. The band gap of the SiCNT has a decreasing tendency as increasing the intensity of the applied electric field. The mechanism of narrowing in the band gap of the SiCNT is the charge redistribution caused by the electric field. Furthermore, an empirical model for the dependence of the band gap on the electric field is proposed. These results are meaningful for investigations on SiCNTs electronic devices.
Number of references: 20
Main heading: Electronic structure
Controlled terms: Nanotubes - Yarn - Density functional theory - Electric fields - Silicon carbide - Energy gap
Uncontrolled terms: Charge redistribution - Double-walled - Electronic device - Empirical model - First principle calculations - SiC nanotubes - Silicon carbide nanotubes - Transverse electric field
Classification code: 701.1 Electricity: Basic Concepts and Phenomena - 761 Nanotechnology - 804.2 Inorganic Compounds - 819.4 Fiber Products - 922.1 Probability Theory - 931.3 Atomic and Molecular Physics - 931.4 Quantum Theory; Quantum Mechanics - 933.1 Crystalline Solids
DOI: 10.1016/j.commatsci.2014.08.039
Funding Details: Number: 2010JK775, Acronym: -, Sponsor: -;
Funding text: This work supported by the fund of Shaanxi provincial educational department (No. 2010JK775).
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

96. Study on a fiber Bragg grating accelerometer based on compliant cylinder

Accession number: 20154801610281
Authors: Zhang, Yunshan (1); Qiao, Xueguang (1, 2); Liu, Qinpeng (1); Yu, Dakuan (1); Gao, Hong (1, 2); Shao, Min (1); Wang, Xiangyu (1)
Author affiliation: (1) Xi'An Shiyou University, Ministry of Education Key Laboratory on Photoelectric Oil-gas Logging and Detecting, Dianzi 2nd Road Yanta District, Xi'an; 710065, China; (2) Department of Physics, Northwest University, No. 229, Taibai Road Beilin District, Xi'an; 710069, China
Corresponding author: Zhang, Yunshan(yunshanzhangedu@163.com)
Source title: Optical Fiber Technology
Abbreviated source title: Opt. Fiber Technol.
Volume: 26
Issue date: December 2015
Publication year: 2015
Pages: 229-233
Language: English
ISSN: 10685200
CODEN: OFTEFV
Document type: Journal article (JA)
Publisher: Academic Press Inc.
Abstract: A fiber Bragg grating (FBG) accelerometer based on a compliant cylinder is proposed and experimentally demonstrated in this paper. The accelerometer contains four parts, compliant cylinder, FBG, inertial mass, shell. In this design, the FBG is placed along the axis of the compliant cylinder, the material of the compliant cylinder is

two-component vulcanized silicone rubber. The principle of the FBG accelerometer was analyzed theoretically. The amplitude-frequency responsivity, linear response and temperature characteristics of the sensor were studied by experiment. Experimental results show that the sensor has a broad flat frequency range from 30 to 300 Hz, and the sensitivity of the accelerometer is 42.7 pm/G with a linearity of 0.999. The applicable temperature range of the acceleration sensor at least more than 150.0 °C, and the dynamic range is 76 dB, making it as a good candidate for the downhole seismic signal measurement. © 2015 Elsevier Inc.
Number of references: 22
Main heading: Accelerometers
Controlled terms: Fiber Bragg gratings - Cylinders (shapes) - Silicones
Uncontrolled terms: Acceleration sensors - Amplitude frequency - Compliant cylinder - Dynamic range - Fiber bragg grating accelerometer - Frequency ranges - Temperature characteristic - Temperature range
Classification code: 815.1.1 Organic Polymers - 943.1 Mechanical Instruments
Numerical data indexing: Decibel 7.60e+01dB, Frequency 3.00e+01Hz to 3.00e+02Hz, Temperature 4.23e+02K
DOI: 10.1016/j.yofte.2015.09.011
Funding Details: Number: 2014B-4012, Acronym: -, Sponsor: -; Number: 2014QN005, Acronym: -, Sponsor: -; Number: 60727004,61077006,61077060, Acronym: NSFC, Sponsor: National Natural Science Foundation of China; Number: 14JK1580, Acronym: -, Sponsor: Scientific Research Plan Projects of Shaanxi Education Department;
Funding text: This work is supported by the National Natural Science Foundation of China (Nos. 61077006 , 60727004 , 61077060), the China National Petroleum Corporation Science and Technology Development Projects (2014B-4012), the Youth Science and Technology Innovation Fund of Xi’an Shiyou University (Grant No. 2014QN005), and the Science Research Plan Projects of Shaanxi Education Department under Grant No. 14JK1580 .
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

97. Geochemical characteristics and genesis of natural gas in Jiannan gas field, the western mid-Yangtze area

Accession number: 20154801612087
Authors: Li, Airong (1); Li, Jinghong (2); Zhang, Jingong (3)
Author affiliation: (1) School of Earth Science and Engineering, Xi'an Shiyou University, Xi'an; Shaanxi; 710065, China; (2) Department of Geology Science and Engineering, Wuhan University of Engineering Science, Wuhan; Hubei; 430200, China; (3) Department of Geology, Northwest University, Xi'an; Shaanxi; 710069, China
Corresponding author: Li, Jinghong(oil-and-gas@sohu.com)
Source title: Shiyou Xuebao/Acta Petrolei Sinica
Abbreviated source title: Shiyou Xuebao
Volume: 36
Issue: 10
Issue date: October 1, 2015
Publication year: 2015
Pages: 1199-1209 and 1298
Language: Chinese
ISSN: 02532697
CODEN: SYHPD9
Document type: Journal article (JA)
Publisher: Science Press
Abstract: The western mid-Yangtze area has experienced multi-cycle sedimentary and tectonic evolution, where multiple sets of resource-reservoir-cap assemblages are developed. The source rocks consist of diversified lithologies, such as carbonaceous shale, carbonate rock and coal, most of which enter the over-maturity stage. The deep Sinian-Cambrian source rocks are in the late period of over-mature stage, characterized by multi-stage hydrocarbon generation and crude-oil cracking gas in the late period. In the multi-cycle tectonic evolution, marine natural gas in the western mid-Yangtze area showed a complex accumulation process of multi-source multi-stage or consanguineous multi-stage mixed aggregation, multiphase adjustment and secondary changes in the late period. Based on previous research results and analyses for geological evolution background of the study area, regional effective chief source rocks were explored, and then the geochemical characteristics of natural gas in Jiannan gasfield were analyzed according to the component content of natural gas, the correlation between component parameters, carbon isotope of alkane gas and other data. In combination with regional hydrocarbon accumulation geology and gas zones of eastern Sichuan Basin, the genesis and source of marine natural gas in Jiannan gasfield, the western mid-Yangtze area were clarified. Studies have indicated that marine natural gas in Jiannan gasfield is dry gas; alkane gas shows certain

carbon isotopic reversal, and crude oil cracking has occurred for gas supply. The gas reservoirs of Permian Changxing Formation, Lower Triassic Feixianguan Formation and Jialingjiang Formation were derived from Permian source rocks. There is basically no Silurian or deeper gas-source supply. The natural gas in Jiannan gasfield is generated from mixed aggregation between crude-oil cracking gas and multi-type kerogen degradation gas, of which crude-oil cracking gas is dominant. The gas reservoirs of Silurian Hanjiadian Formation and Carboniferous Huanglong Formation are consisted of consanguineous multi-stage natural gases, of which crude-oil cracking gas is dominant. Meanwhile, the parent material for gas source is carbonaceous shale in Upper Ordovician Wufeng Formation and Lower Silurian Longmaxi Formation, rarely charged by natural gas of Sinian-Cambrian source rocks. Therefore, a huge potential exists in the exploration of marine natural gas in the western mid-Yangtze area, especially dominated by the western Hubei-eastern Chongqing area with good preservation condition. Moreover, Sinian, Cambrian and Silurian natural gases have a favorable exploration prospect.
Number of references: 54
Main heading: Natural gas
Controlled terms: Crude oil - Petroleum geology - Paraffins - Tectonics - Exploratory geochemistry - Gases - Natural gas fields - Shale oil - Carbon - Cracks - Gas industry - Isotopes
Uncontrolled terms: Gas sources - Geochemical characteristic - Hydrocarbon accumulation - Hydrocarbon generation - Jialingjiang formation - Preservation condition - Source rocks - Western mid-Yangtze region
Classification code: 481.1 Geology - 481.2 Geochemistry - 512.1 Petroleum Deposits - 512.2.1 Natural Gas Fields - 522 Gas Fuels - 523 Liquid Fuels - 804 Chemical Products Generally
DOI: 10.7623/syxb201510003
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

98. Image denoising via asymptotic nonlocal filtering (*Open Access*)

Accession number: 20151100639653
Authors: Liu, Xiaoyan (1, 2); Feng, Xiangchu (1); Zhang, Xuande (3); Li, Xiaoping (1); Luo, Liang (1)
Author affiliation: (1) School of Mathematics and Statistics, Xidian University, Xi'an; 710071, China; (2) School of Science, xi'An Shiyou University, 18 Second Dianzi Road, Yanta District, Xi'an, Shaanxi; 710065, China; (3) School of Mathematics and Computer Science, Ningxia University, Yinchuana; 750021, China
Corresponding author: Liu, Xiaoyan(feng2001410@163.com)
Source title: Mathematical Problems in Engineering
Abbreviated source title: Math. Probl. Eng.
Volume: 2015
Issue date: February 23, 2015
Publication year: 2015
Article number: 340182
Language: English
ISSN: 1024123X
E-ISSN: 15635147
Document type: Journal article (JA)
Publisher: Hindawi Limited, 410 Park Avenue, 15th Floor, 287 pmb, New York, NY 10022, United States
Abstract: The nonlocal means algorithm is widely used in image denoising, but this algorithm does not work well for high-intensity noise. To overcome this shortcoming, we establish a coupled iterative nonlocal means model in this paper. Considering the computation complexity of the new model, we realize it by using multiscale wavelet transform and propose an asymptotic nonlocal filtering algorithm which can reduce the influence of noise on similarity estimation and computation complexity. Moreover, we build a new nonlocal weight function based on the structure similarity index. Simulation results indicate that the proposed approach cannot only remove the noise but also preserve the structure of image and has good visual effects, especially for highly degenerated images.
Number of references: 62
Main heading: Image denoising
Controlled terms: Iterative methods - Wavelet transforms
Uncontrolled terms: Computation complexity - High-intensity noise - Multi-scale wavelet - Non-local means - Nonlocal filtering - Similarity estimation - Structure similarity - Weight functions
Classification code: 716.1 Information Theory and Signal Processing - 723.2 Data Processing and Image Processing - 921.3 Mathematical Transformations - 921.6 Numerical Methods
DOI: 10.1155/2015/340182
Funding Details: Number: 61271294,61271452,61362029, Acronym: -, Sponsor: -;
Compendex references: YES

Open Access type(s): All Open Access, Gold
Database: Compendex
Data Provider: Engineering Village

99. Approaches to group decision making with incomplete information based on power geometric operators and triangular fuzzy AHP

Accession number: 20152801023722
Authors: Dong, Minggao (1, 2); Li, Shouyi (1); Zhang, Hongying (3)
Author affiliation: (1) Institute of Water Resources and Hydro-electric Engineering, Xi'An University of Technology, Xi'an; 710048, China; (2) School of Economics and Management, Xi'An Shiyou University, Xi'an; 710065, China; (3) School of Mathematics and Statistics, Xi'An Jiaotong University, Xi'an; 710049, China
Corresponding author: Dong, Minggao(mgdong120101@126.com)
Source title: Expert Systems with Applications
Abbreviated source title: Expert Sys Appl
Volume: 42
Issue: 21
Issue date: July 10, 2015
Publication year: 2015
Pages: 7846-7857
Language: English
ISSN: 09574174
CODEN: ESAPEH
Document type: Journal article (JA)
Publisher: Elsevier Ltd
Abstract: In this paper, we investigate the multiple criteria group decision making (MCGDM) problems in which decision makers (DMs)' preferences on alternatives (criteria) are depicted by triangular fuzzy numbers and take the form of incomplete reciprocal comparison matrices. We aim to develop integrated methodologies for the MCGDM problems. First of all, we develop a triangular fuzzy power geometric (TFPG) operator and a triangular fuzzy weighted power geometric (TFWPG) operator for aggregating the DMs' preferences into the group preferences. Furthermore, we construct a consistent recovery method and a δ-consistent recovery method for estimating the missing preferences. Next, we propose two integrated approaches to the aforementioned MCGDM problems by utilizing triangular fuzzy analytic hierarchy process (TFAHP) to combine the TFPG (TFWPG) operator, the recovery methods and extent analysis method (EAM) effectively. Finally, an illustrative example of small hydropower (SHP) investment projects selection is given to show our approaches. ©2015 Elsevier Ltd. All rights reserved.
Number of references: 40
Main heading: Analytic hierarchy process
Controlled terms: Recovery - Fuzzy sets - Investments - Decision making - Geometry
Uncontrolled terms: Analysis method - Fuzzy analytic hierarchy process - Group Decision Making - Recovery methods - TFPG operator - TFWPG operator
Classification code: 912.2 Management - 921 Mathematics - 961 Systems Science
DOI: 10.1016/j.eswa.2015.06.007
Funding Details: Number: 11071281,60703117,61005042, Acronym: NSFC, Sponsor: National Natural Science Foundation of China; Number: 2014JQ8348, Acronym: -, Sponsor: Natural Science Foundation of Shaanxi Province; Number: -, Acronym: -, Sponsor: Fundamental Research Funds for the Central Universities;
Funding text: The authors sincerely appreciate the Editor-in-Chief, Professor Binshan Lin, and the anonymous referees for their constructive comments and suggestions that led to an improved version of this paper. This work was supported by grants from the National Natural Science Foundation of China (Nos. 61005042 , 60703117 and 11071281), the Natural Science Foundation of Shaanxi Province (No. 2014JQ8348) and the Fundamental Research Funds for the Central Universities.
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

100. Effects of speed parameters on cold rolling process of Double groove ball-section ring

Accession number: 20153801278482
Authors: Li, L. (1, 2); Li, X. (1); Liu, J. (1); He, Z. (1)

Author affiliation: (1) Key Laboratory of Materials Processing Engineering, School of Material Science and Engineering, Xi'an Shiyou University, Xi'an; 710065, China; (2) Key Laboratory of Advanced Manufacture Technology for Automobile Parts, Chongqing University of Technology, Ministry of Education, Chongqing; 400054, China
Corresponding author: Li, L.(lanyun7810@126.com)
Source title: Materials Research Innovations
Abbreviated source title: Mater. Res. Innov.
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Publication year: 2015
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Language: English
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Document type: Conference article (CA)
Publisher: Maney Publishing
Abstract: Double groove ball-section ring is an important part of complex profiled-section rings and has been widely used in energy industries, and cold double groove ball-section ring rolling is a new plastic forming technology that can directly fracture seamless double groove ball-section rings with high-precision and high-performance. Because the speed parameters (including the rotational speed of driving roll and the feed rate of mandrel) affect the feed amount per revolution and play important roles in the stability of cold double groove ball-section ring rolling process and the quality of deformed double groove ball-section ring production, the effects of speed parameters on the variation of ring configuration and the variation of strain in cold double groove ball-section ring rolling process are investigated. The obtained results provide valuable guidelines for the selection of speed parameters in the practical cold double groove ball-section ring rolling process. © W. S. Maney & Son Ltd 2015.
Number of references: 12
Main heading: Speed
Uncontrolled terms: Cold ring rolling - Cold rolling process - Energy industry - Feed-rates - Plastic forming - Ring configuration - Rotational speed - Speed parameters
Classification code: 535.1.2 Rolling Mill Practice - 535.2 Metal Forming - 601.2 Machine Components - 951 Materials Science
DOI: 10.1179/1432891714Z.0000000001303
Funding Details: Number: 51105306, Acronym: NSFC, Sponsor: National Natural Science Foundation of China; Number: P2015-03, Acronym: HUST, Sponsor: Huazhong University of Science and Technology;
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

101. Tectonic dynamics of northern continental margin basins in South China Sea

Accession number: 20152300924969
Authors: Chen, Jianjun (1); Ma, Yanping (1); Chen, Jianzhong (2); Sun, Guibin (3)
Author affiliation: (1) School of Earth Sciences and Engineering, Xi'an Shiyou University, Xi'an; 710065, China; (2) No.3 Geological Team of Xinjiang, Bureau of Geology and Mineral Resource Exploration and Development, Kuerle; 841000, China; (3) Heilongjiang Institute of Geology, Harbin; 150036, China
Corresponding author: Chen, Jianjun(cjjxs112@163.com)
Source title: Earth Science Frontiers
Abbreviated source title: Earth Sci. Front.
Volume: 22
Issue: 3
Issue date: May 1, 2015
Publication year: 2015
Pages: 38-47
Language: Chinese
ISSN: 10052321
Document type: Journal article (JA)
Publisher: Science Frontiers editorial department
Abstract: Northern continental margin basins in South China Sea are located among Pacific Plate, Indian Plate and Philippine Sea Plate; these plates had different impacts on these basins. The study of the evolution of the three plates and paleo-South China Sea showed that the stress environment had been changed in the late Cretaceous in northern continental margin area. The stress environment was compressional in the Lower Cretaceous and had been changed

into extension in the Late Cretaceous. The cause of extensional environment was different since the Late Cretaceous. Extensional environment was caused by stress relaxation of eogenetic orogen in South China continental margin area, by southern subduction of paleo-South China Sea and by rollback of the subducting Pacific slab from the late Cretaceous to the Paleocene, and the early rift basin began to form in continental margin in northern South China Sea. Continued reduction of western subduction rate of Pacific slab and southern subduction of Paleo-South China Sea formed the same stress environment in the Eocene and rift basins formed continually. Southern movement of mantle materials and southern subduction of Paleo-South China Sea formed the extensional environment from the Oligocene to the Early-Miocene and seafloor spreading of South China Sea began in the Early Oligocene. The three plates affected these north continental margin basins in South China Sea together since the Middle Miocene.
Number of references: 51
Main heading: Tectonics
Controlled terms: Stress relaxation
Uncontrolled terms: Continental margin - Indian plate - Northern South China Sea - Pacific plates - Philippine seas - Seafloor spreading - South China sea - Subduction rates
Classification code: 481.1 Geology - 931 Classical Physics; Quantum Theory; Relativity
DOI: 10.13745/j.esf.2015.03.003
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

102. Attosecond-Resolution Er:Fiber-Based Optical Frequency Comb

Accession number: 20220711666342
Authors: Yan, Lu-Lu (1); Zhang, Yan-Yan (1); Zhang, Long (1); Fan, Song-Tao (1, 2); Zhang, Xiao-Fei (1); Guo, Wen-Ge (3); Zhang, Shou-Gang (1); Jiang, Hai-Feng (1)
Author affiliation: (1) Key Laboratory of Time and Frequency Primary Standards, National Time Service Center, Chinese Academy of Sciences, Xi'an; 710600, China; (2) Graduate University of Chinese Academy of Sciences, Beijing; 100039, China; (3) School of Science, Xi'An Shiyou University, Xi'an; 710065, China
Corresponding author: Jiang, Hai-Feng(haifeng.jiang@ntsc.ac.cn)
Source title: Chinese Physics Letters
Abbreviated source title: Chin. Phys. Lett.
Volume: 32
Issue: 10
Issue date: 2015
Publication year: 2015
Article number: 104207
Language: English
ISSN: 0256307X
E-ISSN: 17413540
Document type: Journal article (JA)
Publisher: IOP Publishing Ltd
Abstract: Highly stable frequency-controlled optical frequency combs are key elements of many applications in timefrequency and optical-metrology domains. In this work, we demonstrate a highly stable frequency-controlled erbium-fiber-based optical frequency comb system. Its repetition rate is phase-stabilized to a continuous-wave laser with both an intra-cavity electro-optic modulator and a piezo-transducer; while the carrier-envelope-offset frequency is phase-locked to a radio-frequency signal generator by controlling the pump power. In-loop relative frequency stabilities of the comb are below 1 × 10?16 at 1 s, and integrate down to low 10?20 level at 104 s. The corresponding timing uncertainties are 100200 as over the full measurement range.
Number of references: 21
Main heading: Uncertainty analysis
Controlled terms: Pumping (laser) - Continuous wave lasers - Natural frequencies - Modulators - Optical materials
Uncontrolled terms: Attosecond resolution - Erbium fibers - Highly stables - Key elements - Optical frequency combs - Optical Metrology - Optical-frequency combs - Repetition rate - Stable frequencies - Time frequency
Classification code: 713.3 Modulators, Demodulators, Limiters, Discriminators, Mixers - 741.3 Optical Devices and Systems - 744.1 Lasers, General - 922.1 Probability Theory
Numerical data indexing: Time 1.00E00s, Time 4.00E+00s
DOI: 10.1088/0256-307X/32/10/104207
Compendex references: YES

Database: Compendex
Data Provider: Engineering Village

103. Mechanical and tribological properties of NiCr-Al2O3 composites at elevated temperatures

Accession number: 20150800536825
Authors: Liu, Feng (1, 2, 3); Jia, Junhong (1); Yi, Gewen (1); Wang, Wenzhen (1); Shan, Yu (1)
Author affiliation: (1) State Key Laboratory of Solid Lubrication, Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences, Lanzhou; 730000, China; (2) School of Materials Science and Engineering, Xi'An Shiyou University, Xi'an; 710065, China; (3) University of Chinese Academy of Sciences, Beijing; 100039, China
Corresponding author: Jia, Junhong(jhjia@licp.cas.cn)
Source title: Tribology International
Abbreviated source title: Tribol Int
Volume: 84
Issue date: April 2015
Publication year: 2015
Pages: 1-8
Language: English
ISSN: 0301679X
CODEN: TRBIBK
Document type: Journal article (JA)
Publisher: Elsevier Ltd
Abstract: The effect of Al2O3 content on the mechanical and tribological properties of Ni-Cr alloy was investigated from room temperature to 1000 °C. The results indicated that NiCr-40 wt% Al2O3 composite exhibited good wear resistance and its compressive strength remained 540 MPa even at 1000 °C. The values obtained for flexural strength and fracture toughness at room temperature were 771 MPa, 15.2 MPa m1/2, respectively. Between 800 °C and 1000 °C, the adhesive and plastic oxide layer on the worn surface of the composite was claimed to be responsible for low friction coefficient and wear rate. © 2014 Elsevier Ltd. All rights reserved.
Number of references: 36
Main heading: Nickel alloys
Controlled terms: Tribology - Aluminum oxide - Fracture toughness - Chromium alloys - Alumina - Binary alloys - Compressive strength - Friction - Wear resistance
Uncontrolled terms: Al2O3 contents - Elevated temperature - Low friction coefficients - Mechanical and tribological properties - Ni-Cr alloys - Oxide layer - Tribological properties - Worn surface
Classification code: 543.1 Chromium and Alloys - 548.2 Nickel Alloys - 804.2 Inorganic Compounds - 931 Classical Physics; Quantum Theory; Relativity - 931.2 Physical Properties of Gases, Liquids and Solids
Numerical data indexing: Pressure 5.40e+08Pa, Pressure 7.71e+08Pa, Temperature 1.07e+03K, Temperature 1.27e+03K
DOI: 10.1016/j.triboint.2014.11.023
Funding Details: Number: 51101166,51175490,51471181, Acronym: NSFC, Sponsor: National Natural Science Foundation of China;
Funding text: The authors acknowledge the financial supports by the National Natural Science Foundation of China (Grant nos. 51175490 , 51101166 , 51471181).
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

104. Improved morphological component analysis for interference hyperspectral image decomposition

Accession number: 20153101094850
Authors: Wen, Jia (1, 2); Zhao, Junsuo (2); Wang, Cailing (3)
Author affiliation: (1) School of Electronics and Information Engineering, Tianjin Polytechnic University, Tianjin; 300387, China; (2) Science and Technology on Integrated Information System Laboratory, Institute of Software, Chinese Academy of Sciences, Beijing; 100190, China; (3) Computer Science Department, Xi'An Shiyou University, Xi'an; 710065, China
Corresponding author: Wen, Jia

Source title: Computers and Electrical Engineering
Abbreviated source title: Comput Electr Eng
Volume: 46
Issue date: 2015
Publication year: 2015
Pages: 394-402
Language: English
ISSN: 00457906
CODEN: CPEEBQ
Document type: Journal article (JA)
Publisher: Elsevier Ltd
Abstract: Due to the special imaging principle, lots of vertical interference stripes exist in the frames of the IHI (interference hyperspectral image) data, which will affect the result of compressed sensing theory or other traditional compression algorithms used on IHI data. In this paper, MCA (morphological component analysis) algorithm is adopted to separate the interference stripes layers and the background layers, and an IMCA (improved MCA) algorithm is proposed according to the characteristics of the IHI data, dictionary learned from the LSMIS (Large Spatially Modulated Interference Spectral Image) data is used to sparsely represent the stripes layers instead of traditional basis, and the condition of iteration convergence is improved. The experimental results prove that the proposed IMCA algorithm can get better results than the traditional MCA, and also can meet the convergence conditions much faster than the traditional MCA. © 2015 Elsevier Ltd.
Number of references: 11
Main heading: Compressed sensing
Controlled terms: Hyperspectral imaging - Iterative methods - Spectroscopy - Image enhancement - Image compression - Image analysis - Independent component analysis
Uncontrolled terms: Compression algorithms - Convergence conditions - Dictionary learning - Interference spectral images - Morphological component analysis - Morphological component analysis (MCA) - Sparse representation - Spatially modulated
Classification code: 716.1 Information Theory and Signal Processing - 746 Imaging Techniques - 921.6 Numerical Methods
DOI: 10.1016/j.compeleceng.2015.07.014
Funding Details: Number: 41301382,61401439, Acronym: NSFC, Sponsor: National Natural Science Foundation of China;
Funding text: The research work was supported by National Natural Science Foundation of China under Grant Nos. 61401439 and 41301382 .
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

105. Design of pound-drever-hall laser frequency stabilization system without phase shifter

Accession number: 20151200656623
Authors: Su, Juan (1, 2); Jiao, Mingxing (1); Xing, Junhong (1); Li, Zhe (1)
Author affiliation: (1) Department of Precision Instruments, School of Mechanical and Precision Instrument Engineering, Xi'an University of Technology, Xi'an, Shaanxi; 710048, China; (2) Key Laboratory of Photoelectric Logging and Detecting of Oil and Gas, Xi'an Shiyou University, Ministry of Education, Xi'an; 710065, China
Corresponding author: Jiao, Mingxing(jiaomx@xaut.edu.cn)
Source title: Proceedings of SPIE - The International Society for Optical Engineering
Abbreviated source title: Proc SPIE Int Soc Opt Eng
Volume: 9446
Volume title: Ninth International Symposium on Precision Engineering Measurements and Instrumentation
Part number: 1of1
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Article number: 94460I
Language: English
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CODEN: PSISDG
ISBN-13: 9781628415612
Document type: Conference article (CA)

Conference name: 9th International Symposium on Precision Engineering Measurements and Instrumentation, ISPEMI 2014
Conference date: August 8, 2014 - August 10, 2014
Conference location: Changsha, China
Conference code: 111505
Sponsor: China Instrument and Control Society; Chinese Society for Measurement; International Committee on Measurements and Instrumentation; National Natural Science Foundation of China
Publisher: SPIE
Abstract: The Pound-Drever-Hall (PDH) laser frequency stabilization is a wide spread adopted technique for narrow linewidth and ultra-stable lasers, and a phase shifter is an important part in a traditional PDH frequency stabilization system. A PDH laser frequency stabilization system without phase shifter was proposed, in which quadrature coherent detection method was used to extract the frequency drifts. Orthogonal reference signals are generated using direct digital frequency synthesizer (DDS) and mixed with the output of a photo-detector. Over-sampling technique and cumulative average algorithm were used to improve the detection resolution and SNR, orthogonal phase sensitive detection algorithm was adopted to obtain the frequency drifts. Both the quadrature demodulation system structure and the signal processing methods were adopted, the systematic detection error is reduced, the anti-noise performance is raised and long term frequency stability is improved with the PDH laser frequency stabilization system without phase shifter. © 2015 SPIE.
Number of references: 10
Main heading: Signal to noise ratio
Controlled terms: Signal processing - Phase shifters - Stabilization - Frequency stability
Uncontrolled terms: Direct digital frequency synthesizer - Frequency stabilization - Laser frequency stabilization - Long term frequency stability - Over sampling - Phase sensitive detection - Pound - Drever - Hall laser frequency stabilizations - Quadrature demodulation
Classification code: 713.5 Electronic Circuits Other Than Amplifiers, Oscillators, Modulators, Limiters, Discriminators or Mixers - 716.1 Information Theory and Signal Processing - 961 Systems Science
DOI: 10.1117/12.2087005
Funding Details: Number: 51175421,61205135, Acronym: -, Sponsor: -;
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

106. Improved MCA-TV algorithm for interference hyperspectral image decomposition

Accession number: 20153001072818
Authors: Wen, Jia (1, 2); Zhao, Junsuo (2); Cailing, Wang (3)
Author affiliation: (1) School of Electronics and Information Engineering, Tianjin Polytechnic University, Tianjin; 300387, China; (2) Science and Technology on Integrated Information System Laboratory, Institute of Software, Chinese Academy of Sciences, Beijing; 100190, China; (3) College of Computer Science, Xi'An Shiyou University, Xi'an; 710065, China
Corresponding author: Wen, Jia(Dr_JWen@qq.com)
Source title: Optics and Lasers in Engineering
Abbreviated source title: Opt Lasers Eng
Volume: 75
Issue date: July 27, 2015
Publication year: 2015
Pages: 81-87
Language: English
ISSN: 01438166
CODEN: OLENDN
Document type: Journal article (JA)
Publisher: Elsevier Ltd
Abstract: The technology of interference hyperspectral imaging, which can get the spectral and spatial information of the observed targets, is a very powerful technology in the field of remote sensing. Due to the special imaging principle, there are many position-fixed interference fringes in each frame of the interference hyperspectral image (IHI) data. This characteristic will affect the result of compressed sensing theory and traditional compression algorithms used on IHI data. According to this characteristic of the IHI data, morphological component analysis (MCA) is adopted to separate the interference fringes layers and the background layers of the LSMIS (Large Spatially Modulated Interference Spectral Image) data, and an improved MCA and Total Variation (TV) combined algorithm is proposed in this paper. An update mode of the threshold in traditional MCA is proposed, and the traditional TV algorithm is also improved

according to the unidirectional characteristic of the interference fringes in IHI data. The experimental results prove that the proposed improved MCA-TV (IMT) algorithm can get better results than the traditional MCA, and also can meet the convergence conditions much faster than the traditional MCA.
Number of references: 20
Main heading: Compressed sensing
Controlled terms: Image compression - Hyperspectral imaging - Remote sensing - Image analysis - Image enhancement - Spectroscopy
Uncontrolled terms: Compression algorithms - Convergence conditions - Interference fringe - Interference spectral images - Morphological component analysis (MCA) - Sparse representation - Spatial informations - Total variation
Classification code: 716.1 Information Theory and Signal Processing - 746 Imaging Techniques
DOI: 10.1016/j.optlaseng.2015.07.001
Funding Details: Number: 41301382,61401439, Acronym: NSFC, Sponsor: National Natural Science Foundation of China;
Funding text: The research work was supported by National Natural Science Foundation of China under Grant nos. 61401439 and 41301382 .
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

107. Porosity and permeability cutoffs for calculating effective thickness of different types of low-permeability reservoirs and causes of their differences: a case study of the Mesozoic in S region of central Shaanbei slope

Accession number: 20153901305173
Authors: Zhang, Fengqi (1); Wu, Fuli (1); Meng, Xiaoling (2); Gao, Xingjun (3); Zhang, Hai (3); Li, Chengshan (4); Wang, Baoping (3)
Author affiliation: (1) School of Earth Sciences and Engineering, Xi'an Shiyou University, Xi'an; Shaanxi; 710065, China; (2) Exploration and Development Research Institute, PetroChina Changqing Oilfield Company, Xi'an; Shaanxi; 710018, China; (3) Yanchang Petroleum Coporation, Yan'an; Shaanxi; 716000, China; (4) Department of Exploration, PetroChina Changqing Oilfield Company, Xi'an; Shaanxi; 710018, China
Source title: Oil and Gas Geology
Abbreviated source title: Oil Gas Geol.
Volume: 36
Issue: 4
Issue date: August 28, 2015
Publication year: 2015
Pages: 555-562
Language: Chinese
ISSN: 02539985
Document type: Journal article (JA)
Publisher: Use me
Abstract: Analytic means including thin section examination, SEM, cathode luminescence, mercury penetration and so on, were applied to determine the cutoffs of porosity and permeability for calculating the effective thickness of the major Mesozoic oil-bearing formations in S region of Ordos Basin. The reasons for the varying cutoffs were also discussed based on quantitative characterization of physical property changes of the formations. The results show that the cutoffs (porosity and permeability) decline with the increase of burial depth. Samples from Yan 9, Chang 2, Chang 4+5 and Chang 6 formations, have porosity cutoffs of 15%, 14%, 8% respectively, and permeability cutoffs of 4×10-3, 1×10-3, 0.15×10-3 μm2 respectively. The differences in content and grain size of rigid particles in mineral composition of each reservoir caused mainly by sedimentation processes are regarded as the basic factor for the difference of cutoffs, while diagenesis is the major factor. The processes, including compaction, cementation and corrosion, dented the formations in different ways. All the formations had the similar porosity at first. But later on it turned out that Yan 9 had a higher porosity than that of Chang 2 because of their different response to corrosion and Chang 4+5 had lower porosity than that of Chang 2 because of their different behavior under cementation. ©, 2015, Oil and Gas Geology. All right reserved.
Number of references: 16
Main heading: Porosity
Controlled terms: Cementing (shafts) - Corrosion - Petroleum reservoir engineering - Metamorphic rocks - Oil bearing formations - Low permeability reservoirs

Uncontrolled terms: Cathode luminescence - Difference - Effective thickness - Mesozoic - Mineral composition - Ordos Basin - Quantitative characterization - Sedimentation process
Classification code: 512.1 Petroleum Deposits - 512.1.1 Oil Fields - 512.1.2 Petroleum Deposits : Development Operations - 931.2 Physical Properties of Gases, Liquids and Solids
Numerical data indexing: Percentage 1.40e+01%, Percentage 1.50e+01%, Percentage 8.00e+00%
DOI: 10.11743/ogg20150404
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

108. High temperature tribological properties of NiCrWAl2O3-SrCO3-Ag cement composites

Accession number: 20155101685985
Authors: Shan, Yu (1); Liu, Feng (2); Wang, Jian-Yi (1, 3); Wang, Wen-Zhen (1); Jia, Jun-Hong (1)
Author affiliation: (1) State Key Laboratory of Solid Lubrication, Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences, Lanzhou; 730000, China; (2) School of Materials Science and Engineering, Xi'an Shiyou University, Xi'an; 710065, China; (3) Graduate University of Chinese Academy of Sciences, Beijing; 100039, China
Corresponding author: Jia, Jun-Hong(jhjia@licp.cas.cn)
Source title: Mocaxue Xuebao/Tribology
Abbreviated source title: Mocaxue Xuebao
Volume: 35
Issue: 6
Issue date: November 1, 2015
Publication year: 2015
Pages: 707-713
Language: Chinese
ISSN: 10040595
CODEN: MAXUE7
Document type: Journal article (JA)
Publisher: Science Press
Abstract: NiCrW-Al2O3-SrCO3-Ag composites with different contents of SrCO3 and Ag were fabricated by powder metallurgical method (mechanical alloying and vacuum hot-pressing sintering). The friction and wear properties were tested by UMT-3 from room temperature to 1000 . The microstructures, phase compositions and wear mechanism of the composites were analyzed by scanning electron microscopy, energy dispersive spectrocopy and X-ray diffraction. The results show that the decomposition of SrCO3 and the formation of SrAl4O7 during the hot-pressing. Meanwhile, the new phases such as Cr2O3 and NiCr2O4 were found. The composite with addition of 10% SrCO3 and 10% Ag exhibited the best friction and wear properties in a wide temperature range and that was attributed to the formation of the tribo-layers containing oxides (SrCrO4 and NiO) by tribo-chemical reactions during the medium-high temperature process. Together with Ag and NiCr2O4 in composites, SrCrO4 and NiO worked synergistically to improve the tribological properties of the composites in a wide range of temperatures (400~1000). © 2015, Science Press. All right reserved.
Number of references: 14
Main heading: Strontium compounds
Controlled terms: Sintering - Chromium compounds - Tribology - Scanning electron microscopy - Aluminum oxide - Mechanical alloying - Powder metallurgy - Hot pressing - Alumina - Cements - Composite materials - Friction - Wear of materials - X ray diffraction
Uncontrolled terms: Cement composite - Friction and wear properties - High temperature tribological properties - Medium-High temperatures - Powder metallurgical - Tribological properties - Wear mechanisms - Wide temperature ranges
Classification code: 412.1 Cement - 531 Metallurgy and Metallography - 804.2 Inorganic Compounds - 931 Classical Physics; Quantum Theory; Relativity - 931.2 Physical Properties of Gases, Liquids and Solids - 951 Materials Science
Numerical data indexing: Percentage 1.00e+01%
DOI: 10.16078/j.tribology.2015.06.009
Funding Details: Number: 51175490,51471181, Acronym: -, Sponsor: -;
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

109. Synergetic effects of quinoline and thiourea in the produced water from saturated CO2-containing gas wells

Accession number: 20152600966618
Authors: Li, Shanjian (1, 2); Feng, Lajun (1); Dong, Xiaojun (3); Meng, Fanning (2)
Author affiliation: (1) School of Materials Science and Engineering, Xi'an University of Technology, Xi'an; Shaanxi; 710048, China; (2) School of Chemistry and Chemical Engineering, Xi'an Shiyou University, Xi'an; Shaanxi; 710065, China; (3) Oil & Gas Exploration Company of Yanchang Petroleum Group Co., Ltd., Xi'an; Shaanxi; 710089, China
Corresponding author: Li, Shanjian(lishanjian@xsyu.edu.cn)
Source title: Natural Gas Industry
Abbreviated source title: Natur. Gas Ind.
Volume: 35
Issue: 5
Issue date: May 25, 2015
Publication year: 2015
Pages: 90-98
Language: Chinese
ISSN: 10000976
CODEN: TIGOE3
Document type: Journal article (JA)
Publisher: Natural Gas Industry Journal Agency
Abstract: Adding inhibiter for restraining CO2 corrosion is a common process used in the natural gas development, synergetic effects can be used in effectively reducing the volume of corrosion inhibitors, thus minimizing environmental pollution and enhancing economic benefits. The static weight-loss method, electrochemical polarization curves, electrochemical impedance spectroscopy (EIS), scanning electron microscope (SEM), electron spectroscopy and other experimental analysis methods were deployed to determine the synergetic effects of quinoline quaternary ammonium salt (QN) and thiourea (TU) on corrosion to N80 carbon steel in the corrosion system of produced water from saturated CO2-containing gas wells. The results show that, both quinoline quaternary ammonium salt and thiourea can significantly reduce corrosion to N80 carbon steel. Quinoline quaternary ammonium salt can be classified as a corrosion inhibitor characterized by the inhibition of cathode. As a mixed type corrosion inhibitor, thiourea may present strong inhibition to both the cathode and anode of N80 carbon steel. Satisfactory synergetic effects on corrosion inhibition can be observed during joint application of quinoline quaternary ammonium salt and thiourea at lower concentration. Combination of 3 mg/L quinoline quaternary ammonium salt corrosion inhibitor with 7 mg/L thiourea may present the optimal corrosion inhibition performances of up to 93. 59%. Interaction between quinoline quaternary ammonium salt and thiourea may form stable absorption coating on the surface of N80 carbon steel to minimize the corrosion to N80 carbon steel. In-depth discussions with regard to the mechanism of the synergetic effects of quinoline quaternary ammonium salt and thiourea were conducted. ©, 2015, Natural Gas Industry Journal Agency. All right reserved.
Number of references: 21
Main heading: Corrosion inhibitors
Controlled terms: Thioureas - Carbon steel - Steel corrosion - Corrosion resistant coatings - Cathodes - Electrochemical impedance spectroscopy - Natural gas - Carbon dioxide - Electrochemical corrosion - Scanning electron microscopy
Uncontrolled terms: CO2 corrosion - Corrosion inhibition performance - Electrochemical polarization - Environmental pollutions - Experimental analysis method - Natural gas development - Quaternary ammonium salt - Synergetic effect
Classification code: 522 Gas Fuels - 539.1 Metals Corrosion - 539.2 Corrosion Protection - 539.2.1 Protection Methods - 545.3 Steel - 801 Chemistry - 801.4.1 Electrochemistry - 802.2 Chemical Reactions - 803 Chemical Agents and Basic Industrial Chemicals - 804.1 Organic Compounds - 804.2 Inorganic Compounds
Numerical data indexing: Mass_Density 3.00e-03kg/m3, Mass_Density 7.00e-03kg/m3, Percentage 5.90e+01%
DOI: 10.3787/j.issn.1000-0976.2015.05.014
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

110. Structural Interpretation of the Qingdong Area in Bohai Bay Basin from Shipborne Gravity Data (*Open Access*)

Accession number: 20154401465623
Authors: Zhang, Chunguan (1); Chen, Jingguo (2); Song, Mingyi (3, 4); Wang, Jinkuan (2); Yuan, Bingqiang (1)

Author affiliation: (1) School of Earth Science and Engineering, Xi'An Shiyou University, Xi'an, Shaanxi; 710065, China; (2) Huabei Department, Renqiu, Hehei; 062552, China; (3) Geol. Exploration Institute of Nonferrou Metal Geological Exploration Bureau of Guangdong Province, Guangzhou, Guangdong; 510080, China; (4) School of Earth Science and Engineering, Xi'An Shiyou University, Xi'an Dianzi 2 Road, Xi'an, China
Source title: Polish Maritime Research
Abbreviated source title: Pol. Marit. Res.
Volume: 22
Issue: s1
Issue title: Title: Special Issue
Issue date: September 1, 2015
Publication year: 2015
Pages: 100-105
Language: English
ISSN: 12332585
E-ISSN: 20837429
Document type: Journal article (JA)
Publisher: De Gruyter Open Ltd
Abstract: The Qingdong area, located in Bohai bay basin, was suspected good exploration prospects. In order to study tectonic features and find out favourable petroleum prospects in the area, the gravity data at a scale of 1:50,000 were interpreted. This paper, through data processing and synthetic interpretation of the high-precision gravity data in the area, discusses characteristics of the gravity field and their geological implications, determines the fault system, analyses features of the main strata, divides structure units and predicts favourable petroleum zones. The results showed that the faults controlled the development of the Mesozoic and Cenozoic strata and the distribution of local structures in this area. The study revealed that the Qingtuozi uplift and the Kendong uplift in the north were formed in Mesozoic, and the Qingdong depression in the middle was the rift basin in Mesozoic and Cenozoic. Thicker strata in Mesozoic and Cenozoic developed in the Dongying depression and the Qingdong depression, so there is abundant hydrocarbon in these two depressions, and then the Guangligang rise-in-sag and the Qingdong rise-in-sag developed in the center in these two depressions are also favorable places for prospecting.
Number of references: 15
Main heading: Data handling
Controlled terms: Hydrocarbons - Faulting - Gravitation - Seismology
Uncontrolled terms: Gravity anomalies - rise-in-sag - Seismic profiles - Structure unit - the Qingdong depression
Classification code: 484.1 Earthquake Measurements and Analysis - 723.2 Data Processing and Image Processing - 804.1 Organic Compounds - 931.5 Gravitation, Relativity and String Theory
DOI: 10.1515/pomr-2015-0040
Compendex references: YES
Open Access type(s): All Open Access, Gold
Database: Compendex
Data Provider: Engineering Village

111. Mineral components of shales from Longmaxi Formation in southeastern Chongqing and their implications for shale gas

Accession number: 20160101750656
Authors: Guo, Ling (1, 2); Jiang, Zaixing (3); Guo, Feng (4)
Author affiliation: (1) State Key Laboratory of Continental Dynamics, Northwest University, Xi'an; 710069, China; (2) Department of Geology, Northwest University, Xi'an; 710069, China; (3) School of Energy Resources, China University of Geosciences (Beijing), Beijing; 100083, China; (4) School of Earth Sciences and Engineering, Xi'an Shiyou University, Xi'an; 710065, China
Corresponding author: Guo, Ling(guoling@nwu.edu.cn)
Source title: Zhongnan Daxue Xuebao (Ziran Kexue Ban)/Journal of Central South University (Science and Technology)
Abbreviated source title: Zhongnan Daxue Xuebao (Ziran Kexue Ban)
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ISSN: 16727207
CODEN: ZDXZAC
Document type: Journal article (JA)
Publisher: Central South University of Technology
Abstract: Based on the observation of field outcrops and cores selected from Silurian Longmaxi shale (SLS) in southeastern Chongqing, the mineralogical features, reservoir properties, pore throat characteristics and rock brittleness were analyzed by scanning electron microscopy and X-ray diffraction. The results show that clay mineral and quartz are dominant minerals in the SLS, with average mass fraction of 42.3% and 39.2%, respectively, followed by feldspar with average mass fraction of 12.6%, carbonate minerals with average mass fraction 5.6% and pyrite with average mass fraction of 0.8%. The mass fraction of brittle minerals is relatively high, with average mass fraction of 58%. The brittleness of the SLS is relatively high with average value 45%. The average effective porosity and permeability of Silurian Longmaxi Formation are 3.18% and 11.8×10-5 μm2, respectively, which belongs to the unconventional tight reservoir. The results also show a positive correlation between quartz mass fraction and effective porosity and permeability, and a slightly negative correlation between clay mineral and permeability. © 2015, Central South University of Technology. All right reserved.
Number of references: 24
Main heading: Quartz
Controlled terms: Petroleum reservoirs - X ray diffraction - Shale gas - Clay minerals - Porosity - Brittleness - Plasticity - Feldspar - Scanning electron microscopy - Fracture mechanics - Petroleum reservoir engineering - Pyrites
Uncontrolled terms: Chongqing - Effective porosity - Longmaxi Formation - Mineral component - Mineralogical features - Negative correlation - Positive correlations - Reservoir property
Classification code: 482.2 Minerals - 512.1.1 Oil Fields - 512.1.2 Petroleum Deposits : Development Operations - 512.2 Natural Gas Deposits - 522 Gas Fuels - 931.1 Mechanics - 931.2 Physical Properties of Gases, Liquids and Solids - 951 Materials Science
Numerical data indexing: Percentage 1.26e+01%, Percentage 3.18e+00%, Percentage 3.92e+01%, Percentage 4.23e+01%, Percentage 4.50e+01%, Percentage 5.60e+00%, Percentage 5.80e+01%, Percentage 8.00e-01%
DOI: 10.11817/j.issn.1672-7207.2015.11.024
Funding Details: Number: BJ14266, Acronym: SRFDP, Sponsor: Specialized Research Fund for the Doctoral Program of Higher Education of China; Number: 2014JQ5191, Acronym: NWU, Sponsor: Northwest University; Number: -, Acronym: -, Sponsor: Natural Science Foundation of Shanxi Province; Number: 20136101120003, Acronym: NSFC, Sponsor: National Natural Science Foundation of China; Number: -, Acronym: -, Sponsor: State Key Laboratory of Continental Tectonics and Dynamics;
Funding text: Projects(41302076, 41002043) supported by the National Natural Science Foundation of China; Project(20136101120003) supported by Specialized Research Fund for the Doctoral Program of Higher Education; Project(BJ14266) supported by the Opening Foundation of State Key Laboratory of Continental Dynamics, Northwest University; Project(2014JQ5191) supported by Natural Science Basic Research Plan of Shanxi Province of China.
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

112. Development of a red fluorescent light-up probe for highly selective and sensitive detection of vicinal dithiol-containing proteins in living cells (*Open Access*)

Accession number: 20155201726586
Authors: Wang, Yuanyuan (1); Yang, Xiao-Feng (1); Zhong, Yaogang (2); Gong, Xueyun (1); Li, Zheng (2); Li, Hua (1, 3)
Author affiliation: (1) Key Laboratory of Synthetic and Natural Functional Molecule Chemistry of Ministry of Education, College of Chemistry and Materials Science, Northwest University, Xi'an; 710069, China; (2) College of Life Sciences, Northwest University, Xi'an; 710069, China; (3) College of Chemistry and Chemical Engineering, Xi'an Shiyou University, Xi'an; 710065, China
Corresponding author: Yang, Xiao-Feng(xfyang@nwu.edu.cn)
Source title: Chemical Science
Abbreviated source title: Chem. Sci.
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Language: English
ISSN: 20416520
E-ISSN: 20416539
CODEN: CSHCCN
Document type: Journal article (JA)
Publisher: Royal Society of Chemistry
Abstract: Vicinal dithiol-containing proteins (VDPs) play a key role in cellular redox homeostasis and are responsible for many diseases. Here, we develop a red fluorescent light-up probe FAsH for the highly selective and sensitive detection of VDPs using the environment-sensitive 2-(4-dimethylaminophenyl)-4-(2-carboxyphenyl)-7-diethylamino-1-benzopyrylium (F1) as the fluorescent reporter and cyclic dithiaarsane as the targeting unit. FAsH is almost nonfluorescent in aqueous solution. However, it exhibits intense fluorescence emission upon binding to reduced bovine serum albumin (rBSA, selected as the model protein). The fluorescence intensity of FAsH is directly proportional to the concentration of rBSA over the range of 0.06-0.9 μM, with a detection limit $_{(3\delta)}$ of 0.015 μM. Importantly, the fast kinetics of binding between FAsH and VDPs $_{(\sim 2.5}$ min) enables the dynamic tracing of VDPs in biological systems. Preliminary experiments show that FAsH can be used for the no-wash imaging of endogenous VDPs in living cells. In addition, our study shows that F1 presents both high environment-sensitivity and good fluorescence properties, and is promising for the development of no-wash fluorescent light-up probes for target-specific proteins in living cells. © The Royal Society of Chemistry.
Number of references: 48
Main heading: Proteins
Controlled terms: Probes - Fluorescence - Body fluids - Mammals
Uncontrolled terms: Bovine serum albumins - Environment-sensitive - Fluorescence emission - Fluorescence intensities - Fluorescence properties - Fluorescent light - Fluorescent reporter - Sensitive detection
Classification code: 461.2 Biological Materials and Tissue Engineering - 741.1 Light/Optics - 804.1 Organic Compounds
DOI: 10.1039/c5sc02824h
Funding Details: Number: 21275117,21375105,21475105, Acronym: -, Sponsor: -;
Compendex references: YES
Open Access type(s): All Open Access, Gold, Green
Database: Compendex
Data Provider: Engineering Village

113. Advances of nanotechnologies in oil and gas industries (*Open Access*)

Accession number: 20161102084982
Authors: Yang, Jiang (1, 2); Ji, Sixue (1); Li, Ran (1); Qin, Wenlong (1); Lu, Yongjun (2)
Author affiliation: (1) College of Petroleum Engineering, Xi'An Petroleum University, Xi'an; Shaanxi; 710065, China; (2) Fracturing and Acidizing Technical Center, RIPED-Lanfang, PetroChina, Lanfang; Hebei; 065000, China
Corresponding author: Yang, Jiang(jyang98@126.com)
Source title: Energy Exploration and Exploitation
Abbreviated source title: Energy Explor Exploit
Volume: 33
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Issue date: October 2015
Publication year: 2015
Pages: 639-657
Language: English
ISSN: 01445987
E-ISSN: 20484054
CODEN: EEEXDU
Document type: Journal article (JA)
Publisher: Multi-Science Publishing Co. Ltd, United States
Abstract: Many functional materials have been used in oil and gas industries. Special materials were needed for to withstand the high temperature and pressure harsh environment of oil and gas reservoir. Nanotechnologies have the potential to introduce revolutionary changes of materials used in the areas of the oil and gas industries. This paper gives an overview of the nanotechnology application for enhanced oil recovery, fracturing fluids, flow assurance, drilling, completion and specialty composite in the oil and gas industry in the last few years. Applications of nano-materials, in the form of solid composites and functional nanoparticle-fluid in these areas are reviewed. The future challenges of nanotech-based solutions for the petroleum industry are also discussed.
Number of references: 85

Main heading: Nanotechnology
Controlled terms: Oil well flooding - Enhanced recovery - Petroleum industry - Petroleum reservoir engineering - Functional materials - Gas industry - Petroleum reservoirs - Drilling fluids - Gases - Fracturing fluids
Uncontrolled terms: Enhanced oil recovery - Flow assurance - Functional nanoparticles - High temperature and pressure - Nanotechnology applications - Oil and Gas Industry - Oil and gas reservoir - Revolutionary changes
Classification code: 511.1 Oil Field Production Operations - 512.1.1 Oil Fields - 512.1.2 Petroleum Deposits : Development Operations - 522 Gas Fuels - 761 Nanotechnology - 951 Materials Science
DOI: 10.1260/0144-5987.33.5.639
Funding Details: Number: 51174163,51304159, Acronym: -, Sponsor: -;
Compendex references: YES
Open Access type(s): All Open Access, Bronze
Database: Compendex
Data Provider: Engineering Village

114. Application of well test information to judge blocking and channeling in polymer flooding unit

Accession number: 20161202131907
Authors: Lin, Jiaen (1); Qiu, Kuntai (2); Guo, Xiaoqun (2)
Author affiliation: (1) Xian Shiyou Universty, China; (2) Henan Oilfield Subcompany of Sinopec, China
Source title: Society of Petroleum Engineers - SPE Asia Pacific Enhanced Oil Recovery Conference, EORC 2015
Abbreviated source title: Soc. Pet. Eng. - SPE Asia Pac. Enhanc. Oil Recovery Conf., EORC
Part number: 1of1
Issue title: Society of Petroleum Engineers - SPE Asia Pacific Enhanced Oil Recovery Conference, EORC 2015
Issue date: 2015
Publication year: 2015
Report number: SPE-174670-MS
Pages: 1160-1176
Language: English
ISBN-13: 9781510813434
Document type: Conference article (CA)
Conference name: SPE Asia Pacific Enhanced Oil Recovery Conference, EORC 2015
Conference date: August 11, 2015 - August 13, 2015
Conference location: Kuala Lumpur, Malaysia
Conference code: 118471
Publisher: Society of Petroleum Engineers
Abstract: Polymer flooding has been extensively applied to oilfields as an effective method for EOR, but along with injected time growing, some wells' bottomhole pressure rose up and oil production dropped, and the formation pressure rose while the reservoir was blocked, and water production of the other wells increased while the reservoir was channeled. An analytical method based on well test analysis is developed to incorporate well test pressure data with production data to verify whether the polymer flooding plays a role in displacing oil into wellbores. Based on the non-Newton polymer well test analysis models to consider the polymer non-Newton effect, this paper employs two well groups located in Shuanghe polymer flooding pilot unit of Henan Oilfield by using the dynamic performance analysis approach in which the well test information is combined with the production data to judge the blocking and channeling. First qualitative analysis is performed to compare different period pressure history curves of the different period pressure test data by drawing Cartesian coordinate charts and log-log diagnosis charts of pressure change and its derivative of all the well test data with production history data for a well. Secondly we interpret all the well test data from the two well groups with 6 periods' well test data to obtain the formation parameters by using non-Newton fluid well test analysis software. Blocking and channeling could be judged qualitatively and quantitatively by correlating different period pressure trend and production data trend charts and parameters from the different period well test interpretation. For blockage, oil production flow rate dropped, the formation pressure rose and wellbore skin factors increased for production wells, and reservoir permeability decreased. For channeling effects, both production flow rate and water cut increased, but the formation pressure almost did not change and reservoir permeability did not change. To recognize the geological characteristics and production condition of the two well groups based on the above ideology, Non-Newton composite models with two zones is chosen to analyze the tested wells to acquire the skin factor, internal and external zone flow capacity, internal area radius, formation pressure. Since skin factor and formation pressure increase, both internal and external area zone flow capacity reduce, and internal area radius becomes smaller. It is concluded that the areas around the tested wells have been blocked. Most innovative aspect of the methodology developed in this paper to judge blocking and channeling effects of polymer flood reservoir in a systematic fashion is by

contrasting different periods of tested pressure change trend, flow rate change trend and production water cut change trend with the parameters obtained by non-Newton fluid well test analysis to get a more direct solution of resultant lower uncertainty. Copyright 2015, Society of Petroleum Engineers.
Number of references: 12
Main heading: Oil well flooding
Controlled terms: Boreholes - Oil field equipment - Petroleum reservoir evaluation - Non Newtonian flow - Petroleum reservoirs - Flow rate - Software testing - Floods - Oil well testing - Reservoirs (water)
Uncontrolled terms: Cartesian coordinate - Dynamic performance analysis - Formation parameter - Formation pressure - Geological characteristics - Qualitative analysis - Reservoir permeability - Well test interpretation
Classification code: 441.2 Reservoirs - 511.1 Oil Field Production Operations - 511.2 Oil Field Equipment - 512.1.1 Oil Fields - 512.1.2 Petroleum Deposits : Development Operations - 631 Fluid Flow - 631.1 Fluid Flow, General - 723.5 Computer Applications - 943.2 Mechanical Variables Measurements
DOI: 10.2118/174670-ms
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

115. Autonomous Community Architecture for Emergency Information's Transmission

Accession number: 20162202428708
Authors: Wei, Fan (1); Zhang, Xianwei (1)
Author affiliation: (1) School of Computer Science, Xian Shiyou University, Xian, Shaanxi; 710065, China
Source title: Proceedings - 2015 6th International Conference on Intelligent Systems Design and Engineering Applications, ISDEA 2015
Abbreviated source title: Proc. - Int. Conf. Intell. Syst. Des. Eng. Appl., ISDEA
Part number: 1of1
Issue title: Proceedings - 2015 6th International Conference on Intelligent Systems Design and Engineering Applications, ISDEA 2015
Issue date: April 28, 2016
Publication year: 2015
Pages: 167-170
Article number: 7462588
Language: English
ISBN-13: 9781467393935
Document type: Conference article (CA)
Conference name: 6th International Conference on Intelligent Systems Design and Engineering Applications, ISDEA 2015
Conference date: August 18, 2015 - August 19, 2015
Conference location: Guiyang, Guizhou, China
Conference code: 121367
Sponsor: Chinese Association for Artificial Intelligent; Hunan Institute of Engineering; St. John's University
Publisher: Institute of Electrical and Electronics Engineers Inc., United States
Abstract: Wireless Sensor Network (WSN) is widely used in Emergency Management System(EMS) to assure requirement of safety in current society. When emergency happens, real-Timely transmitting emergency information should be assured. But this requirement can not be satisfied by conventional approaches which are based on static situations and centralized management. In this paper, to assure real-Time transmission of emergency information, autonomous community architecture is proposed to construct a special group of routers, called community which includes main route for emergency information's transmission, and barrier which protects emergency information's transmission from influence of normal sensing information's transmission. The evaluation results indicate improvement of real-Time property of emergency information. © 2015 IEEE.
Number of references: 12
Main heading: Wireless sensor networks
Controlled terms: Civil defense - Computer architecture - Disasters - Network architecture - Information management - Risk management
Uncontrolled terms: Autonomous Community - Centralized management - Conventional approach - Emergency information - Emergency management systems - Real time - Real-time properties - Real-time transmissions
Classification code: 404.2 Civil Defense - 716.3 Radio Systems and Equipment - 722.3 Data Communication, Equipment and Techniques
DOI: 10.1109/ISDEA.2015.51
Compendex references: YES

Database: Compendex
Data Provider: Engineering Village

116. A New Optimal Deployment Algorithm for Actor Node in WSAN

Accession number: 20161902347221
Authors: Xiao, Zhongxiang (1); Yan, Jun (1); Yan, Xiaoying (2); Cheng, Guojian (2); Qiang, Xinjian (2)
Author affiliation: (1) School of Electronic Enginnering, Xi'An Shiyou University, Xi'an, China; (2) School of Computer Science, Xi'An Shiyou University, Xi'an, China
Source title: Proceedings - 2015 International Conference on Network and Information Systems for Computers, ICNISC 2015
Abbreviated source title: Proc. - Int. Conf. Netw. Inf. Syst. Comput., ICNISC
Part number: 1of1
Issue title: Proceedings - 2015 International Conference on Network and Information Systems for Computers, ICNISC 2015
Issue date: October 28, 2015
Publication year: 2015
Pages: 532-535
Article number: 7311944
Language: English
ISBN-13: 9781479918423
Document type: Conference article (CA)
Conference name: International Conference on Network and Information Systems for Computers, ICNISC 2015
Conference date: January 23, 2015 - January 25, 2015
Conference location: Wuhan, Hubei, China
Conference code: 119025
Publisher: Institute of Electrical and Electronics Engineers Inc., United States
Abstract: Cooperation of sensors and actors is an important research field in WSAN. To improve the efficiency of WSAN, based on QPSO (Quantum-behaved Particle Swarm Optimization), this paper proposed a new coverage optimization strategy for actor deployment in WSAN. By adopting a number of particles independently searching for solution space, they can share the current global optimal value at a certain communication rate. Through experiments, the results show that the proposed method is more effective than conventional ones in terms of coverage rate and real-time performance. © 2015 IEEE.
Number of references: 10
Main heading: Particle swarm optimization (PSO)
Controlled terms: Sensor nodes
Uncontrolled terms: Communication rate - Coverage optimizations - Optimal deployment - Quantum-behaved particle swarm optimization - Real time - Real time performance - Research fields - Wireless sensor and actor networks
Classification code: 716.3 Radio Systems and Equipment - 722 Computer Systems and Equipment - 723 Computer Software, Data Handling and Applications - 921.5 Optimization Techniques
DOI: 10.1109/ICNISC.2015.58
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

117. The design of the acoustic isolator used in acoustic telemetry while drilling (*Open Access*)

Accession number: 20154801631669
Authors: Haiming, Xie (1); Jing, Zhou (2); Feng, Zhang (3)
Author affiliation: (1) Xidian University, Xian, China; (2) Xian Shiyou University, Xian, China; (3) China Ship Scientific Research Center, Xian, China
Corresponding author: Haiming, Xie(haimingxie@xsyu.edu.cn)
Source title: Open Petroleum Engineering Journal
Abbreviated source title: Open Pet. Eng. J.
Volume: 8
Issue: 1
Issue date: 2015

Publication year: 2015
Pages: 427-433
Article number: A1
Language: English
ISSN: 18748341
Document type: Journal article (JA)
Publisher: Bentham Science Publishers B.V., P.O. Box 294, Bussum, 1400 AG, Netherlands
Abstract: The acoustic isolator is positioned between the bit and the transmitting transducer, it can attenuate a variety of front end of the drill noise signal to avoid the acoustic noise signal propagation along the drill collar, affecting the acoustic signal transmission and used to weaken the influence of downlink acoustic signal with the uplink channel produced by the transducer. This paper improved the characteristic analysis of tapered acoustic transmission model, designed of the size and structure of the acoustic isolator which has the transmission frequency channel of in 700~800Hz and 1200~1300Hz interval. © Haiming et al.; Licensee Bentham Open.
Number of references: 20
Main heading: Acoustic noise
Controlled terms: Acoustic wave transmission - Telemetering equipment - Drills - Transducers
Uncontrolled terms: Acoustic signals - Acoustic telemetry - Acoustic transmission - Characteristic analysis - Model analysis - Transmission frequencies - Uplink channel - While drillings
Classification code: 603.2 Machine Tool Accessories - 751.1 Acoustic Waves - 751.4 Acoustic Noise
Numerical data indexing: Frequency 1.20e+03Hz to 1.30e+03Hz, Frequency 7.00e+02Hz to 8.00e+02Hz
DOI: 10.2174/1874834101508010427
Compendex references: YES
Open Access type(s): All Open Access, Bronze
Database: Compendex
Data Provider: Engineering Village

118. Standard system of ESP teachers under the multi-level decision-making model

Accession number: 20161702294425
Authors: Zhao, Wei (1)
Author affiliation: (1) Xi'An Shiyou University, Xi'an; 710065, China
Corresponding author: Zhao, Wei(zhaowei_cn21@sina.com)
Source title: Proceedings - 2015 International Conference on Intelligent Transportation, Big Data and Smart City, ICITBS 2015
Abbreviated source title: Proc. - Int. Conf. Intell. Transp., Big Data Smart City, ICITBS
Part number: 1of1
Issue title: Proceedings - 2015 International Conference on Intelligent Transportation, Big Data and Smart City, ICITBS 2015
Issue date: January 14, 2016
Publication year: 2015
Pages: 749-752
Article number: 7384135
Language: English
ISBN-13: 9781509004645
Document type: Conference article (CA)
Conference name: International Conference on Intelligent Transportation, Big Data and Smart City, ICITBS 2015
Conference date: December 19, 2015 - December 20, 2015
Conference location: Halong Bay, Viet nam
Conference code: 119263
Sponsor: Changsha University of Science and Technology; Hunan University; Jilin Software Institute; Nanjing University of Forest
Publisher: Institute of Electrical and Electronics Engineers Inc., United States
Abstract: Based on the criteria for ESP teachers, this paper considers the four main aspects of ESP Teacher Standards System, ESP teaching profession System, ESP teachers' self-development and standard scope and ESP teachers. Multi-level decision making model based around the standard system ESP teachers, establish four factors set under the decision indicators from the system environment, comprehensive training system and teacher capacity building standard positioning system. © 2016 IEEE.
Number of references: 5
Main heading: Teaching
Controlled terms: Decision making - Personnel training

Uncontrolled terms: Capacity building - Decision - ESP teacher - Fuzzy comprehensive evaluation - Multi-level decisions - Standard system - System environment - Training Systems
Classification code: 912.2 Management - 912.4 Personnel
DOI: 10.1109/ICITBS.2015.189
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

119. Weak signal detection with duffing oscillator based on virtual instrument technology (*Open Access*)

Accession number: 20150600492160
Authors: Liu, Xuanchao (1); Ni, Wenlong (2)
Author affiliation: (1) Electronic Engineering Institute, Xi'an Shiyou University, Xi'an, Shaanxi, China; (2) Key Laboratory of Downhole Drilling Engineering of CNPC, Xi'an Shiyou University, Xi'an, Shaanxi, China
Source title: International Journal of Online Engineering
Abbreviated source title: Int. J. Online Eng.
Volume: 11
Issue: 1
Issue date: 2015
Publication year: 2015
Pages: 20-24
Language: English
ISSN: 18681646
E-ISSN: 18612121
Document type: Journal article (JA)
Publisher: Kassel University Press GmbH
Abstract: To obtain new ways of detecting weak signals, we analyzed the motion of a Duffing oscillator in different input states by solving the Duffing equation and then elaborating on the basic principles of weak signal detection based on Duffing oscillator phase-change characteristics. The experiment that shows how to achieve weak signal detection with a Duffing oscillator based on virtual instrument technology and then discusses the impact on signal detection coming from Gaussian white noise and how to implement weak signal detection with noise. The results show that a Duffing oscillator not only can be effective for detection of weak signals in the background of strong noises, but it also has high performance to cost ratio to achieve it with virtual instrument technology. Compared to existing methods, it can greatly improve the detection results and has broad application.
Number of references: 10
Main heading: Signal detection
Controlled terms: Oscillators (mechanical) - Digital instruments - White noise
Uncontrolled terms: Basic principles - Broad application - Duffing equations - Duffing oscillator - Gaussian white noise - Virtual instrument - Virtual instrument technology - Weak signal detection
Classification code: 601.1 Mechanical Devices - 716.1 Information Theory and Signal Processing
DOI: 10.3991/ijoe.v11i1.4114
Compendex references: YES
Open Access type(s): All Open Access, Gold
Database: Compendex
Data Provider: Engineering Village

120. Major Factors affecting simultaneous frac results

Accession number: 20153101077794
Authors: Zhou, Desheng (1); He, Pei (1)
Author affiliation: (1) Xian Petroleum University, China
Source title: SPE Production and Operations Symposium, Proceedings
Abbreviated source title: SPE Prod. Oper. Symp. Proc.
Volume: 2015-January
Part number: 1of1
Issue: January
Issue title: Society of Petroleum Engineers - SPE Production and Operations Symposium 2015: Driving Energy Independence

Issue date: 2015
Publication year: 2015
Pages: 532-545
Language: English
ISBN-13: 9781510800601
Document type: Conference article (CA)
Conference name: SPE Production and Operations Symposium 2015: Driving Energy Independence
Conference date: March 1, 2015 - March 5, 2015
Conference location: Oklahoma City, OK, United states
Conference code: 112875
Publisher: Society of Petroleum Engineers (SPE)
Abstract: Simultaneous multiple fracturing is a new hydraulic fracturing technology by fracturing two or more parallel horizontal wells simultaneously to improve oil and gas production. Quite a few simul-fracs have been down and some of them are successful in the industry up to now. Using boundary element method and rock failure criterion, a 2D geomechanical model was built to study the fracture complexity of simultaneous fracturing. In the paper, the differences of fracture propagating paths of fractures from simul-frac and two fractures from a stand- along horizontal well are compared. Also the effect of factors is studied, such as injection pressures, fracture spacing, and parallel well distances, on simul-frac results. With a lot of calculated graphs, the paper concludes that, for a homogeneous and isotropic rock, the two fractures form a simul-frac will propagate toward each other while the two fractures from one horizontal well will deviates away. Natural cracks in the rock may change the propagating direction of the two fractures and stop their pass through the rock to the opposite well. Natural cracks between the two fractures are always awaked, cracking, deflecting, and steering during simul-fracs, but the outside natural cracks may not be awaked and extended. The middle area between the two wells is the strong place of fracture and natural crack deflections, and interconnecting. For a better complex fracture network, the two fractures should be keep a horizontal distance and the two wells should be placed in a reasonable distance away. The paper demonstrates that, for some formations, a simul-frac treatment can limit the propagation of the fractures, make them change their original direction, communicate with natural cracks and form a complex fracture network easily. Copyright 2015, Society of Petroleum Engineers.
Number of references: 28
Main heading: Fracture
Controlled terms: Boundary element method - Sailing vessels - Complex networks - Cracks - Horizontal wells - Rocks - Petroleum engineering - Hydraulic fracturing
Uncontrolled terms: Effect of factors - Fracture complexity - Fracture spacing - Geomechanical model - Homogeneous and isotropic - Injection pressures - Multiple fracturing - Oil and gas production
Classification code: 512.1.1 Oil Fields - 512.1.2 Petroleum Deposits : Development Operations - 674.1 Small Marine Craft - 722 Computer Systems and Equipment - 921.6 Numerical Methods - 951 Materials Science
DOI: 10.2118/173633-ms
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

121. Research of Government Procurement Services Collaboration Model Base on the Fusion of Virtual Data Layer

Accession number: 20162202428729
Authors: Hong, Wang (1); Jianli, Du (1); Liumei, Zhang (1)
Author affiliation: (1) Xi'an Shiyou University, Xian, Shaanxi; 710065, China
Source title: Proceedings - 2015 6th International Conference on Intelligent Systems Design and Engineering Applications, ISDEA 2015
Abbreviated source title: Proc. - Int. Conf. Intell. Syst. Des. Eng. Appl., ISDEA
Part number: 1of1
Issue title: Proceedings - 2015 6th International Conference on Intelligent Systems Design and Engineering Applications, ISDEA 2015
Issue date: April 28, 2016
Publication year: 2015
Pages: 616-620
Article number: 7462695
Language: English
ISBN-13: 9781467393935
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Conference name: 6th International Conference on Intelligent Systems Design and Engineering Applications, ISDEA 2015
Conference date: August 18, 2015 - August 19, 2015
Conference location: Guiyang, Guizhou, China
Conference code: 121367
Sponsor: Chinese Association for Artificial Intelligent; Hunan Institute of Engineering; St. John's University
Publisher: Institute of Electrical and Electronics Engineers Inc., United States
Abstract: For problems existing in government procurement information systems, such as data sources diversity, redundancy and inconsistency, a virtual data integration layer procurement service collaboration model is proposed. Such model can establish a mapping function between key database of government procurement and virtual data layer for standardization of data reorganization. Then it realize the cross-sectoral collaborative procurement processes through the standardization of services. The research work focuses on the virtual data services layer modeling and SOA-based collaborative method. The practical application result shows: The model is successful in shared access and service integration of multi-source heterogeneous data, thus it improves the system scalability, moreover it has great reference value for the construction of the integrated government procurement system. © 2015 IEEE.
Number of references: 16
Main heading: Standardization
Controlled terms: Data integration
Uncontrolled terms: Collaboration models - Government procurement - Government procurement systems - Procurement process - Procurement services - Service integration - Virtual data - Virtual data integration
Classification code: 723.2 Data Processing and Image Processing - 902.2 Codes and Standards
DOI: 10.1109/ISDEA.2015.159
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

122. Controlling role of sedimentary environment on the distribution of organic-rich shale: A case study of the Chang7 member of the triassic Yanchang formation, Ordos basin

Accession number: 20153201107430
Authors: Er, Chuang (1, 2); Zhao, Jing-Zhou (1, 2); Wang, Rui (1); Wei, Zhi-Kun (1)
Author affiliation: (1) School of Earth Science and Engineering, Xi'an Shiyou University, Xi'an, China; (2) Shaanxi Key Lab of Petroleum Accumulation Geology, Xi'an Shiyou University, Xi'an, China
Source title: Natural Gas Geoscience
Abbreviated source title: Nat. Gas Geosci.
Volume: 26
Issue: 5
Issue date: May 10, 2015
Publication year: 2015
Pages: 823-832 and 892
Language: Chinese
ISSN: 16721926
Document type: Journal article (JA)
Publisher: Science Press
Abstract: The thickness and distribution of organic-rich shale are important parts of forming conditions appraising about shale gas and shale oil. The distribution of shale is controlled by sedimentary environments. This study determined the sedimentary environment of dark shale of the Chang 7 Member by field profile and cores. Vertical overlaying features of dark shale were confirmed by field profile and wells. Sedimentary structures and micro-bedding structures were delineated by cores and sections. Differences of total organic content and organic types between dark shale in different sedimentary environments were revealed by testing data and logging interpretation. Dark shale of the Chang 7 member distributes in the subaqueous distributary bay of delta front and semi-deep to deep lacustrine. In semi-deep to deep lacustrine, dark shale has great continuous thickness and sandstones have thin thickness. However, in delta front, dark shale has thin continuous thickness, shale and sandstone interbeddings have similar thickness or thin shale layer and thick sandstone layer. In semi-deep to deep lacustrine, dark shale always has lamellation, horizontal lamination and sandy lamination, whereas lamellation does not develop very well in delta front shales. Organic types of delta front are mainly type II2 and III, and type I and type II1 to semi-deep to deep lacustrine shales, respectively. TOC of semi-deep to deep lacustrine shale are higher than that of delta front shale. Based on these comparisons, we concluded that shales which distribute in semi-deep to deep lacustrine are the more favorable prospecting target for shale gas/oil in the Yanchang Formation. ©, 2015, Science Press. All right reserved.

Number of references: 20
Main heading: Sandstone
Controlled terms: Shale gas - Laminating - Sedimentology - Shale oil
Uncontrolled terms: Forming conditions - Logging interpretation - Organic-rich shales - Sedimentary environment - Sedimentary facies - Sedimentary structure - Total organic contents - Yanchang Formation
Classification code: 481.1 Geology - 482.2 Minerals - 512.2 Natural Gas Deposits - 522 Gas Fuels - 523 Liquid Fuels - 816.1 Processing of Plastics and Other Polymers
DOI: 10.11764/j.issn.1672-1926.2015.05.0823
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

123. Modeling the non-isothermal flow and the influencing factors in carbon dioxide injection wells (*Open Access*)

Accession number: 20154701582531
Authors: Dou, L. (1); Li, G. (2); Li, T. (1); Zhao, K. (1); Zhang, M. (1)
Author affiliation: (1) Xi'an Shiyou University, China; (2) China University of Petroleum, China
Source title: SOCAR Proceedings
Abbreviated source title: Proc.
Issue: 3
Issue date: 2015
Publication year: 2015
Pages: 27-34
Language: English
ISSN: 22186867
E-ISSN: 22188622
Document type: Journal article (JA)
Publisher: Oil Gas Scientific Research Project Institute
Abstract: In view of the special physical properties of CO2, Span-Wagner equation of state has been adopted to formulate a numerical procedure to model non-isothermal flow while injecting CO2, calculated by iterative coupling with CO2 physical parameter and pressure as well as heat. Compared with well site data of Well Cao 8 in Subei Oilfield, the error of predicted temperatures is within 1%, and the maximum error of pressures is less than 1.6%, the example shows that the developed procedure can offer accurate predictions. Moreover, the sensitivity analysis can be done through the research of influencing factors on the bottomhole pressure and temperature produced by injection temperature, injection pressure, injection rate and time, etc. The results obtained illustrate the significance for enhancing injection efficiency.
Number of references: 10
Main heading: Carbon dioxide
Controlled terms: Isotherms - Equations of state - Bottom hole pressure - Oil fields - Factor analysis - Sensitivity analysis
Uncontrolled terms: Bottom hole temperatures - Carbon dioxide injection - Influencing factors analysis - Injection efficiency - Injection temperature - Nonisothermal flows - Numerical procedures - Physical parameters
Classification code: 512 Petroleum and Related Deposits - 512.1.1 Oil Fields - 804.2 Inorganic Compounds - 921 Mathematics - 922.2 Mathematical Statistics
Numerical data indexing: Percentage 1.00e+00%, Percentage 1.60e+00%
DOI: 10.5510/OGP20150300249
Compendex references: YES
Open Access type(s): All Open Access, Bronze
Database: Compendex
Data Provider: Engineering Village

124. Influence of metal casing on the electric field in a cased hole

Accession number: 20161002064706
Authors: Wu, Yinchuan (1, 2); Guo, Baolong (1); Zhang, Miaoyu (1)
Author affiliation: (1) Xidian University, Xi'an, Shaanxi, China; (2) Xi'an Shiyou University, Xi'an, Shaanxi, China
Source title: Naukovyi Visnyk Natsionalnoho Hirnychoho Universytetu
Abbreviated source title: Nauk. Visn. Natsionalnoho Hirnychoho Univ.

Issue: 5
Issue date: 2015
Publication year: 2015
Pages: 29-36
Language: English
ISSN: 20712227
E-ISSN: 22232362
Document type: Journal article (JA)
Publisher: Natsional'nyi Hirnychyi Universytet
Abstract: Purpose. To study the influence of metal casing parameters (casing conductivity and casing thickness) on the electrical field and the second derivative of potential in cased hole formation resistivity technology. Methodology. The calculation formulas of the electrical field and the second derivative of potential were derived in multilayer media. Then the models of nondefective casing well and corrosion casing well were built in COMSOL soft. Moreover, both the electric field and the second derivative of potential were numerically calculated for nondefective casing well and corrosion casing well separately. Meanwhile, the influence of metal casing was analyzed. Findings. The lower the conductivity of the metal casing is, the stronger the electric field and the second derivative of potential are; the electric field and the second derivative of potential are affected by metal casing parameters. These changes are always in close relation to corrosion defects in metal casing. Originality. The models of cased hole were built in finite element analysis soft (COMSOL). The relation curve between the electrical field and casing parameters (conductivity and casing thickness) was obtained. The influence rule of metal casing was analyzed in detail. Practical value. The results are applied to instrument design and logging interpretation. © 2015 Yinchuan Wu, Baolong Guo, Miaoyu Zhang.
Number of references: 10
Main heading: Electric fields
Controlled terms: Finite element method - Metals - Corrosion
Uncontrolled terms: Cased hole - Cased-hole formation resistivities - Electrical field - Metal casing - Second derivatives
Classification code: 701.1 Electricity: Basic Concepts and Phenomena - 921.6 Numerical Methods
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

125. The design of the acoustic isolator used in acoustic telemetry while drilling (*Open Access*)

Accession number: 20162802577288
Authors: Xie, Haiming (1); Zhou, Jing (2); Zhang, Feng (3)
Author affiliation: (1) Xidian University, Xian; 710065, China; (2) Xian Shiyou University, Xian; 710065, China; (3) China Ship Scientific Research Center, Xian; 710000, China
Corresponding author: Xie, Haiming
Source title: Open Petroleum Engineering Journal
Abbreviated source title: Open Pet. Eng. J.
Volume: 8
Issue date: 2015
Publication year: 2015
Pages: 427-433
Language: English
ISSN: 18748341
Document type: Journal article (JA)
Publisher: Bentham Science Publishers B.V., P.O. Box 294, Bussum, 1400 AG, Netherlands
Abstract: The acoustic isolator is positioned between the bit and the transmitting transducer, it can attenuate a variety of front end of the drill noise signal to avoid the acoustic noise signal propagation along the drill collar, affecting the acoustic signal transmission and used to weaken the influence of downlink acoustic signal with the uplink channel produced by the transducer. This paper improved the characteristic analysis of tapered acoustic transmission model, designed of the size and structure of the acoustic isolator which has the transmission frequency channel of in 700~800Hz and 1200~1300Hz interval. © Haiming et al.; Licensee Bentham Open.
Number of references: 20
Main heading: Acoustic noise
Controlled terms: Telemetering equipment - Transducers - Drills - Acoustic wave transmission

Uncontrolled terms: Acoustic signals - Acoustic telemetry - Acoustic transmission - Characteristic analysis - Model analysis - Transmission frequencies - Uplink channel - While drillings
Classification code: 603.2 Machine Tool Accessories - 751.1 Acoustic Waves - 751.4 Acoustic Noise
Numerical data indexing: Frequency 1.20e+03Hz to 1.30e+03Hz, Frequency 7.00e+02Hz to 8.00e+02Hz
Open Access type(s): All Open Access, Bronze
Database: Compendex
Data Provider: Engineering Village

126. Trend technology's theory model and experiment verification for atmospheric optical scintillation

Accession number: 20154701574900
Authors: Yang, Changqi (1)
Author affiliation: (1) School of Science, Xi'an Shiyou University, Xi'an; 710065, China
Corresponding author: Yang, Changqi
Source title: Progress in Electromagnetics Research Symposium
Abbreviated source title: Prog. Electromagn. Res. Symp.
Volume: 2015-January
Part number: 1of1
Issue title: PIERS 2015 Prague - Progress In Electromagnetics Research Symposium, Proceedings
Issue date: 2015
Publication year: 2015
Pages: 92-94
Language: English
ISSN: 15599450
E-ISSN: 19317360
ISBN-13: 9781934142301
Document type: Conference article (CA)
Conference code: 113716
Sponsor: Brno University of Technology, Faculty of Electrical Engineering and Communication, Department of Theoretical and Experimental Electrical Engineering; Brno University of Technology, SIX - Research Centre of Sensor, Information and Communication System; Czech Technical University in Prague, Faculty of Biomedical Engineering (FBME), Department of Biomedical Technique; Czech Technical University in Prague, Faculty of Electrical Engineering (FEE), Department of EM Field; EMBS Chapter of the IEEE Czechoslovakia Section; et al.
Publisher: Electromagnetics Academy, United States
Abstract: Trend technology's theoretical model for atmospheric optical scintillation is establishes in this paper. For many years, people have always thought that atmospheric optics is completely random. In the previous paper, the author has used several experiments to overturn the traditional view. In this paper, the author will put forward a model to explain the author's point of view theoretically. It will demonstrate the process how does the optical scintillation evolve according to the trend. In this paper, the author will give the second batch of the experimental data to verify the theory model.
Number of references: 4
Main heading: Scintillation
Controlled terms: Atmospheric optics
Uncontrolled terms: Experiment verification - Optical scintillation - Theoretical modeling - Theory model
Classification code: 443.1 Atmospheric Properties - 741.1 Light/Optics
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

127. A New Overlay Network Optimization Method to Improve the Resource Search Efficiency

Accession number: 20161102095253
Authors: Wang, Xue Long (1)
Author affiliation: (1) School of Computer Science, Xi'An Shiyou University, Xi'an, China
Corresponding author: Wang, Xue Long(wxl3029@126.com)

Source title: Proceedings - 2015 7th International Conference on Measuring Technology and Mechatronics Automation, ICMTMA 2015
Abbreviated source title: Proc. - Int. Conf. Meas. Technol. Mechatronics Autom., ICMTMA
Part number: 1of1
Issue title: Proceedings - 2015 7th International Conference on Measuring Technology and Mechatronics Automation, ICMTMA 2015
Issue date: September 11, 2015
Publication year: 2015
Pages: 35-39
Article number: 7263508
Language: English
ISBN-13: 9781467371438
Document type: Conference article (CA)
Conference name: 7th International Conference on Measuring Technology and Mechatronics Automation, ICMTMA 2015
Conference date: June 13, 2015 - June 14, 2015
Conference location: Nanchang, Jiangxi, China
Conference code: 118120
Sponsor: Central South University of Forest and Technology; Hunan Institute of Industry; Institute of Spatial Information Technology; Shenzhen Research Institute of Central South University
Publisher: Institute of Electrical and Electronics Engineers Inc., United States
Abstract: Aimed at the low search efficiency of manufacture resource on the traditional unstructured super-peer overlay network, a new optimization method of overlay network is presented for improving its performance in this paper. Firstly, a hierarchy tree of manufacture resource is build, and then the resource is identified according to the tree. The peer's identification is calculated from all manufacturing resource identification stored in the peer. Then, the resource and the overlay are related according to their identification. Finally, all peers are clustered to form an interest community using the peer interest distance. The search request is restricted in the interest community. Experiment result shows that the scheme improves about 20 percent efficiency of resource query in compared with the before. © 2015 IEEE.
Number of references: 7
Main heading: Manufacture
Controlled terms: Efficiency - Forestry - Overlay networks
Uncontrolled terms: Interest communities - Manufacturing resource - Network optimization method - Optimization method - Resource hierarchies - Search efficiency - Searching - Topological optimization
Classification code: 537.1 Heat Treatment Processes - 821 Agricultural Equipment and Methods; Vegetation and Pest Control - 913.1 Production Engineering - 913.4 Manufacturing
Numerical data indexing: Percentage 2.00e+01%
DOI: 10.1109/ICMTMA.2015.17
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

128. Spectral-temporal description of dispersive wave emission and soliton trapping in micro-nano silicon-on-insulator waveguides

Accession number: 20151200660043
Authors: Wen, Jin (1); Ma, Chengju (1); Fan, Wei (1); Fu, Haiwei (1)
Author affiliation: (1) School of Science, Xi'An Shiyou University, Xi'an; 710065, China
Corresponding author: Wen, Jin(wenjin@opt.ac.cn)
Source title: Optics and Laser Technology
Abbreviated source title: Opt Laser Technol
Volume: 71
Issue date: August 2015
Publication year: 2015
Pages: 50-54
Language: English
ISSN: 00303992
CODEN: OLTCAS
Document type: Journal article (JA)

Publisher: Elsevier Ltd
Abstract: We numerically investigate the dispersive wave emission and soliton trapping in the process of femtosecond soliton propagation in silicon-on-insulator (SOI) waveguide. The cross-correlation frequency resolved optical gating (X-FROG) technique is employed to analyze the spectral-temporal dynamics of the soliton at different propagation distances. The numerical results show that dispersive wave emission can be blue-shifted (around 1300 nm) or red-shifted (around 1900 nm), which is determined by the dispersion slope for the pump wavelength (1550 nm). In addition, it can be found that red-shifted dispersive wave can supply contribution to the flatness of the supercontinuum generation. Through increasing the peak power of the soliton to 100 W, the soliton trapping can be observed by the edge of dispersive wave, which can be visualized in the form of multi-peak oscillation structure in the spectrogram when not considering the two-photon absorption (TPA). This work opens up the possibility for the realization of dispersive wave emission device in highly integrated circuit.
Number of references: 24
Main heading: Solitons
Controlled terms: Optical correlation - Supercontinuum generation - Two photon processes - Dispersion (waves) - Silicon on insulator technology - Waveguides
Uncontrolled terms: Cross-correlation frequency - Dispersive waves - Propagation distances - Silicon on insulator waveguide - SOI waveguides - Spectral-temporal dynamics - Super continuum - Two photon absorption
Classification code: 714.2 Semiconductor Devices and Integrated Circuits - 714.3 Waveguides - 741.1 Light/Optics - 741.1.1 Nonlinear Optics
Numerical data indexing: Power 1.00e+02W, Size 1.30e-06m, Size 1.55e-06m, Size 1.90e-06m
DOI: 10.1016/j.optlastec.2015.02.009
Funding Details: Number: 61275134, Acronym: NSFC, Sponsor: National Natural Science Foundation of China;
Funding text: This work was supported by the National Natural Science Foundation of China under Grant 61275134 .
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

129. Numerical study on propagation of the trapping pulse in high nonlinear silicon waveguides

Accession number: 20150300423540
Authors: Wen, Jin (1); Ma, Chengju (1); Fan, Wei (1)
Author affiliation: (1) Xi'an Shiyou University, School of Science, Xi'an; 710065, China
Corresponding author: Wen, Jin
Source title: Optical Engineering
Abbreviated source title: Opt Eng
Volume: 54
Issue: 1
Issue date: January 1, 2015
Publication year: 2015
Article number: 017103
Language: English
ISSN: 00913286
E-ISSN: 15602303
CODEN: OPEGAR
Document type: Journal article (JA)
Publisher: SPIE
Abstract: We numerically investigated the pulse trapping in high nonlinear silicon waveguides. The two orthogonally polarized components of the pulse can trap and copropagate as a unit in a silicon waveguide. Our numerical results show that the trapping pulse can stably propagate when the polarization mode dispersion is compensated by shifting the frequencies of two orthogonally polarized components. We also analyze the effects of the free-carrier absorption and initial polarization angles on the pulse propagation in a silicon waveguide. The proposed on-chip trapping pulse in the silicon waveguide exhibits compact configuration and can potentially have important applications in integrated optics.
Number of references: 37
Main heading: Nonlinear optics
Controlled terms: Optical waveguides - Polarization - Silicon
Uncontrolled terms: Free carrier absorption - High nonlinear - Numerical results - Polarization angle - Polarized components - Pulse propagation - Pulse trapping - Silicon waveguide

Classification code: 549.3 Nonferrous Metals and Alloys excluding Alkali and Alkaline Earth Metals - 714.3 Waveguides - 741.1.1 Nonlinear Optics - 741.3 Optical Devices and Systems
DOI: 10.1117/1.OE.54.1.017103
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

130. Algebraic structures related to nilpotent minimum algebras and rough sets

Accession number: 20154601555811
Authors: She, Yanhong (1); He, Xiaoli (1)
Author affiliation: (1) College of Science, Xi'An Shiyou University, Xi'an; 710065, China
Corresponding author: She, Yanhong(yanhongshe@gmail.com)
Source title: Journal of Intelligent and Fuzzy Systems
Abbreviated source title: J. Intelligent Fuzzy Syst.
Volume: 29
Issue: 4
Issue date: October 23, 2015
Publication year: 2015
Pages: 1367-1380
Language: English
ISSN: 10641246
E-ISSN: 18758967
Document type: Journal article (JA)
Publisher: IOS Press BV
Abstract: Equipping NM-algebras with a Brouwer-like negation $_{\sim}$, we introduce a kind of algebra under the name BZNMalgebra in the present paper and investigate its algebraic properties in detail. By means of the Brouwer-like negation $_{\sim}$ and the internal Kleene negation in NM-algebras, two types of modal operators μ and $_{\nu}$ on BZNM-algebras are defined. For any element a of BZNM-algebra, μ(a) and #(a) turn out to be the best approximation of $_{\alpha}$ from the bottom and the top, respectively, with Boolean skeleton serving as the collection of sharp elements. It is also shown that these two modal operators turn to have an S5 behavior. Additionally, various types of sharp elements with respect to the negation operators including #,b (an anti-intuitionistic negation) are defined, and the relationship between these sets and that of .-#idempotent $_{(\oplus}$–idempotent) elements are also investigated. It is then proved that the proposed BZNM-algebras are indeed equivalent to NM# algebras under a suitable transformation of operators. Furthermore, a special kind of BZNM-algebras, i.e., BZNM3-algebras, is investigated and its equivalent characterizations are given. A new type of rough approximation operators are proposed, and it is shown that such a pair of approximation operators is equivalent to the defined operators μ and $_{\nu}$. Finally, two interesting examples of BZNM-algebras are presented. © 2015-IOS Press and the authors.
Number of references: 33
Main heading: Algebra
Controlled terms: Rough set theory - Approximation algorithms
Uncontrolled terms: Algebraic properties - Algebraic structures - Approximation operators - Best approximations - brouwer-like negation - kleene negation - Nilpotent - Rough approximations
Classification code: 921 Mathematics - 921.1 Algebra - 921.4 Combinatorial Mathematics, Includes Graph Theory, Set Theory
DOI: 10.3233/IFS-141510
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

131. Service evolution in clouds for dementia patient monitoring system usability enhancement (*Open Access*)

Accession number: 20172803920085
Authors: Wang, Zhe (1); Cheng, Guojian (2)
Author affiliation: (1) Edinburgh Napier University, United Kingdom; (2) Xi'an Shiyou University, China
Corresponding author: Wang, Zhe
Source title: E-Health and Telemedicine: Concepts, Methodologies, Tools, and Applications
Abbreviated source title: E-Health and Telemed.: Concepts, Methodol., Tools, and Appl.

Volume: 3
Issue date: September 23, 2015
Publication year: 2015
Pages: 1606-1634
Language: English
ISBN-10: 1466687568
ISBN-13: 9781466687561
Document type: Book chapter (CH)
Publisher: IGI Global
Abstract: The authors present an analysis which concludes that most e-health system are packaged for large-scale access through cloud-based services shared in a real-time service deployment environment. The service, which has already been deployed in the clouds for e-health construction, needs to instantly change itself in order to enhance the usability for the patients, especially for the dementia patient monitoring system. The evolution for the service in cloud-based systems can be driven fundamentally based on the service function improvement, quality of service improvement, and service collaboration improvement, which can greatly enhance the usability of the dementia patient monitoring system and dynamically enlarge the life-cycle of the current service system in clouds without replacing the reusable service components. The quality of service evolution of the dementia patient monitoring system is essential because the system reliability and instant messaging sending ability is needed in the dementia patient monitoring system. The system should be as reliable as possible for its undertaken the people,s life and healthy ensure for all those who use the system. © 2016 by IGI Global. All rights reserved.
Number of references: 56
Main heading: Quality of service
Controlled terms: Neurodegenerative diseases - eHealth - Life cycle - Information services
Uncontrolled terms: Dementia patients - e-Health systems - Instant messaging - Real time service - Reusable services - Service evolutions - Service functions - System reliability
Classification code: 461.6 Medicine and Pharmacology - 903.4 Information Services
DOI: 10.4018/978-1-4666-8756-1.ch080
Compendex references: YES
Open Access type(s): All Open Access, Green
Database: Compendex
Data Provider: Engineering Village

132. Time delay module design, simulation and synthesis based on FPGA for dielectric dispersion logging

Accession number: 20154701574889
Authors: Yang, Changqi (1); Liu, Simin (1); Yang, Liuyi (1); Yang, Cheng (1)
Author affiliation: (1) School of Science, Xi'an Shiyou University, Xi'an; 710065, China
Source title: Progress in Electromagnetics Research Symposium
Abbreviated source title: Prog. Electromagn. Res. Symp.
Volume: 2015-January
Part number: 1of1
Issue title: PIERS 2015 Prague - Progress In Electromagnetics Research Symposium, Proceedings
Issue date: 2015
Publication year: 2015
Pages: 41-44
Language: English
ISSN: 15599450
E-ISSN: 19317360
ISBN-13: 9781934142301
Document type: Conference article (CA)
Conference code: 113716
Sponsor: Brno University of Technology, Faculty of Electrical Engineering and Communication, Department of Theoretical and Experimental Electrical Engineering; Brno University of Technology, SIX - Research Centre of Sensor, Information and Communication System; Czech Technical University in Prague, Faculty of Biomedical Engineering (FBME), Department of Biomedical Technique; Czech Technical University in Prague, Faculty of Electrical Engineering (FEE), Department of EM Field; EMBS Chapter of the IEEE Czechoslovakia Section; et al.
Publisher: Electromagnetics Academy, United States

Abstract: A few years ago, a kind of dielectric scanning imaging logging instrument emerged in the foreign markets. That instrument scanned the earth at different frequency electromagnetic wave. It can measure the dielectric constant at different frequencies of the layer. There is not any similar instrument developed at home. Xi'an Shiyou University has launched a project to develop a comparable instrument. This paper introduces the basic principle of dielectric dispersion logging. A general layout is given for the dielectric dispersion logging. The time delay module is simulated and synthesized based on FPGA. This laid the foundation for the development of comparable instruments gradually.
Number of references: 7
Main heading: Timing circuits
Controlled terms: Field programmable gate arrays (FPGA) - Electromagnetic waves - Time delay - Integrated circuit design
Uncontrolled terms: Basic principles - Different frequency - Foreign markets - Module design - Scanning imaging
Classification code: 711 Electromagnetic Waves - 713 Electronic Circuits - 713.4 Pulse Circuits - 714.2 Semiconductor Devices and Integrated Circuits - 721.2 Logic Elements
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

133. Analysis on the aperture averaging weight factor for equidistant dual-aperture receiver

Accession number: 20154701574899
Authors: Yang, Changqi (1); Liu, Simin (1)
Author affiliation: (1) School of Science, Xi'an Shiyou University, Xi'an; 710065, China
Source title: Progress in Electromagnetics Research Symposium
Abbreviated source title: Prog. Electromagn. Res. Symp.
Volume: 2015-January
Part number: 1of1
Issue title: PIERS 2015 Prague - Progress In Electromagnetics Research Symposium, Proceedings
Issue date: 2015
Publication year: 2015
Pages: 88-91
Language: English
ISSN: 15599450
E-ISSN: 19317360
ISBN-13: 9781934142301
Document type: Conference article (CA)
Conference code: 113716
Sponsor: Brno University of Technology, Faculty of Electrical Engineering and Communication, Department of Theoretical and Experimental Electrical Engineering; Brno University of Technology, SIX - Research Centre of Sensor, Information and Communication System; Czech Technical University in Prague, Faculty of Biomedical Engineering (FBME), Department of Biomedical Technique; Czech Technical University in Prague, Faculty of Electrical Engineering (FEE), Department of EM Field; EMBS Chapter of the IEEE Czechoslovakia Section; et al.
Publisher: Electromagnetics Academy, United States
Abstract: Free-space optical communication receiver aperture is usually a single circular aperture. When the aperture size is large, its cost will be high. This paper proposes a new receiver aperture structure: equidistant dual-aperture receiver. The authors analyze its performance. Aperture Averaging Weight Factors of the two kinds of receiver structures are compared. The analysis results show that: Equidistant dual-aperture receiver can obviously decrease the Aperture Averaging Weight Factor, and reduce the optical scintillation.
Number of references: 4
Main heading: Factor analysis
Controlled terms: Optical communication
Uncontrolled terms: Aperture averaging - Aperture sizes - Circular aperture - Free Space Optical communication - Optical scintillation - Receiver structure - Weight factor
Classification code: 717.1 Optical Communication Systems - 922.2 Mathematical Statistics
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

134. Analysis of influence factors of the result of numerical simulation in cathodic protection

Accession number: 20143618143071
Authors: Chen, Bing (1); Li, Jiaqi (1)
Author affiliation: (1) School of Mechanical Engineering, Xi'an Shiyou University, Xi'an, Shaanxi, China
Source title: Resources, Environment and Engineering - Proceedings of the 2014 Technical Congress on Resources, Environment and Engineering, CREE 2014
Abbreviated source title: Resour., Environ. Eng. - Proc. Tech. Congr. Resour., Environ. Eng., CREE
Issue title: Resources, Environment and Engineering - Proceedings of the 2014 Technical Congress on Resources, Environment and Engineering, CREE 2014
Issue date: 2015
Publication year: 2015
Pages: 347-350
Language: English
ISBN-13: 9781138027022
Document type: Conference article (CA)
Conference name: 2014 Technical Congress on Resources, Environment and Engineering, CREE 2014
Conference date: September 6, 2014 - September 7, 2014
Conference location: Hong Kong, Hong kong
Conference code: 107253
Publisher: Taylor and Francis - Balkema
Abstract: Numerical simulation technology provides a new way for potential acquisition in cathodic protection engineering, and becomes the focus of the researches. The criterion of correct result is whether the result of numerical simulation can correctly reflect the actual potential of the protected metal or not. This paper has been analyzed from the composition content of numerical simulation in cathodic protection and pointed out that the acquisition of cathode boundary conditions and processing methods have important influence on the reasonable of cathodic protection numerical simulation result.
Number of references: 17
Main heading: Cathodic protection
Controlled terms: Numerical methods - Numerical models
Uncontrolled terms: Analysis of influence factors - Composition content - Processing method - Simulation technologies
Classification code: 539.2 Corrosion Protection - 921 Mathematics - 921.6 Numerical Methods
DOI: 10.1201/b17389-58
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

135. Advances in simulation study on organic small molecular solar cells

Accession number: 20151100635613
Authors: Zhang, Xuan (1); Guo, Wenge (1); Li, Ming (1); Ma, Wentao (1); Meng, Sen (1)
Author affiliation: (1) Xi'an Shiyou University, School of Science, Xi'an Shaanxi; 710065, China
Source title: Proceedings of SPIE - The International Society for Optical Engineering
Abbreviated source title: Proc SPIE Int Soc Opt Eng
Volume: 9449
Volume title: International Conference on Photonics and Optical Engineering, icPOE 2014
Part number: 1of1
Issue date: 2015
Publication year: 2015
Article number: 94493M
Language: English
ISSN: 0277786X
E-ISSN: 1996756X
CODEN: PSISDG
ISBN-13: 9781628415650
Document type: Conference article (CA)
Conference name: International Conference on Photonics and Optical Engineering, icPOE 2014
Conference date: October 13, 2014 - October 15, 2014

Conference location: Xi'an, China
Conference code: 111356
Sponsor: Optics and Photonics Society of Singapore; Shaanxi Optical Society; Shaanxi Provincial Physical Society
Publisher: SPIE
Abstract: Recently, more focuses have been put on organic semiconductors because of its advantages, such as its flexibility, ease of fabrication and potential low cost, etc. The reasons we pay highlight on small molecular photovoltaic material are its ease of purification, easy to adjust and determine structure, easy to assemble range units and get high carrier mobility, etc. Simulation study on organic small molecular solar cells before the experiment can help the researchers find relationship between the efficiency and structure parameters, properties of material, estimate the performance of the device, bring the optimization of guidance. Also, the applicability of the model used in simulation can be discussed by comparison with experimental data. This paper summaries principle, structure, progress of numerical simulation on organic small molecular solar cells.. © 2015 SPIE.
Number of references: 51
Main heading: Organic solar cells
Controlled terms: Heterojunctions - Solar power generation - Numerical models
Uncontrolled terms: Bulk heterojunction - High carrier mobility - Low costs - Organic small molecular - Photovoltaic materials - Simulation studies - Small molecular - Structure parameter
Classification code: 615.2 Solar Power - 702.3 Solar Cells - 714.2 Semiconductor Devices and Integrated Circuits - 921 Mathematics
DOI: 10.1117/12.2075692
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

136. Study on a new polydentate pyridylamine and its complexes: Synthesis, supramolecular structure and properties (*Open Access*)

Accession number: 20154801621045
Authors: Ismayilov, R.H. (1, 2); Wang, W.Z. (2); Lee, G.H. (2); Peng, S.M. (2)
Author affiliation: (1) OilGasScientificResearchProject Institute, Taiwan; (2) National Taiwan University, Xi'An Shiyou University, China
Source title: SOCAR Proceedings
Abbreviated source title: Proc.
Issue: 1
Issue date: 2015
Publication year: 2015
Pages: 74-82
Language: English
ISSN: 22186867
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Document type: Journal article (JA)
Publisher: Oil Gas Scientific Research Project Institute
Abstract: New ligand, N2-(6-aminopyridin-2-yl)-N6-(pyridin-2-yl)pyridine-2,6-diamine (abbreviated as tripyridyltriamine-H3tptra) (1), its protonated analog [H4tptra](ClO4) (2) and copper(II) (3), nickel(II) (4), iron(II) (5) and cobalt(II) (6) complexes have been synthesized and structurally characterized. The protonated ligand cation (2) exhibits an anti-anti-syn-anti-syn conformation. H3tptra coordinates to the Cu(II) as a quadridentate ligand in 3. The copper(II) ion is six-coordinated in an elongated octahedral coordination geometry. The perchlorate anions are relatively weakly coordinated in the axial positions. In complexes Ni(II), Fe(II) and Co(II) two ligands are bound directly to the metal ion as tridentate to give a MN6 chromophore (M-metal atom). Extensive hydrogen bonds are formed and construct the compound 2 into 1D and 3 into 3D supramolecular structure, whereas dimer structure have been found for 4 and 5 complexes through hydrogen bonds. X-band EPR spectra of Cu(II) complex showed well-resolved hyperfine structure resulting from the two paramagnetic isotopes 63Cu and 65Cu (g = 2.128 and A0 = 62.7 × 10-4 cm-1) and also superhyperfine coupling from four 14N (I = 1) atoms, yielding A||N = 16 × 10-4 cm-1 and A#N = 9 × 10-4 cm-1. The magnetic behavior of 6 obeys the Curie-Weiss law. The best fitting result according to the Curie-Weiss expression leads to a value of g = 2.49 and $_{\theta}$ =-3.71 K.
Number of references: 24
Main heading: Ligands
Controlled terms: Protonation - Copper compounds - Transition metals - Chromophores - Complexation - Metal complexes - Metal ions - Supramolecular chemistry - Chelation - Nickel compounds - Synthesis (chemical)

- Hydrogen bonds - Inorganic compounds - Electron spin resonance spectroscopy - Indium compounds - Iron compounds - Zinc compounds - Cobalt compounds
Uncontrolled terms: Axial positions - Curie Weiss law - Dimer structure - Hyperfine structure - Magnetic behavior - Octahedral coordination geometry - Perchlorate anions - Supramolecular structure
Classification code: 531 Metallurgy and Metallography - 531.1 Metallurgy - 801 Chemistry - 801.4 Physical Chemistry - 802.2 Chemical Reactions - 804.1 Organic Compounds - 804.2 Inorganic Compounds
DOI: 10.5510/OGP20150100236
Compendex references: YES
Open Access type(s): All Open Access, Bronze
Database: Compendex
Data Provider: Engineering Village

137. Ontology-based scientific service instant response system design (*Open Access*)

Accession number: 20151100641388
Authors: Wang, Xiaoning (1); Fang, Xing (1); Hou, Ke (1)
Author affiliation: (1) School of Economic and Management, Xi'an Shiyou University, Xi'an, China
Corresponding author: Wang, Xiaoning
Source title: Journal of Software Engineering
Abbreviated source title: J. Softw. Eng.
Volume: 9
Issue: 3
Issue date: 2015
Publication year: 2015
Pages: 574-585
Language: English
ISSN: 18194311
E-ISSN: 21520941
Document type: Journal article (JA)
Publisher: Academic Journals Inc.
Abstract: With the trend of scientific resources getting more important and the resource amount turning to massive, the precision and scalability become key factor of the scientific service system. This study builds the Scientific Service Instant Response System (SSIRS) with the technology of semantic web, cloud computing and parallel processing. For OWL data reasoning, the method which is used to transform scientific datainto OWL data was proposed and the composite suggestion algorithm was achieved. MapReduce programming model was used to process data and the task abstract on multi-core with TBB was done. The experiment result showed that the SSIRS improves the searching efficiency, precision and scalability. © 2015 Academic Journals Inc.
Number of references: 20
Main heading: Scalability
Controlled terms: Ontology - Birds - Distributed computer systems
Uncontrolled terms: Map-reduce programming - OWL - Parallel processing - Resource amount - Response systems - Scientific resources - Scientific service - Searching efficiency
Classification code: 722.4 Digital Computers and Systems - 961 Systems Science
DOI: 10.3923/jse.2015.574.585
Open Access type(s): All Open Access, Bronze
Database: Compendex
Data Provider: Engineering Village

138. Application of curvature driven diffusion model in lateral multi-lens video logging image inpainting

Accession number: 20162902612963
Authors: Hongtao, Hu (1); Xiao, Tong (1)
Author affiliation: (1) School of Computer Science, Xi'An Shiyou University, Xi'an; 710065, China
Source title: 2015 IEEE 12th International Conference on Electronic Measurement and Instruments, ICEMI 2015
Abbreviated source title: IEEE Int. Conf. Electron. Meas. Instruments, ICEMI
Volume: 3
Part number: 3of3
Issue title: 2015 IEEE 12th International Conference on Electronic Measurement and Instruments, ICEMI 2015

Issue date: June 16, 2016
Publication year: 2015
Pages: 1167-1171
Article number: 7494460
Language: English
ISBN-13: 9781479976195
Document type: Conference article (CA)
Conference name: 12th IEEE International Conference on Electronic Measurement and Instruments, ICEMI 2015
Conference date: July 16, 2015 - July 18, 2015
Conference location: Qingdao, China
Conference code: 122296
Sponsor: Chinese Institute of Electronics (CIE); IEEE Beijing Section
Publisher: Institute of Electrical and Electronics Engineers Inc., United States
Abstract: In order to restore the image's defect which results from the lateral multi-lens video logging device. This paper proposes an image inpainting model algorithm based on curvature driven diffusion model which uses the thermal diffusion principle in Physics, diffusing the surrounding information to the region which needs to be repaired. Firstly, introduce the curvature factor to the diffusion coefficient of TV inpainting model. Secondly, discretize the divergence function. And according to the surrounding pixel information, calculate the defect pixel information which needs to be restored. Finally, fill the calculation results into the defect region of image to complete image defect restoring process. The experimental results show that the algorithm improves the connectivity deficiency of TV model, making the result image looks natural and satisfies the precision accuracy of image logging. © 2015 IEEE.
Number of references: 15
Main heading: Defects
Controlled terms: Diffusion - Image enhancement - Pixels - Restoration - Image reconstruction
Uncontrolled terms: Calculation results - Curvature-driven diffusions - Image defects - Image Inpainting - Model algorithms - Multi-lens - Pixel information - TV models
Classification code: 951 Materials Science
DOI: 10.1109/ICEMI.2015.7494460
Funding text: We are grateful to the Natural Sciences Research Foundation of China for their financial supported under Grant No.608770 11 for this paper.
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

139. Correcting hole enlargement impacts on density logs for coalbed methane reservoirs (*Open Access*)

Accession number: 20152200881884
Authors: Liu, Zhidi (1); Zhao, Jingzhou (1)
Author affiliation: (1) School of Earth Sciences and Engineering, Xi'an Shiyou University, Xi'an, China
Corresponding author: Liu, Zhidi
Source title: Open Petroleum Engineering Journal
Abbreviated source title: Open Pet. Eng. J.
Volume: 8
Issue: 1
Issue date: 2015
Publication year: 2015
Pages: 72-77
Language: English
ISSN: 18748341
Document type: Journal article (JA)
Publisher: Bentham Science Publishers B.V., P.O. Box 294, Bussum, 1400 AG, Netherlands
Abstract: Density logging is an effective method in the evaluation of coalbed methane (CBM) reservoirs. Whether density log values effectively represent true density of coal will directly determine precision of evaluating coalbed methane parameter logs. In this paper, a statistical method is used to analyze density log response characteristics and hole enlargement rate for three main coal beds in the study area in order to determine the internal relation between hole enlargement rate and density response. Analytical results show that distortion of density log response values is caused mainly by hole enlargement impacts. Based on the apparent geometric factor theory, a model suitable for correcting hole enlargement impacts density logs for coalbed methane reservoirs has been deduced. To correct

density logs for hole enlargement influences, it is key to determine a mud apparent geometric factor. Using measured apparent relative density, density log values and caliper logs for coal rock, the least squares fitting method was adopted to obtain computation model constants for the mud apparent geometric factor applicable to the study area. When this model was applied in a computer auto-correcting process for evaluating enlargement impacts on density logs for coalbed methane reservoirs of the Hancheng gas field in the eastern section of Ordos Basin, China, the correction results were very close to measured relative density, indicating that this method can improve precision of correcting hole enlargement impacts on density logs. © Liu and Zhao; Licensee Bentham Open.
Number of references: 13
Main heading: Coal bed methane
Controlled terms: Least squares approximations - Natural gas wells - Coal - Computation theory - Coal deposits - Firedamp - Gas industry - Methane - Geometry
Uncontrolled terms: Analytical results - Coalbed methane reservoir - Coalbed methanes - Density log - Geometric factors - Hole enlargement impact - Least-squares-fitting method - Ordos basin , China
Classification code: 503 Mines and Mining, Coal - 512.2 Natural Gas Deposits - 512.2.1 Natural Gas Fields - 522 Gas Fuels - 524 Solid Fuels - 721.1 Computer Theory, Includes Formal Logic, Automata Theory, Switching Theory, Programming Theory - 804.1 Organic Compounds - 921 Mathematics - 921.6 Numerical Methods
DOI: 10.2174/1874834101508010072
Open Access type(s): All Open Access, Hybrid Gold
Database: Compendex
Data Provider: Engineering Village

140. Virtual Simulation of Well Control Operation System

Accession number: 20165303204657
Authors: Wang, Jiangping (1); Yang, Zhiqin (1)
Author affiliation: (1) School of Mechanical Engineering, Xi'an Shiyou University, Xi'an, Shaanxi; 710065, China
Source title: Proceedings - 8th International Conference on Intelligent Computation Technology and Automation, ICICTA 2015
Abbreviated source title: Proc. - Int. Conf. Intell. Comput. Technol. Auto., ICICTA
Part number: 1of1
Issue title: Proceedings - 8th International Conference on Intelligent Computation Technology and Automation, ICICTA 2015
Issue date: May 18, 2016
Publication year: 2015
Pages: 1105-1108
Article number: 7473498
Language: English
ISBN-13: 9781467376440
Document type: Conference article (CA)
Conference name: 8th International Conference on Intelligent Computation Technology and Automation, ICICTA 2015
Conference date: June 14, 2015 - June 15, 2015
Conference location: Nanchang, Jiangxi, China
Conference code: 121722
Sponsor: Communications Research Institute of Changsha University of Science and Technology; Hong Kong Intelligent Computation Technology and Automation Association; Shenzhen Research Institute of Central South University
Publisher: Institute of Electrical and Electronics Engineers Inc., United States
Abstract: A virtual operation system of well drilling control installation is introduced based on LabVIEW. 3D model of a blow-out preventer (BOP) is created with 3Ds Max. The animation of starting the BOP by virtual operation instrument is also designed to imitate the interaction between the well control equipment and men. The virtual simulation of well control operation system demonstrated in this paper can be used not only to train the workers, but also analysis the intricate problems in the drilling process. © 2015 IEEE.
Number of references: 5
Main heading: Control equipment
Controlled terms: Digital instruments
Uncontrolled terms: 3ds max - Drilling process - LabViEW - simulation - Virtual instrument - Virtual operations - Virtual simulations - Well control
Classification code: 732.1 Control Equipment
DOI: 10.1109/ICICTA.2015.277
Compendex references: YES

Database: Compendex
Data Provider: Engineering Village

141. Synthesis, crystal structure and catalytic properties of the new peroxy molybdate (NH4)4(CH6N3)2 [Mo7O23(O2)]·3H2O

Accession number: 20152801011226
Authors: Liu, Xue-Mei (1); Shao, Kai-Wen (1); Shao, Rui-Bo (1)
Author affiliation: (1) School of Chemistry and Chemical Engineering, Xi'an Shiyou University, Xi'an, China
Source title: Rengong Jingti Xuebao/Journal of Synthetic Crystals
Abbreviated source title: Rengong Jingti Xuebao
Volume: 44
Issue: 5
Issue date: May 1, 2015
Publication year: 2015
Pages: 1409-1415
Language: Chinese
ISSN: 1000985X
CODEN: RJXUEN
Document type: Journal article (JA)
Publisher: Chinese Ceramic Society
Abstract: A new monoperoxoheptamolybdate (NH4)4(CH6N3)2 [Mo7O23(O2)]·3H2O was synthesized by reacting of ammonium molybdate, guanidine hydrochloride and 30% Hydrogen peroxide as the oxidant in aqueous solution at room temperature. It was characterized by elemental analysis, single crystal X-ray diffraction, IR and solid UV-Vis diffuse reflectance spectroscopy. The title compound belongs to monoclinic system with space group P21/n, a=1.367(14) nm, b=1.085(11) nm, c=2.748(3) nm, β=93.15(2)°, V=4.0685(7) nm3, Z=4, Dc=2.031 g·cm-3, R1=0.0713, wR2=0.2199(I>2#), GOF=1.03. By using the title compound as the catalyst and 30% H2O2 as the oxidant, the effects of catalyst dosage, oxidant dosage, reaction time and reaction temperature etc. on the oxidation of benzyl alcohol to benzoic acid were investigated. The optimal reaction conditions are as follows: n(catalyst):n(benzyl alcohol)=0.063:1, n(H2O2):n(benzyl alcohol)=40:1; reaction temperature 85 and reaction time 7 h, the yield of benzoic acid can reach 82.2%.
Number of references: 22
Main heading: Crystal structure
Controlled terms: Catalysts - Oxidants - Benzoic acid - Single crystals - Solutions - X ray diffraction - Catalytic oxidation
Uncontrolled terms: Ammonium molybdate - Catalytic properties - Guanidine hydrochloride - Optimal reaction condition - Peroxomolybdate - Reaction temperature - Single crystal x-ray diffraction - UV-Vis diffuse reflectance spectroscopy
Classification code: 451.2 Air Pollution Control - 803 Chemical Agents and Basic Industrial Chemicals - 804 Chemical Products Generally - 804.1 Organic Compounds - 933.1 Crystalline Solids - 933.1.1 Crystal Lattice
Numerical data indexing: Percentage 3.00e+01%, Percentage 8.22e+01%, Time 2.52e+04s
Database: Compendex
Data Provider: Engineering Village

142. Forecasting language test performance with a back propagation neural network model

Accession number: 20161102105398
Authors: Dong, Mei (1)
Author affiliation: (1) English Department, School of Foreign Languages, Xi'An Shiyou University, Xi'an, China
Corresponding author: Dong, Mei
Source title: Proceedings - International Conference on Natural Computation
Abbreviated source title: Proc. Int. Conf. Nat. Comput.
Volume: 2016-January
Part number: 1of1
Issue title: 2015 11th International Conference on Natural Computation, ICNC 2015
Issue date: January 8, 2016
Publication year: 2015
Pages: 813-819
Article number: 7378096

Language: English
ISSN: 21579555
ISBN-13: 9781467376792
Document type: Conference article (CA)
Conference name: 11th International Conference on Natural Computation, ICNC 2015
Conference date: August 15, 2015 - August 17, 2015
Conference location: Zhangjiajie, China
Conference code: 118970
Publisher: IEEE Computer Society
Abstract: Though researchers agree that test anxiety is one of the most debilitating factors that deteriorates the test performance of test-takers who are often anxious during examinations, it is generally neglected when calculating test scores by both classical and modern testing theories. This inevitably leads to the fact that most anxious test-takers' test performance has been seriously underestimated, which greatly undermines equality, one of the fundamental principles of language testing. In order to tackle this daunting problem in language testing arena, this study constructs a back propagation forecasting neural network model, aiming to make forecast on the performance of test-takers in large-scale English proficiency tests. It is expected that this study may pave the way for putting English test anxiety into consideration when calculating scores of test takers in high-stake English proficiency tests. Simulation result indicates that the back propagation neural network forecasting model in this study is accurate when used to predict normal scores, while not satisfactory for extreme scores. Therefore, it is suggested that more input variables should be included in future studies in order to improve forecast precision. Imperfect as this back propagation neural network forecasting model possibly is judged by neural networks professionals, the study is significant to language testing research since the employment of neural network technology is a bold attempt in language testing arena, which implies the possibility of solving some long-pending problems in this area with technology-enriched solutions that have long been adopted by science and engineering researchers. What's more, it also strengthens the necessity of enhancing collaboration between science and engineering researchers and language testing professionals so as to introduce neural networks theory to more and more challenging fields and bring language testing research onto a new stage. © 2015 IEEE.
Number of references: 28
Main heading: Backpropagation
Controlled terms: Forecasting - Modeling languages - Torsional stress - Neural network models - Testing
Uncontrolled terms: Back propagation neural networks - Forecast precision - Forecasting modeling - Fundamental principles - Network technologies - Neural network model - Proficiency tests - Science and engineering
Classification code: 723.4 Artificial Intelligence
DOI: 10.1109/ICNC.2015.7378096
Funding text: The author would like to express her heartfelt gratitude to the 46 undergraduates who have taken part in this research. Without their participation, the fulfillment of this study would be impossible. In addition, her thanks also go to all the editors and staffs who have kindly read and checked her manuscript. Thank you for their valuable guidance, comments and suggestions.
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

143. Study on phase composition and microstructure of boron nitride fibers fabricated by chemical reaction and heat treatment process

Accession number: 20155301741897
Authors: Jiang, Tao (1)
Author affiliation: (1) School of Materials Science and Engineering, Xi'an Shiyou University, Xi'an, China
Corresponding author: Jiang, Tao(jiangtaoxsyu@xsyu.edu.cn)
Source title: Rengong Jingti Xuebao/Journal of Synthetic Crystals
Abbreviated source title: Rengong Jingti Xuebao
Volume: 44
Issue: 11
Issue date: November 1, 2015
Publication year: 2015
Pages: 3184-3189 and 3200
Language: Chinese
ISSN: 1000985X

CODEN: RJXUEN
Document type: Journal article (JA)
Publisher: Chinese Ceramic Society
Abstract: The boron nitride fibers were fabricated by chemical reaction and heat treatment of H3BO3and C3H6N6powders. The thermal analysis curves (TG and DSC) of H3BO3and C3H6N6mixture powders during heat treatment at high temperature were investigated. The phase composition, infrared spectrum and microstructure of the BN fibers prepared by heat treatment process at different temperatures were investigated. The phase composition and infrared spectrum results show that the amorphous BN fibers can be prepared by the reaction of H3BO3and C3H6N6at 600 , then the amorphous BN fibers gradually transform into the hexagonal BN fiber by heat treatment process at high temperature. The microstructure shows that the H3BO3and C3H6N6produce the fibrous precursor, then the fibrous precursor transforms into the h-BN fibers by chemical reaction process and heat treatment process. The microstructure shows that the BN fibers can be prepared by heat treatment at 1500-1800 , and the length of BN fibers is about 20-30 μm and diameter of BN fibers is about 0.5-1 μm. The TEM images show that the crystalline h-BN fibers can be prepared by heat treatment process at 1800 .
Number of references: 17
Main heading: Fibers
Controlled terms: Phase composition - III-V semiconductors - Nitrides - Thermoanalysis - Microstructure - Boron nitride - Spectroscopy - Fabrication - Chemical reactions - Heat treatment - Powders
Uncontrolled terms: Chemical reaction process - Heat treatment process - High temperature - Infrared spectrum - TEM images - Thermal analysis curve
Classification code: 537.1 Heat Treatment Processes - 641.1 Thermodynamics - 712.1 Semiconducting Materials - 801 Chemistry - 802.2 Chemical Reactions - 804.2 Inorganic Compounds - 951 Materials Science
Numerical data indexing: Size 2.00e-05m to 3.00e-05m, Size 5.00e-07m to 1.00e-06m
Database: Compendex
Data Provider: Engineering Village

144. Trust value calculation in domains based on grid environment

Accession number: 20161602266119
Authors: Ma, Wenqing (1)
Author affiliation: (1) College of Material Science and Engineering, Xi'An Shiyou University, Xi'an, China
Corresponding author: Ma, Wenqing(Winsoft21st@126.com)
Source title: Proceedings of 2015 International Conference on Estimation, Detection and Information Fusion, ICEDIF 2015
Abbreviated source title: Proc. Int. Conf. Estim., Detect. Inf. Fusion, ICEDIF
Part number: 1of1
Issue title: Proceedings of 2015 International Conference on Estimation, Detection and Information Fusion, ICEDIF 2015
Issue date: September 28, 2015
Publication year: 2015
Pages: 407-412
Article number: 7280153
Language: English
ISBN-13: 9781479964178
Document type: Conference article (CA)
Conference name: International Conference on Estimation, Detection and Information Fusion, ICEDIF 2015
Conference date: January 10, 2015 - January 11, 2015
Conference location: Harbin, China
Conference code: 118253
Publisher: Institute of Electrical and Electronics Engineers Inc., United States
Abstract: In order to achieve a reasonable evaluation of direct trust, this paper proposes a trust evaluation algorithm based on the domain, using the technique of constructing a hierarchical tree of trust evaluation subjectively. The algorithm adopts the rules of series and parallel operations in the D-S theory, acquires the results of the recommended trust problem of a single path by quadrature methods and implements the integration of multiple paths by the weighted algorithm which takes the cooperative roles and industry roles as factors. The algorithm can effectively avoid the phenomenon of a single node's weight being too heavy and unfair treatment on recommended resource nodes and realize the trust value computation.
Number of references: 10
Main heading: Trees (mathematics)
Controlled terms: Computation theory - Trusted computing

Uncontrolled terms: Direct trusts - Grid environments - Hierarchical tree - Parallel operations - Quadrature methods - Resource nodes - Trust evaluation - Weighted algorithm
Classification code: 721.1 Computer Theory, Includes Formal Logic, Automata Theory, Switching Theory, Programming Theory - 723.2 Data Processing and Image Processing - 921.4 Combinatorial Mathematics, Includes Graph Theory, Set Theory
DOI: 10.1109/ICEDIF.2015.7280153
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

145. Research of characteristics of gas-liquid two-phase pressure drop in microreactor (*Open Access*)

Accession number: 20164002861808
Authors: Li, Dan (1)
Author affiliation: (1) Chemical Institute of Chemical Industry, Xi'an Shiyou University, Xi'an, Shaanxi, China
Corresponding author: Li, Dan
Source title: MATEC Web of Conferences
Abbreviated source title: MATEC Web Conf.
Volume: 25
Part number: 1of1
Issue title: 2015 International Conference on Energy, Materials and Manufacturing Engineering, EMME 2015
Issue date: October 6, 2015
Publication year: 2015
Article number: 02005
Language: English
ISSN: 22747214
E-ISSN: 2261236X
Document type: Conference article (CA)
Conference name: International Conference on Energy, Materials and Manufacturing Engineering, EMME 2015
Conference date: October 15, 2015 - October 16, 2015
Conference location: Kuala Lumpur, Malaysia
Conference code: 121396
Publisher: EDP Sciences
Abstract: With the research system of nitrogen and deionized water, this paper researches the pressure drop of gas-liquid two-phase flow in the circular microchannel with an inner diameter which is respectively 0.9mm and 0.5mm, analyzes the effect of microchannel diameter on gas-liquid two-phase frictional pressure drop in the microchannel reactor, and compares with the result of frictional pressure drop and the predicting result of divided-phase flow pattern. The result shows that, the gas-liquid two-phase frictional pressure drop in the microchannel significantly increases with the decreasing microchannel diameter; Lockhart-Martinelli relationship in divided-phase flow pattern can preferably predict the gas-liquid two-phase frictional pressure drop in the microchannel, but the Tabular constant needs to be corrected. © Owned by the authors, published by EDP Sciences, 2015.
Number of references: 12
Main heading: Pressure drop
Controlled terms: Flow patterns - Friction - Deionized water - Gases - Drops - Liquids - Two phase flow - Chemical reactors - Microchannels
Uncontrolled terms: Circular microchannel - Frictional pressure drops - Gas - liquid two-phase flows - Inner diameters - Micro channel reactors - Micro-reactor - Two-phase frictional pressure drop - Two-phase pressure drops
Classification code: 445.1 Water Treatment Techniques - 631.1 Fluid Flow, General - 802.1 Chemical Plants and Equipment
Numerical data indexing: Size 5.00e-04m, Size 9.00e-04m
DOI: 10.1051/matecconf/20152502005
Compendex references: YES
Open Access type(s): All Open Access, Gold, Green
Database: Compendex
Data Provider: Engineering Village

146. Optimization of acoustic communication along the drillstring

Accession number: 20154101360699
Authors: Zhou, Jing (1); Qiu, Bin (1); Ni, Wen-Long (1); Shang, Hai-Yan (1)
Author affiliation: (1) Institute of Measurement and Control, Xi'an Shiyou University, Xi'an; 710065, China
Source title: Zhendong yu Chongji/Journal of Vibration and Shock
Abbreviated source title: J Vib Shock
Volume: 34
Issue: 18
Issue date: September 28, 2015
Publication year: 2015
Pages: 161-165 and 204
Language: Chinese
ISSN: 10003835
Document type: Journal article (JA)
Publisher: Chinese Vibration Engineering Society
Abstract: In order to develop a communication system that uses extensional stress waves in hollow steel drill pipe to carry encoded data between the bottom of well and the operator, it is necessary to know the optimal signal transmission characteristics. An aperiodic model of drill-string assembly was established to characterize the downhole information transmission and analyz the characteristics of combinations of eight drill pipes with different lengths and different cross-sectional areas by applying the reflectionless acoustic transmission model (RATO). The results showe that the ascent-then-descend (ATD) and the descend-then-ascent (DTA) pipe arrangements have more efficient energy transfer capability than other pipe arrangements for different lengths of bottom hole assemblies (BHA). The DTA pipe arrangement has more efficient energy transfer capability than other pipe arrangements for different cross-sectional areas of BHAs. The analysis on the RATO of drill tools and the simulation of optimal transmission of the acoustic drilling string channel provide theoretical and technical foundation for the further research of acoustic telemetry. ©, 2015, Chinese Vibration Engineering Society. All right reserved.
Number of references: 16
Main heading: Drills
Controlled terms: Drill pipe - Drill strings - Telemetering equipment - Energy efficiency - Energy transfer
Uncontrolled terms: Acoustic channels - Acoustic communications - Acoustic telemetry - Acoustic transmission - Channel property - Cross sectional area - Efficient energy transfer - Information transmission
Classification code: 511.2 Oil Field Equipment - 525.2 Energy Conservation - 603.2 Machine Tool Accessories
DOI: 10.13465/j.cnki.jvs.2015.18.027
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

147. An experimental study of velocity-saturation relationships in volcanic rocks (*Open Access*)

Accession number: 20152200881842
Authors: Liu, Zhidi (1); Zhao, Jingzhou (1)
Author affiliation: (1) School of Earth Sciences and Engineering, Xi'an Shiyou University, Xi'an, China
Corresponding author: Liu, Zhidi
Source title: Open Petroleum Engineering Journal
Abbreviated source title: Open Pet. Eng. J.
Volume: 8
Issue: 1
Issue date: 2015
Publication year: 2015
Pages: 142-152
Language: English
ISSN: 18748341
Document type: Journal article (JA)
Publisher: Bentham Science Publishers B.V., P.O. Box 294, Bussum, 1400 AG, Netherlands
Abstract: In this paper, experiments are carried out under different pressures and water saturations using core samples of volcanic rocks from the Junggar Basin in China to understand how water saturation affects P- and S-wave velocities. The results show that water saturated rocks exhibit significantly higher P- and S-wave velocities than gas saturated rocks. In addition, the P- and S-wave velocity ratio declines with increasing water saturation. Furthermore,

a P- and S-wave velocity ratio vs. resistivity cross plot is created to identify gas reservoirs in the volcanic rocks in the Junggar Basin. © 2015 Liu and Zhao; Licensee Bentham Open.
Number of references: 10
Main heading: Volcanic rocks
Controlled terms: Volcanoes - Wave propagation - Acoustic wave velocity - Seismic waves - Shear waves
Uncontrolled terms: Different pressures - Gas recognition - Gas saturated rock - P- and S-wave velocities - S-wave velocity - Velocity saturation - Water saturated rock - Water saturations
Classification code: 482.2 Minerals - 484 Seismology - 751.1 Acoustic Waves - 931.1 Mechanics
DOI: 10.2174/1874834101508010142
Open Access type(s): All Open Access, Bronze
Database: Compendex
Data Provider: Engineering Village

148. Induced Stress and Interaction of Fractures During Hydraulic Fracturing in Shale Formation

Accession number: 20160201801576
Authors: Zhou, Desheng (1); Zheng, Peng (1); Peng, Jiao (1); He, Pei (1)
Author affiliation: (1) College of Petroleum Engineering, Xi'an Shiyou University, Xi'an, Shaanxi; 710065, China
Source title: Journal of Energy Resources Technology, Transactions of the ASME
Abbreviated source title: J Energy Resour Technol Trans ASME
Volume: 137
Issue: 6
Issue date: November 1, 2015
Publication year: 2015
Article number: 062902
Language: English
ISSN: 01950738
E-ISSN: 15288994
CODEN: JERTD2
Document type: Journal article (JA)
Publisher: American Society of Mechanical Engineers (ASME), United States
Abstract: Creating complex fracture network by hydraulic fracturing operation in unconventional reservoir development is the key factor of effective exploitation. The mechanism of creating a fracture network is not clear up to today. Conventional hydraulic fracturing theory is based on tensile failure of a rock, and a hydraulic fracture is widely accepted as propagating along the direction of in situ maximum horizontal principal stress in the industry. Based on rock elastic mechanics and fracture mechanics, considering combined tensile and shear failures, the maximum circumferential strain criterion and boundary element method (BEM), the paper studies the induced stress and its variation during a fracture propagation, the interaction between two or more hydraulic fractures, and the interaction between a hydraulic fracture and a natural crack. The paper shows that a propagating fracture will produce induced stresses on surrounding rock and form a stress shadow. Instead of propagation along the direction of maximum horizontal principal stress as a single fracture, the outside two fractures of two or more hydraulic fractures are exclusive and turning away from each other. A natural crack may be awaked and extend at its both tips by a propagating hydraulic fracture before their intersection, and the hydraulic fracture may deflect toward the natural crack. The interaction between a hydraulic fracture and a natural crack depends on the transverse distance between them and the initial length of the crack. The shorter the transverse distance and the longer the crack length are, the higher the possibility of the crack to be awaked is. The research results are helpful in understanding complex fracture network and may be used in determining hydraulic fracture places to create a complex fracture network. Copyright © 2015 by ASME.
Number of references: 22
Main heading: Boundary element method
Controlled terms: Cracks - Elasticity - Fracture mechanics - Hydraulic fracturing - Sailing vessels - Complex networks - Fracture - Stresses - Rocks
Uncontrolled terms: Circumferential strain - Elastic mechanics - Fracture interactions - Fracture propagation - Induced stress - Maximum horizontal principal stress - Tensile failures - Unconventional reservoirs
Classification code: 512.1.2 Petroleum Deposits : Development Operations - 674.1 Small Marine Craft - 722 Computer Systems and Equipment - 921.6 Numerical Methods - 931.1 Mechanics - 951 Materials Science
DOI: 10.1115/1.4030832
Compendex references: YES
Database: Compendex

Data Provider: Engineering Village

149. Simulation test methods for cementing sheath micro-clearance and micro-crack

Accession number: 20154301444390
Authors: Yang, Zhenjie (1); Gawane, Astou (1); Yang, Qiang (1); Wu, Xingxing (1); Wang, Xiaojun (1)
Author affiliation: (1) School of Petroleum Engineering, Xi'an Shiyou University, Xi'an; Shaanxi; 710065, China
Source title: Natural Gas Industry
Abbreviated source title: Natur. Gas Ind.
Volume: 35
Issue: 9
Issue date: September 25, 2015
Publication year: 2015
Pages: 77-82
Language: Chinese
ISSN: 10000976
CODEN: TIGOE3
Document type: Journal article (JA)
Publisher: Natural Gas Industry Journal Agency
Abstract: So far, there haven't been unified experimental methods for cementing sheath micro-clearance and micro-crack simulation and self-repairing evaluation. Two kinds of micro-clearance and micro-crack simulation methods are put forward in this paper on the basis of a plenty of exploration experiments in order to do research smoothly in cementing sheath self-repairing technologies. One is that stainless steel pipes are used as casings. The micro-clearances of cementing sheath are simulated by injecting cement slurry after drilling fluid films are painted uniformly on the inner walls of the casings. The other one is that the micro-cracks of cementing sheath are simulated by exerting mechanical extrusion force on the outer wall of steel pipes after the directly injected slurry (no drilling fluid films on the inner wall) is solidified. In this paper, analysis and studies were conducted on the reliability and stability of simulation methods and the micro-forms of simulation samples by means of anti-channeling strength test, experiment error analysis and non-destructive CT scan. Experimental results show that the proposed simulation experimental methods are simple and practical, the simulation process and micro-forms of micro-clearances and micro-cracks are close to the actual working conditions, and the results are stable and reliable. It is concluded that the simulation experimental methods can be better applied to the self-repairing technology research of cementing sheath and the mechanical properties test of cementing slurry.
Number of references: 16
Main heading: Cracks
Controlled terms: Computerized tomography - Drilling fluids - Cementing (shafts) - Reliability analysis - Error analysis - Cements - Repair - Steel pipe
Uncontrolled terms: Anti-channeling strength - Experiment methods - Experimental methods - Mechanical properties test - Micro-clearance - Reliability and stability - Self repairing - Simulation test methods
Classification code: 412.1 Cement - 545.3 Steel - 619.1 Pipe, Piping and Pipelines - 723.5 Computer Applications - 913.5 Maintenance
DOI: 10.3787/j.issn.1000-0976.2015.09.011
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

150. Hydrocarbon accumulation patterns of the upper paleozoic gas in the Longdong area, Ordos Basin

Accession number: 20161202132709
Authors: Sun, Liu-Yi (1); Zhao, Jing-Zhou (2, 3); Li, Jun (2, 3); Bao, Hong-Ping (1); Liu, Bao-Xian (1); Wang, Hong-Wei (1); Wang, Qian (2)
Author affiliation: (1) Exploration & Development Research Institute of PetroChina Changqing Oilfield Company, Xi'an, China; (2) School of Earth Sciences and Engineering, Xi'an Shiyou University, Xi'an, China; (3) Shaanxi Key Lab of Petroleum Accumulation Geology, Xi'an Shiyou University, Xi'an, China
Source title: Natural Gas Geoscience
Abbreviated source title: Nat. Gas Geosci.
Volume: 26
Issue: 11

Issue date: November 10, 2015
Publication year: 2015
Pages: 2029-2038
Language: Chinese
ISSN: 16721926
Document type: Journal article (JA)
Publisher: Science Press
Abstract: Based on the natural gas reservoir geochemical behaviors, characteristics of fluid inclusions and numerical simulation of hydrocarbon generation pressurization, the gas driving force of migration, migration style and the accumulation process of the Upper Paleozoic have been analyzed in the Longdong area of Ordos Basin, and it also established natural gas accumulation patterns. It has been conformed that the gas of the first member of Shaanxi Formation (P2s1) and the eighth member of Xiashihezi Formation (P2h8is not only driven by the overpressure-driven surge flow, but also has an obvious diffusion migration characteristic. Moreover, the natural gas of P2h8is more obvious. The natural gas migration distance, in vertical, mainly arrives to the bottom of P2s1, which phenomenon is caused by the C-P hydrocarbon generation pressurization. The diffusion migration has an important contribution to the gas migration from P2s1to P2h8. The gas, which is the overpressure-driven by the hydrocarbon generation and diffusion-driven by the gradient of gas molecule concentration, spills into P2s1reservoir through matrix porosity and fracture. It could directly accumulate and form P2s1reservoirs under P2s1direct caprock development, or further vertically migrate into the advantageous parts of P2h8to accumulate and form gas reservoirs. © 2015, Science Press. All right reserved.
Number of references: 42
Main heading: Diffusion
Controlled terms: Geochronology - Natural gas - Hydrocarbons - Metamorphic rocks - Pressurization - Gases
Uncontrolled terms: Geochemical behaviors - Hydrocarbon accumulation - Hydrocarbon generation - Natural gas reservoir - Natural-gas accumulation - Ordos Basin - Reservoir geochemistry - Upper Paleozoic
Classification code: 481.1 Geology - 481.3 Geophysics - 522 Gas Fuels - 804.1 Organic Compounds
DOI: 10.11764/j.issn.1672-1926.2015.11.2029
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

151. Research on emission transition mechanisms of InGaN/GaN multiple quantum well light-emitting diodes using low-frequency current noise (*Open Access*)

Accession number: 20151100627698
Authors: Wang, Dang-Hui (1); Xu, Tian-Han (1); Wang, Rong (1); Luo, She-Ji (1); Yao, Ting-Zhen (1)
Author affiliation: (1) School of Materials Science & Engineering of Xi'an ShiYou University, Xi'an; 710065, China
Corresponding author: Wang, Dang-Hui(wdhyxp@163.com)
Source title: Wuli Xuebao/Acta Physica Sinica
Abbreviated source title: Wuli Xuebao
Volume: 64
Issue: 5
Issue date: March 5, 2015
Publication year: 2015
Article number: 050701
Language: Chinese
ISSN: 10003290
CODEN: WLHPAR
Document type: Journal article (JA)
Publisher: Institute of Physics, Chinese Academy of Sciences
Abstract: In this paper, we measure the emission transition mechanisms in InGaN/GaN multiple quantum well (MQW) light-emitting diodes (LED) using low-frequency current noise from 0.1 to 10 mA. According to the characteristics of the low-frequency current noise and the emission mechanisms of InGaN/GaN LEDs, we study the relationships between low-frequency current noise and current flows through the LEDs. Conclusions indicate that the low-frequency current noise is increased with the increasing current from 0.1 to 10 mA. With a lower current (I 10 mA) it is the 1/f noise that dominates in LEDs, so there exists an emission transition mechanism in InGaN/GaN MQW LEDs between 0.1 and 10 mA, showing that the mechanism of the carrier recombination changes from non-radiative recombination to a stable fluctuation of carrier numbers. Conclusions of this paper provide an effective method to characterize the emission

transition mechanisms, optimize the design of LED so as to improve the quantum efficiency for InGaN/GaN MQW LEDs. ©, 2015, Institute of Physics, Chinese Academy of Sciences. All right reserved.
Number of references: 20
Main heading: Light emitting diodes
Controlled terms: Semiconductor quantum wells - III-V semiconductors - Quantum efficiency
Uncontrolled terms: Carrier recombination - Emission efficiencies - Generation-recombination noise - InGaN/GaN multiple quantum well light emitting diodes - Low-frequency currents - Low-Frequency Noise - Non-radiative recombinations - Recombination mechanisms
Classification code: 712.1 Semiconducting Materials - 714.2 Semiconductor Devices and Integrated Circuits - 931.4 Quantum Theory; Quantum Mechanics
Numerical data indexing: Electric_Current 1.00e-02A, Electric_Current 1.00e-03A, Electric_Current 1.00e-04A to 1.00e-02A
DOI: 10.7498/aps.64.050701
Compendex references: YES
Open Access type(s): All Open Access, Hybrid Gold
Database: Compendex
Data Provider: Engineering Village

152. Calcination temperature-dependent surface structure and physicochemical properties of magnesium oxide

Accession number: 20154401458938
Authors: Zhang, Xiaoling (1); Zheng, Yajun (1); Feng, Xiaoqin (1); Han, Xiaoxiao (1); Bai, Zongquan (1); Zhang, Zhiping (1)
Author affiliation: (1) School of Chemistry and Chemical Engineering, Xi'An Shiyou University, Xi'an; 710065, China
Corresponding author: Zhang, Zhiping
Source title: RSC Advances
Abbreviated source title: RSC Adv.
Volume: 5
Issue: 105
Issue date: 2015
Publication year: 2015
Pages: 86102-86112
Language: English
E-ISSN: 20462069
CODEN: RSCACL
Document type: Journal article (JA)
Publisher: Royal Society of Chemistry
Abstract: Magnesium oxide (MgO), as an exceptionally important inorganic material, has been widely studied in view of its unique surface properties, but the correlation between its surface structure and physicochemical performance is still scarce. Here we report the evolution of the surface structure and physicochemical properties of trapezoid-like MgO microparticles with calcination temperature by transmission electron microscopy (TEM), scanning electron microscopy (SEM), energy dispersive spectroscopy (EDS), thermal gravimetric analysis (TGA) and X-ray diffraction (XRD) techniques. The results demonstrated that along with the surface change of MgO from a smooth appearance to the structure composed of nanoparticles, its corresponding crystal structure evolved from mesocrystal to polycrystal, then to pseudomorph, and finally to cubic single crystal with the increase of calcination temperature ranging from 400 °C to 1000 °C. It also illustrated that the electrochemical capability of MgO was highly dependent on its crystal structure, whereas its catalytic activity had a good correlation with its textural properties (e.g., surface area and porosity) although the reaction selectivity was related to the calcination temperature. This work highlights the vital role of calcination temperature in determining the surface structure and physicochemical properties of the inorganic material MgO, which in turn will tailor its overall performance in the final applications. © The Royal Society of Chemistry 2015.
Number of references: 68
Main heading: Magnesia
Controlled terms: Calcination - Surface structure - Energy dispersive spectroscopy - High resolution transmission electron microscopy - Catalyst activity - Single crystals - X ray diffraction - Thermogravimetric analysis - Crystal structure - Scanning electron microscopy - Structural properties
Uncontrolled terms: Calcination temperature - Energy dispersive spectroscopies (EDS) - Good correlations - Inorganic materials - Micro-particles - Reaction selectivity - Textural properties - Thermal gravimetric analyses (TGA)

Classification code: 408 Structural Design - 741.3 Optical Devices and Systems - 801 Chemistry - 802.3 Chemical Operations - 803 Chemical Agents and Basic Industrial Chemicals - 804 Chemical Products Generally - 804.2 Inorganic Compounds - 931.2 Physical Properties of Gases, Liquids and Solids - 933.1 Crystalline Solids - 933.1.1 Crystal Lattice - 951 Materials Science
Numerical data indexing: Temperature 6.73e+02K to 1.27e+03K
DOI: 10.1039/c5ra17031a
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

153. Effect of coiling temperature on microstructure and mechanical properties of (B+M/A) X80 pipeline steel with excellent deformability

Accession number: 20151800809713
Authors: Ma, Jing (1); Zhang, Xiaoyong (1); Cheng, Shixia (1); Gao, Huilin (1)
Author affiliation: (1) School of Materials Science and Engineering, Xi'an Shiyou University, Xi'an; 710065, China
Corresponding author: Ma, Jing(majingjing1008@163.com)
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Abbreviated source title: Cailiao Yanjiu Xuebao
Volume: 29
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Issue date: March 25, 2015
Publication year: 2015
Pages: 185-194
Language: Chinese
ISSN: 10053093
CODEN: CYXUEV
Document type: Journal article (JA)
Publisher: Chinese Journal of Materials Research
Abstract: High deformability X80 pipeline steel with microstructure composed of bainite and martinsite/austenite (B+M/A) can be obtained through the coiling continuous partitioning process. Effect of coiling temperature on the microstructure evolution and mechanical performance of the (B+M/A) X80 pipeline steel was studied by means of microscopic analysis, X-ray diffraction and mechanical property tests. The results show that with the increasing coiling temperature, the strength of the steel decreases and the ductility increases because of the decrease amount of bainite and dislocation density, as well as the increase amount of retained austenite. By a high coiling temperature, both of the precipitation of carbides and the decomposition of retained austenites result in the increase of strength and the decrease of plasticity. With a process by proper coiling temperature, the produced steel with such (B+M/A) dual-phase structure may exhibit a comprehensive mechanical performance with such as lower ratio of yield to strength, higher uniform elongation and strain hardening index, which meets the technical requirements of high deformability pipeline steel. © Copyright.
Number of references: 20
Main heading: Austenite
Controlled terms: Deformation - Bainite - Carbides - X ray diffraction - Steel pipe - Strain hardening - Phase structure
Uncontrolled terms: Coiling temperature - High coiling temperature - Mechanical performance - Metallic material - Micro-structure evolutions - Microstructure and mechanical properties - Microstructure and properties - X80 pipeline steels
Classification code: 531.2 Metallography - 537.1 Heat Treatment Processes - 545.3 Steel - 619.1 Pipe, Piping and Pipelines - 804.2 Inorganic Compounds - 812.1 Ceramics - 931.2 Physical Properties of Gases, Liquids and Solids - 933 Solid State Physics
Funding Details: Number: 51174165, Acronym: -, Sponsor: -;
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

154. Characteristics of Yanchang pipeline crude oil components and its wax deposition behavior

Accession number: 20151200672739
Authors: Chen, Gang (1); Su, Huijun (1); Li, Jing (1); Zhang, Jie (1)
Author affiliation: (1) College of Chemistry and Chemical Engineering, Xi'an Shiyou University, Xi'an; 710065, China
Corresponding author: Chen, Gang(gangchen@xsyu.edu.cn)
Source title: Shiyou Xuebao, Shiyou Jiagong/Acta Petrolei Sinica (Petroleum Processing Section)
Abbreviated source title: Shiyou Xuebao Shiyou Jiagong
Volume: 31
Issue: 1
Issue date: February 25, 2015
Publication year: 2015
Pages: 104-111
Language: Chinese
ISSN: 10018719
CODEN: SXSHEY
Document type: Journal article (JA)
Publisher: Science Press
Abstract: To study the characteristics of components in crude oil, column chromatography separation, Fourier Transform Infrared Spectroscopy (FT-IR), ultraviolet spectrophotometry (UV), differential scanning calorimetry (DSC) and optical microscope were used to separate Yanchang pipeline crude oil into thirteen components (C1-C13) and to investigate the effects of the polar components (C2-C13) on the wax deposition behavior of saturates (C1). The results indicated that there existed some components in crude oil which could effectively inhibit the precipitation of wax crystal. The behaviors of C1 with different polarity components added were quite different from that of the crude oil. The addition of resin and asphaltene to C1 could increase the number of wax crystal particles and decrease the dimensions of the wax particles during the cooling crystallization process, which prevented the particles from contacting and crosslinking each other and forming bulk wax crystal aggregation. ©, 2015, Science Press. All right reserved.
Number of references: 19
Main heading: Crude oil
Controlled terms: Pipelines - Asphaltenes - Differential scanning calorimetry - Column chromatography - Deposition - Fourier transform infrared spectroscopy - Precipitation (chemical)
Uncontrolled terms: Cooling crystallization - Crude oil components - Fourier transform infra red (FTIR) spectroscopy - Polar components - Saturated hydrocarbons - Ultraviolet spectrophotometry - Wax deposition - Wax particles
Classification code: 512.1 Petroleum Deposits - 513 Petroleum Refining - 619.1 Pipe, Piping and Pipelines - 801 Chemistry - 802.3 Chemical Operations - 944.6 Temperature Measurements
DOI: 10.3969/j.issn.1001-8719.2015.01.017
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

155. Research on oil agriculture and food processing engineer students' english test anxiety (*Open Access*)

Accession number: 20152000846038
Authors: Dong, Mei (1)
Author affiliation: (1) Department of English, School of Foreign Languages, Xi'an Shiyou University, Xi'an, China
Corresponding author: Dong, Mei
Source title: Advance Journal of Food Science and Technology
Abbreviated source title: Adv. J. Food Sci. Technol.
Volume: 7
Issue: 11
Issue date: 2015
Publication year: 2015
Pages: 896-898
Language: English
ISSN: 20424868
E-ISSN: 20424876
Document type: Journal article (JA)
Publisher: Maxwell Science Publications

Abstract: By conducting a principal component analysis on 254 Chinese oil agriculture and food processing engineer students' answer to English Test Anxiety Scale (Dong, 2010), the current study examined the internal structure of their English Test Anxiety (ETA). Six dimensions were found, which were the ETA-Speaking, ETA-Reading and ETA-Writing, as well as the Interpersonal skill and Lack of practice. Cumulatively, the six components accounted for 55.6% of the total variance of the ETA. The component of ETA-Listening alone contributed to 21.79% of the total variance, which implied that ETA-Listening was an important part of the ETA. Besides, the identification of language skill-specific anxieties within ETA indicated that there possibly exists individual difference with regards to language skill-specific anxieties among test-takers. Series of paired t-tests on ETA-Listening, ETA-Speaking, ETA-Reading and ETA-Writing indicated that the sample test-takers experienced different levels of ETA-Listening and ETA-Speaking, but the same level of ETA-Reading and ETA-Writing. © Maxwell Scientific Organization, 2015.
Number of references: 3
Main heading: Food processing
Controlled terms: Agriculture - Testing - Principal component analysis - Oils and fats - Engineers
Uncontrolled terms: English test anxiety - Individual Differences - Internal structure - Interpersonal skills - T-tests - Total variance
Classification code: 804.1 Organic Compounds - 821 Agricultural Equipment and Methods; Vegetation and Pest Control - 822.2 Food Processing Operations - 922.2 Mathematical Statistics
Numerical data indexing: Percentage 2.18e+01%, Percentage 5.56e+01%
DOI: 10.19026/ajfst.7.2529
Compendex references: YES
Open Access type(s): All Open Access, Hybrid Gold
Database: Compendex
Data Provider: Engineering Village

156. Accumulation characteristics of natural gas from the Ordovician Kelimoli Formation, western Ordos Basin

Accession number: 20154901649220
Authors: Wu, Wei-Tao (1, 2); Zhao, Jing-Zhou (1, 2); Sun, Liu-Yi (3); Ma, Zhan-Rong (3); Xiao, Hui (1, 2); Li, Lei (1, 2)
Author affiliation: (1) School of Earth Sciences and Engineering, Xi'an Shiyou University, Xi'an, China; (2) Key Laboratory of Hydrocarbon Accumulation of Shaanxi Province, Xi'an Shiyou University, Xi'an, China; (3) Research Institute of Petroleum Exploration, Changing Oilfield Company, PetroChina, Xi'an, China
Source title: Natural Gas Geoscience
Abbreviated source title: Nat. Gas Geosci.
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Issue: 10
Issue date: October 10, 2015
Publication year: 2015
Pages: 1862-1872
Language: Chinese
ISSN: 16721926
Document type: Journal article (JA)
Publisher: Science Press
Abstract: Based on geological conditions of Ordovician Kelimoli Formation in western Ordos Basin, fracture-cavity reservoir and source rock conditions as well as gas accumulation characteristics are studied, migration and accumulation features of natural gas are analyzed, and accumulation models in different areas are built. The results show that Kelimoli Formation is mainly composed of brecciated limestones. The storage space is a fracture-cavity system with logging response of high GR, high AC and low RT and it shows good connectivity through well-connecting profiles. Its origin is dominantly controlled by lithology and slope topography. Mud limestones from Ordovician Wulalike Formation to Lashizhong Formation and Carboniferous-Permian coal-bearing strata are effective source rocks. Gas source correlation results show that natural gas in the Kelimoli Formation is mainly from coal-measure source rocks. Kelimoli Formation mainly comprises dissolved fracture-cavity reservoir and local development of dolomite lens reservoir, both of which belong to dry gas reservoir and are featured by bedding-parallel development and stratiform-like distribution. Combined with methane carbon isotopes and components of natural gas, three gas accumulation models in the Kelimoli Formation are built, migration downward along carrier bed in the deposition area of Lashizhong-Wulalike Formation, migration downward directly in the exposed area of Kelimoli Formation, and migration downward vertically along faults in faulted zones. © 2015, Science Press. All right reserved.
Number of references: 22
Main heading: Natural gas

Controlled terms: Lime - Metamorphic rocks - Coal deposits - Fracture - Gases - Lithology - Limestone
Uncontrolled terms: Accumulation model - Fracture-cavity reservoirs - Migration and accumulation - Ordos Basin - Ordovician
Classification code: 481.1 Geology - 503 Mines and Mining, Coal - 522 Gas Fuels - 804.2 Inorganic Compounds - 951 Materials Science
DOI: 10.11764/j.issn.1672-1926.2015.10.1862
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

157. Investigation of cyclohexanone pentaerythritol ketal as a clean flow improver for crude oil

Accession number: 20150700508211
Authors: Chen, Gang (1); Li, Yongfei (1); Zhao, Wei (1); Qu, Kun (1); Ning, Yang (1); Zhang, Jie (1)
Author affiliation: (1) College of Chemistry and Chemical Engineering, Xi'An Shiyou University, Xi'an, Shaanxi; 710065, China
Corresponding author: Zhang, Jie(zhangjie@xsyu.edu.cn)
Source title: Fuel Processing Technology
Abbreviated source title: Fuel Process Technol
Volume: 133
Issue date: May 2015
Publication year: 2015
Pages: 64-68
Language: English
ISSN: 03783820
CODEN: FPTEDY
Document type: Journal article (JA)
Publisher: Elsevier B.V., Netherlands
Abstract: The decomposition of polymer in the oil refining process is the main problem for the application of typical polymer flow improvers, so there is a requirement to seek for new small molecular flow improvers. In this work, a small molecular flow improver, cyclohexanone pentaerythritol ketal, was synthesized and fully characterized. The further evaluation test showed that the synthesized compound can improve the flow properties of crude oil samples by reducing the viscosity of crude oil by 70% at most and depressing the pour point slightly. With the composition group's content of different crude oil samples and the response to the additive, it was found that the high content of saturated HC makes for the effective viscosity reduction. The role of cyclohexanone pentaerythritol ketal in limiting the degree of cocrystallization can be further confirmed by the average particle size and the particle morphology analysis of saturated HC component illustrated from microscopic crystal morphology. Besides, cyclohexanone pentaerythritol ketal is a cleaner crude oil additive with its decomposition at relatively low temperature in light of the result of thermal analysis. © 2014 Elsevier B.V. All rights reserved.
Number of references: 21
Main heading: Crude oil
Controlled terms: Temperature - Particle size analysis - Thermoanalysis - Particle size - Viscosity
Uncontrolled terms: Average particle size - Crystal morphologies - Cyclohexanones - Effective viscosity - Flow improvers - Oil refining process - Particle morphologies - Spiro compounds
Classification code: 512.1 Petroleum Deposits - 631.1 Fluid Flow, General - 641.1 Thermodynamics - 801 Chemistry - 931.2 Physical Properties of Gases, Liquids and Solids - 951 Materials Science
Numerical data indexing: Percentage 7.00e+01%
DOI: 10.1016/j.fuproc.2014.12.029
Funding Details: Number: 2012KJXX-40, Acronym: -, Sponsor: -; Number: 2013JK0647, Acronym: -, Sponsor: Scientific Research Plan Projects of Shaanxi Education Department;
Funding text: This work was financially supported by grants from Technological Plan Projects of Shaanxi Province of China (2012KJXX-40) and Scientific Research Plan Projects of Shaanxi Education Department (2013JK0647).
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

158. Matrix decomposition based de-correlation algorithm in MIMO radars

Accession number: 20161202132662
Authors: Guo, Xiaolu (1); Tao, Haihong (1); Dang, Bo (2)
Author affiliation: (1) National Lab. of Radar Signal Processing, Xidian University, Xi'an, China; (2) Xi'an Shiyou University, Xi'an, China
Corresponding author: Guo, Xiaolu(floydguo@foxmail.com)
Source title: Dianbo Kexue Xuebao/Chinese Journal of Radio Science
Abbreviated source title: Dianbo Kexue Xuebao
Volume: 30
Issue: 6
Issue date: December 1, 2015
Publication year: 2015
Pages: 1033-1038
Language: Chinese
ISSN: 10050388
CODEN: DKEXFT
Document type: Journal article (JA)
Publisher: Chinese Research Institute of Radiowave Propagation
Abstract: The performance of the target parameters estimation is greatly affected by the auto-correlation and cross-correlation of the multiple transmit waveforms. However, for bistatic multi-input multi-output (MIMO) radar, the orthogonal multiple waveforms are usually difficult to obtain. In order to solve this problem, a waveforms de-correlation algorithm is presented in this paper, which decorrelates the correlation through matrix decomposition followed by iteration. By the joint direction of departure (DOD) and direction of arrival (DOA) estimation, the simulation and performance analysis show the effectiveness and validity of the proposed algorithm. Copyright © 2015 by Editorial Department of Chinese Journal of Radio Science
Number of references: 15
Main heading: MIMO systems
Controlled terms: Iterative methods - Correlation methods - MIMO radar
Uncontrolled terms: Bistatic radars - Direction of arrivalestimation(DOA) - Direction of departure - Literation - Matrix decomposition - Multi-input multi-output radars - Performance analysis - Wave forms
Classification code: 716.2 Radar Systems and Equipment - 921.6 Numerical Methods - 922.2 Mathematical Statistics
DOI: 10.13443/j.cjors.2015011601
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

159. Refolding of denatured/reduced lysozyme by aromatic thiols in the absence of small molecule disulfide

Accession number: 20143600026184
Authors: Ke, Cong-Yu (1); Yin, Dong-Yang (1); Sun, Wu-Juan (1); Zhang, Qun-Zheng (1)
Author affiliation: (1) College of Chemistry and Chemical Engineering, Xi'an ShiYou University, Xi'an; Shaanxi; 710065, China
Corresponding author: Ke, Cong-Yu
Source title: Research on Chemical Intermediates
Abbreviated source title: Res Chem Intermed
Volume: 41
Issue: 8
Issue date: August 2, 2015
Publication year: 2015
Pages: 5859-5868
Language: English
ISSN: 09226168
E-ISSN: 15685675
CODEN: RCINEE
Document type: Journal article (JA)
Publisher: Kluwer Academic Publishers
Abstract: To increase the folding rate and gain insight into the folding process, the lysozyme was selected as a model protein and refolded by the aromatic thiols (ArSH) alone and by redox buffers glutathione/glutathione disulfide (GSH/GSSG). The optimum folding conditions, including the concentration of aromatic thiols, and the composition and pH of

buffer solutions, were investigated. Attempts were first made to understand how aromatic thiols alone affect the folding performance of disulfide-containing proteins. The results showed that redox buffers of both aliphatic thiols and aromatic thiols can enhance the folding rate and yield of denatured reduced proteins effectively. However, the folding rates by aromatic thiols were up to 2-15 times greater than those with GSH/GSSG under various pH values (6.0-9.0). More importantly, the research demonstrated that the aromatic thiols alone can also increase the rate of proteins folding significantly at wide pH values, which has never been previously reported. It is expected that the research will provide a novel method for the folding of disulfide-containing proteins. © 2014 Springer Science+Business Media.
Number of references: 22
Main heading: Enzymes
Controlled terms: Sulfur compounds - Protein folding - Aromatization - Peptides - pH - Aromatic compounds
Uncontrolled terms: Aliphatic thiols - Aromatic thiol - Buffer solutions - Folding process - Glutathiones - Model proteins - Redox buffer - Small molecules
Classification code: 461 Bioengineering and Biology - 461.9 Biology - 801.1 Chemistry, General - 801.2 Biochemistry - 802.2 Chemical Reactions - 804.1 Organic Compounds
DOI: 10.1007/s11164-014-1706-6
Funding Details: Number: 20175016, Acronym: NSFC, Sponsor: National Natural Science Foundation of China;
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

160. High-resolution sequence stratigraphic framework of the Benxi-Shihezi Formation in the Yan'an Area, Ordos Basin

Accession number: 20160201793728
Authors: Wei, Qinlian (1); Mi, Huihui (1); Peng, Lina (1); Lai, Shenghua (1); Xiao, Ling (1)
Author affiliation: (1) School of Earth Sciences and Engineering, Xi'an Shiyou University, Xi'an; Shaanxi; 710065, China
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Document type: Journal article (JA)
Publisher: Natural Gas Industry Journal Agency
Abstract: There are different views on the Upper Palaeozoic sedimentary systems and the sequence stratigraphy in the Ordos Basin. In order to eliminate ambiguity and uncertainty of artificial stratigraphic sequence classification and increase the precision and accuracy of cycle division and stratigraphic correlation, stratigraphic identification was conducted on the sequence stratigraphy of the Upper Palaeozoic Benxi-Shihezi Formation in the Yan'an area of the southeast Ordos Basin by means of seismic time-frequency analysis and log wavelet analysis, in reference to high-resolution sequence stratigraphy theories. Comprehensive analysis of field outcrops, multiple seismic frequencies and single-well time frequency data shows that isochronal seismic reflection event is frequency-independent and there are totally five isochronal seismic interfaces identified. First, synthetic seismic response forward model was established by using the convolution of 0°-phase Ricker wavelets and reflection coefficients at different frequencies. Long-term base-level cycles were best reflected by the seismic data of master frequency 30-50 Hz. After logging demy wavelets were analyzed, long-, mid- and short-term base-level cycles of sequence stratigraphy were identified by using cores, outcrop interfaces and seismic isochronal interfaces data. Results show that 5 long-term, 12 mid-term and 22 short-term base-level cycles can be identified in the Benxi-Shihezi Formation in this area. Then, well-to-well sequence correlation was performed with seismic sequence framework as the constraint. Finally, an isochronal sequence stratigraphic framework was established, which provides the basis for the determination of subsequent oil and gas exploration targets and directions. © 2015, Natural Gas Industry Journal Agency. All right reserved.
Number of references: 16
Main heading: Seismic response
Controlled terms: Seismic waves - Metamorphic rocks - Petroleum prospecting - Stratigraphy - Uncertainty analysis

Uncontrolled terms: Base-level cycles - Ordos Basin - Palaeozoic - Seismic - Sequence framework - Time frequency analysis - Yan'an area
Classification code: 481.1 Geology - 484 Seismology - 484.2 Secondary Earthquake Effects - 512.1.2 Petroleum Deposits : Development Operations - 922.1 Probability Theory
Numerical data indexing: Frequency 3.00e+01Hz to 5.00e+01Hz
DOI: 10.3787/j.issn.1000-0976.2015.12.001
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

161. Experimental study of air foam flow in sand pack core for enhanced oil recovery (*Open Access*)

Accession number: 20153701271861
Authors: Hua, Shuai (1); Liu, Yifei (2); Di, Qinfeng (1); Chen, Yichong (1); Ye, Feng (1)
Author affiliation: (1) Shanghai Institute of Applied Mathematics and Mechanics, Shanghai University, China; (2) Xi'an Shiyou University, China
Corresponding author: Di, Qinfeng(qinfengd@sina.com)
Source title: Journal of Petroleum Science and Engineering
Abbreviated source title: J. Pet. Sci. Eng.
Volume: 135
Issue date: November 01, 2015
Publication year: 2015
Pages: 141-145
Language: English
ISSN: 09204105
Document type: Journal article (JA)
Publisher: Elsevier B.V., Netherlands
Abstract: As an innovative way of Enhancing Oil Recovery (EOR), the air foam flooding technique comprises the merits of air flooding and foam flooding, which not only has the double effects on profile controlling and oil displacement, but also avoids the gas channeling weakness. In this paper, a series of flow experiments of the simultaneous injection of air and air foam through artificial sand pack core was conducted to investigate changes in gas and oil composition and oil displacement efficiency. The effects of foaming agent concentration and slug were investigated. The results show that in low temperature oxidation process, oxygen content decreases, and carbon dioxide content increases. Aromatic hydrocarbon content decreases, while resins and asphaltene content increases. Oil displacement efficiency of air foam flooding is much higher than air flooding. The Foam blocking ability and the function of profile controlling of the foam, significantly prolongs gas breakthrough. The displacement efficiency was dropped due to the decrease of foaming agent concentration or the decrease of the foam slug. © 2015 Elsevier B.V.
Number of references: 12
Main heading: Enhanced recovery
Controlled terms: Efficiency - Oil well flooding - Aromatic hydrocarbons - Temperature - Floods - Foams - Carbon dioxide
Uncontrolled terms: Air foam - Displacement efficiency - Enhanced oil recovery - Experimental study - Foaming agent concentrations - Low-temperature oxidation - Oil-displacement efficiency - Simultaneous injections
Classification code: 511.1 Oil Field Production Operations - 641.1 Thermodynamics - 804.1 Organic Compounds - 804.2 Inorganic Compounds - 913.1 Production Engineering
DOI: 10.1016/j.petrol.2015.08.021
Funding Details: Number: SS2013AA061104, Acronym: -, Sponsor: -; Number: 12XD1402500, Acronym: -, Sponsor: -; Number: 50874071, Acronym: NSFC, Sponsor: National Natural Science Foundation of China; Number: S30106, Acronym: -, Sponsor: Shanghai Leading Academic Discipline Project;
Funding text: This research is supported partly by the National Science Funding of China (50874071), the Chinese National Programs for High Technology Research and Development (SS2013AA061104), Shanghai Program for Innovative Research Team in Universities, Shanghai Leading Academic Discipline Project (S30106), the Excellent Academic Leading Person Program of Science and Technology Commission of Shanghai Municipality (12XD1402500) , Shanghai Leading Talents Project . Part of the ability of local colleges and universities in Shanghai construction projects (12160500200).
Compendex references: YES
Open Access type(s): All Open Access, Bronze
Database: Compendex

Data Provider: Engineering Village

162. Development of an integrated application platform for natural gas pipeline engineering calculation

Accession number: 20153401199413
Authors: Gao, Aihua (1); Wang, Shouxi (2); Zhao, Kunpeng (2); Wang, Jiawei (2); Wen, Lin (2)
Author affiliation: (1) Sinopec Natural Gas Company, Beijing; 100029, China; (2) Xi'an Shiyou University, Xi'an; Shaanxi; 710065, China
Source title: Natural Gas Industry
Abbreviated source title: Natur. Gas Ind.
Volume: 35
Issue: 7
Issue date: July 25, 2015
Publication year: 2015
Pages: 85-90
Language: Chinese
ISSN: 10000976
CODEN: TIGOE3
Document type: Journal article (JA)
Publisher: Natural Gas Industry Journal Agency
Abstract: Natural gas pipeline engineering calculation involves multiple specialties, complex content, complicated analysis process and multiple application levels. In this paper, following the theories and methods of modern gas pipeline engineering analysis, according to the current domestic and international norms and standards, and depending on the application requirements and characteristics of engineering technology and management personnel, the latest computer, network, communication technology and smart mobile devices were combined with the advanced system integration and development technologies to realize the integration of gas pipeline engineering analysis methods. Finally, a set of integrated calculation and application software system was established for natural gas pipeline engineering, which serves for multi-platforms, multi-specialties and multi-systems. Furthermore, integrated application platforms of natural gas pipeline engineering calculation were built for different systems. An office working system of natural gas pipeline specialty was developed, which includes several application tools, such as natural gas pipeline process analysis, engineering calculation and data processing, etc. Practical applications show that this integrated application platform works in the way that engineers are accustomed to, and provides corresponding operation functions. It provides universal and convenient tools for the central dispatch, daily management and on-site operation of the natural gas pipeline system for all levels of professional and technical personnel. No need for re-development makes it able to improve work quality and efficiency. Moreover, it can provide unified and comprehensive technical support, process analysis methods and communication platform for the relevant technology and management personnel at various levels. It can effectively promote team coordination, and sharing and coordination of various resources, data and results. ©, 2015, Natural Gas Industry Journal Agency. All right reserved.
Number of references: 7
Main heading: Natural gas
Controlled terms: Gases - Application programs - Data handling - Natural gas pipelines - Human resource management
Uncontrolled terms: Analysis and calculations - Integrated applications - Multi systems - Multi-platform - Multi-specialties
Classification code: 522 Gas Fuels - 619.1 Pipe, Piping and Pipelines - 723 Computer Software, Data Handling and Applications - 723.2 Data Processing and Image Processing - 912.2 Management - 912.4 Personnel
DOI: 10.3787/j.issn.1000-0976.2015.07.013
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

163. Research on characteristics and precision injection angle control system of micro particles blaster cleaning for stone material surface pollutant (*Open Access*)

Accession number: 20162702567986
Authors: Gao, Zhigang (1); Zhou, Jun (1); Li, Peng (1); Bai, Junhua (2)

Author affiliation: (1) Institute of Precision Guidance and Control, Northwestern Polytechnical University, Xi'an, China; (2) Xi'An Shiyou University, Xi'an, China
Corresponding author: Gao, Zhigang(gaozhigang@nwpu.edu.cn)
Source title: MATEC Web of Conferences
Abbreviated source title: MATEC Web Conf.
Volume: 31
Part number: 1of1
Issue title: 2015 7th International Conference on Mechanical and Electronics Engineering, ICMEE 2015
Issue date: December 1, 2015
Publication year: 2015
Article number: 03010
Language: English
ISSN: 22747214
E-ISSN: 2261236X
Document type: Conference article (CA)
Conference name: 7th International Conference on Mechanical and Electronics Engineering, ICMEE 2015
Conference date: September 26, 2015 - September 27, 2015
Conference location: Dalian, China
Conference code: 121403
Publisher: EDP Sciences
Abstract: For analyzing the injection angle impact of micro particles blaster cleaning system, the numerical twophase flow model of gas-solid is built according to the characteristics of cleaning system, and the injection processes are simulated for different injection angle and soft/hard grinding materials. The simulation results indicate that the injection angle contributes a great influence on average pressure and effective area of cleaning, especially for the soft grinding materials. And concerning the actual operation difficulties of injection angle adjustment, the system is optimized by adding an electrical servo system to control angle of nozzle, which can realize the precise and quick positioning of angle-dimension in the course of cleaning. © 2015 Owned by the authors, published by EDP Sciences.
Number of references: 9
Main heading: Grinding (machining)
Controlled terms: Cleaning
Uncontrolled terms: Actual operation - Cleaning system - Control angles - Injection angles - Injection process - Material surface - Micro particles - Two phase flow model
Classification code: 604.2 Machining Operations - 802.3 Chemical Operations
DOI: 10.1051/matecconf/20153103010
Compendex references: YES
Open Access type(s): All Open Access, Gold, Green
Database: Compendex
Data Provider: Engineering Village

164. An enumeration method applied in intelligent transportation system (*Open Access*)

Accession number: 20151700790434
Authors: Lu, Shengnan (1, 2); Song, Huansheng (1); Xu, Xiaojuan (1)
Author affiliation: (1) College of Information Engineering, Chang'an University, Xi'an, China; (2) College of Computer, Xi'an Shiyou University, Xi'an, China
Corresponding author: Lu, Shengnan
Source title: International Journal of Smart Home
Abbreviated source title: Int. J. Smart Home
Volume: 9
Issue: 2
Issue date: 2015
Publication year: 2015
Pages: 143-150
Language: English
ISSN: 19754094
Document type: Journal article (JA)
Publisher: Science and Engineering Research Support Society
Abstract: Traditional approaches for some applications of Intelligent Transportation System(ITS), such as license plate tilt correction and vehicle speed estimation generally require feature extraction, however, feature extraction is a difficult task in complex traffic environment, and it is prone to be affected by the moving status of object and dynamic

environment. In this paper, we tried a new analysis method without feature extraction for these two applications. The approach is based on enumeration. All the possible results of image analysis are tested by the testing function. Then, the extreme value of the testing function is selected and the corresponding result is just the concerning result. In the experiment, our method is applied to vehicle license plate tilt correction and vehicle speed estimation. The results demonstrate the proposed method has certain degree of robustness and validity. © 2015 SERSC.
Number of references: 7
Main heading: Feature extraction
Controlled terms: License plates (automobile) - Optical character recognition - Intelligent systems - Intelligent vehicle highway systems - Extraction
Uncontrolled terms: Degree of robustness - Dynamic environments - Enumeration - Intelligent transportation systems - Tilt correction - Traditional approaches - Vehicle license plates - Vehicle speed
Classification code: 406.1 Highway Systems - 662.1 Automobiles - 723.4 Artificial Intelligence - 723.5 Computer Applications - 741.1 Light/Optics - 802.3 Chemical Operations
DOI: 10.14257/ijsh.2015.9.2.13
Compendex references: YES
Open Access type(s): All Open Access, Bronze
Database: Compendex
Data Provider: Engineering Village

165. Characteristics and significance of fluid inclusions in upper paleozoic of southwest Ordos Basin

Accession number: 20161202133127
Authors: Cao, Qing (1); Gao, Jun-Mei (2); Fan, Li-Yong (2); Pang, Chang-Xu (1); Yu, Jin-Zhu (1)
Author affiliation: (1) School of Earth Sciences and Engineering, Xi'an Shiyou University, Xi'an, China; (2) PetroChina Changqing Oilfield Company, Xi'an, China
Source title: Natural Gas Geoscience
Abbreviated source title: Nat. Gas Geosci.
Volume: 26
Issue: 12
Issue date: December 10, 2015
Publication year: 2015
Pages: 2245-2253
Language: Chinese
ISSN: 16721926
Document type: Journal article (JA)
Publisher: Science Press
Abstract: With methods of polarizing and fluorescence microscope observation, micro-thermometry etc., fluid inclusions of 24 Upper Paleozoic sandstone samples from 16 wells in southwest Ordos Basin were comprehensively tested in this paper. On the basis of research on burial history, petrographic characteristics of fluid inclusions and homogeneous temperature, ice point temperature of associated aqueous inclusions from main production layers in Shanxi Formation and He 8 section, charging periods of natural gas in tight reservoir of study area can be inferred. The results show as follows. Homogeneous temperature of aqueous inclusion, associated with gaseous hydrocarbon, were 100-170. Homogeneous temperature and ice temperature show normal continuous distribution, which means the gas charging happened during Middle Jurassic-Early Cretaceous(200-100Ma). Component of gas inclusion in healed micro-crack is mainly CH4, homogeneous temperature of aqueous inclusion, associated with gaseous hydrocarbon, was 140-170, which means the mainly gas charging occurred during Early Cretaceous(155-100Ma). It is concluded that Paleozoic gas accumulation in the study area is a continuous and slow process, and the main charging period is Early Cretaceous. © 2015, Science Press. All right reserved.
Number of references: 38
Main heading: Gases
Controlled terms: Fluid inclusion - Geochronology - Hydrocarbons - Metamorphic rocks - Mineralogy
Uncontrolled terms: Aqueous inclusions - Continuous distribution - Fluid inclusion - Gas accumulation - Gaseous hydrocarbon - Ordos Basin - Petrographic characteristics - Upper Paleozoic
Classification code: 481.1 Geology - 481.3 Geophysics - 482 Mineralogy - 631 Fluid Flow - 804.1 Organic Compounds
Numerical data indexing: Age 1.55e+08yr to 1.00e+08yr, Age 2.00e+08yr to 1.00e+08yr
DOI: 10.11764/j.issn.1672-1926.2015.12.2245
Compendex references: YES

Database: Compendex
Data Provider: Engineering Village

166. Origin of the Ordovician gas and its accumulation patterns in Northwestern Ordos Basin

Accession number: 20154901646667
Authors: Zhao, Jingzhou (1, 2); Wang, Daxing (3); Sun, Liuyi (3); Bao, Hongping (3); Xiao, Hui (1); Wu, Weitao (1); Chen, Yongbo (1)
Author affiliation: (1) School of Earth Sciences and Engineering, Xi'an Shiyou University, Xi'an; Shaanxi; 710065, China; (2) Shaanxi Key Laboratory of Petroleum Accumulation Geology, Xi'an Shiyou University, Xi'an; Shaanxi; 710065, China; (3) Research Institute of Exploration and Development, Changqing Oilfield Company, PetroChina, Xi'an; Shaanxi; 710029, China
Source title: Oil and Gas Geology
Abbreviated source title: Oil Gas Geol.
Volume: 36
Issue: 5
Issue date: October 28, 2015
Publication year: 2015
Pages: 711-720
Language: Chinese
ISSN: 02539985
Document type: Journal article (JA)
Publisher: Editorial Department of Oil and Gas Geology
Abstract: In order to determine the source of natural gas and to reveal the factors controlling the accumulation and distribution of natural gas in the Ordovician reservoirs of the study area, we studied the composition of the natural gas through geochemical analysis and comprehensive geologic studies. The Ordovician gases are revealed to be entirely dry gas and their dryness indices range from 0.958 to 0.986. Geochemical analysis indicates that the Ordovician gases are mostly derived from the Carboniferous-Permian coal measure source rocks, whereas the marine Ordovician source is assumed to be a minor contribution. This is also supported by the Ordovician source rock analysis, which has revealed that the organic matter content of the mudstones and the carbonates is commonly not high. The average TOC of the mudstones in the Wulalike, Kelimoli, Lashizhong formations are only 0.54%, 0.52% and 0.43%, respectively, and that of the carbonates in the above three formations are 0.35%, 0.31% and 0.25%, respectively. Comprehensive studies suggest that the gas accumulation and distribution is principally controlled by structure, reservoirs, cap rocks, quality source rocks and migration pathways. Gases mainly enrich in places where the following 5 factors couple, namely structural highs of the slope, highly developed reservoirs with dissolution fractures and vugs, cap rocks of the Wulalike and Lashizhong formations, quality source rocks, and migration pathways for downward charging of gas from the Upper Paleozoic source rocks. ©, 2015, Editorial Office of Oil and Gas Geology. All right reserved.
Number of references: 31
Main heading: Natural gas
Controlled terms: Gases - Quality control - Geochronology - Metamorphic rocks - Sedimentary rocks - Carbonates - Analytical geochemistry
Uncontrolled terms: Gas accumulation - Geochemical analysis - Migration pathway - Ordos Basin - Ordovician - Ordovician reservoir - Organic matter content - Source rocks
Classification code: 481.1 Geology - 481.2 Geochemistry - 481.3 Geophysics - 482.2 Minerals - 522 Gas Fuels - 801 Chemistry - 804.2 Inorganic Compounds - 913.3 Quality Assurance and Control
Numerical data indexing: Percentage 2.50e-01%, Percentage 3.10e-01%, Percentage 3.50e-01%, Percentage 4.30e-01%, Percentage 5.20e-01%, Percentage 5.40e-01%
DOI: 10.11743/ogg20150501
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

167. Synthesis of dihydropyrazole derivatives using modified calcium oxide as a solid basic catalyst (*Open Access*)

Accession number: 20154701569683
Authors: Tang, Ying (1); Zhang, Li (1); Wang, Shanshan (1); Zhang, Jie (1); Miao, Yanqing (2)

Author affiliation: (1) College of Chemistry and Chemical Engineering, Xi'an Shiyou University, China; (2) Department of Pharmacology, Xi'an Medical University, China
Source title: Progress in Reaction Kinetics and Mechanism
Abbreviated source title: Prog. React. Kinet. Mech.
Volume: 40
Issue: 4
Issue date: 2015
Publication year: 2015
Pages: 409-418
Language: English
ISSN: 14686783
E-ISSN: 1471406X
CODEN: PRKNAZ
Document type: Journal article (JA)
Publisher: Science Reviews 2000 Ltd
Abstract: A highly efficient method for the synthesis of dihydropyrazole derivatives has been established by using CaO as a solid basic catalyst. It was found that a 77.1% yield of 3,5-diphenyl-4,5-dihydropyrazole-1-carboxamide was obtained at ratio of aminourea hydrochloride/chalcone of 1.2:1 after 3 h at a reaction temperature of 65?. The reaction efficiency was greatly enhanced, with the 3,5-diphenyl-4,5-dihydropyrazole-1-carboxamide yield reaching 91.2%, when the commercial CaO was modified by benzyl bromide in a simple way. The effects of modification and reaction conditions on the yields as well as the mechanism were studied thoroughly. From the results of FTIR and thermogravity analysis characterisation, the modifier was shown to be bonded on the surface of CaO chemically, and almost no Ca(OH)2 was formed during the modification process. The type of chalcone has a strong influence on the yield of dihydropyrazole derivative.
Number of references: 18
Main heading: Surface treatment
Controlled terms: Hydrated lime - Fatty acids - Lime - Catalysts
Uncontrolled terms: Basic catalysts - Dihydropyrazile - Heterogeneous catalyst - Modification process - Reaction conditions - Reaction efficiency - Reaction temperature - Thermogravity analysis
Classification code: 803 Chemical Agents and Basic Industrial Chemicals - 804 Chemical Products Generally - 804.1 Organic Compounds - 804.2 Inorganic Compounds
Numerical data indexing: Percentage 7.71e+01%, Percentage 9.12e+01%, Time 1.08e+04s
DOI: 10.3184/146867815X14297096506014
Compendex references: YES
Open Access type(s): All Open Access, Bronze
Database: Compendex
Data Provider: Engineering Village

168. On fuzzy filters of CI-algebras

Accession number: 20162002385823
Authors: Wang, Wei (1, 2); Zhao, Kuan-Kuan (1); Xu, Yang (2)
Author affiliation: (1) School of Science, Xi'An Shiyou University, Xi'an, China; (2) College of Electrical Engineering, Southwest Jiaotong University, Chengdu, China
Source title: 2015 12th International Conference on Fuzzy Systems and Knowledge Discovery, FSKD 2015
Abbreviated source title: Int. Conf. Fuzzy Syst. Knowl. Discov., FSKD
Part number: 1of1
Issue title: 2015 12th International Conference on Fuzzy Systems and Knowledge Discovery, FSKD 2015
Issue date: January 13, 2016
Publication year: 2015
Pages: 113-117
Article number: 7381925
Language: English
ISBN-13: 9781467376822
Document type: Conference article (CA)
Conference name: 12th International Conference on Fuzzy Systems and Knowledge Discovery, FSKD 2015
Conference date: August 15, 2015 - August 17, 2015
Conference location: Zhangjiajie, China
Conference code: 119123
Publisher: Institute of Electrical and Electronics Engineers Inc., United States

Abstract: In this paper after first introducing the fuzzy filter of CI-algebras we get several properties, we find that the notions of N-structured subalgebras, N-structured filters of CI-algebra and some of their basic properties and results are direct results on fuzzy filter of CI-algebra. Next we recall the contents of the filters in pseudo BL algebra. By exploring the equivalent condition of fuzzy normal filter, an open problem between two kinds of filters was solved. Jun and Xu et al. proved that in lattice implication algebra a positive implicative filter is implicative, and set the converse of it as an open problem. For the third part of this paper, we define the corresponding fuzzy filters and inspired by the fuzzy results we solve the open problem. © 2015 IEEE.
Number of references: 32
Main heading: Algebra
Controlled terms: Fuzzy filters - Bandpass filters - Problem solving - Fuzzy inference
Uncontrolled terms: filter - Lattice implication algebra - Normal filters - positive implicative filter - Subalgebras
Classification code: 703.2 Electric Filters - 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 - 921.1 Algebra
DOI: 10.1109/FSKD.2015.7381925
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

169. Study on relationship between microstructure and mechanical properties of casing-drilling steels

Accession number: 20154401471067
Authors: Xu, Tian-Han (1); Feng, Yao-Rong (2); Luo, She-Ji (1); Wang, Dang-Hui (1); Yang, Bao (1)
Author affiliation: (1) College of Materials Science and Engineering, Xi'an Shiyou University, Xi'an, China; (2) Tubular Goods Research Centre of CNPC, Xi'an, China
Source title: Cailiao Rechuli Xuebao/Transactions of Materials and Heat Treatment
Abbreviated source title: Cailiao Rechuli Xuebao
Volume: 36
Issue: 9
Issue date: September 25, 2015
Publication year: 2015
Pages: 47-54
Language: Chinese
ISSN: 10096264
CODEN: JRXUDO
Document type: Journal article (JA)
Publisher: Editorial Office of Transactions of Materials and Heat Treatment
Abstract: The relationship between microstructure and mechanical properties of casing-drilling steels was investigated by means of TEM, SEM and fatigue tests. The results show that the microstructure of the steel with tempered martensite (TM steel) possesses remarkable higher strength and higher hardness values, and the lower strength and hardness of the steel with microstructure of ferrite and pearlite (PM steel) is observed. The Charpy energy absorption values of the steel with ferrite-bainite-tempered martensite (FBM steel) and TM steel are five times higher than that of the PF steel, and the impact fracture of PF steel exhibits a cleavage fracture mechanism, whereas that of the FBM steel primarily follows ductile fracture mechanism. The fatigue crack growth paths and tensile properties of the steel are dependent on its microstructure, the PF steel possesses the highest m value and lowest C value in Paris equation, and the TM steel exhibits the lowest m value and highest C value. ©, 2015, Editorial Office of Transactions of Materials and Heat Treatment. All right reserved.
Number of references: 20
Main heading: Microstructure
Controlled terms: Brittle fracture - Hardness - Fatigue crack propagation - Fatigue testing - Ductile fracture - Ferrite - Martensite
Uncontrolled terms: Casing drilling steels - Cleavage fracture - Fracture mechanisms - Hardness values - Impact fracture - Impact property - Microstructure and mechanical properties - Tempered martensite
Classification code: 531.2 Metallography - 951 Materials Science
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

170. Influence of mode III load component on fracture toughness of casing-drilling steels with different microstructures

Accession number: 20154701563112
Authors: Xu, Tian-Han (1); Feng, Yao-Rong (2)
Author affiliation: (1) College of Materials Science and Engineering, Xi'an Shiyou University, Xi'an; 710065, China; (2) CNPC Tubular Goods Research Institute, Xi'an; 710065, China
Corresponding author: Xu, Tian-Han(xutianhan@xsyu.edu.cn)
Source title: Cailiao Gongcheng/Journal of Materials Engineering
Abbreviated source title: Cailiao Gongcheng
Volume: 43
Issue: 9
Issue date: September 20, 2015
Publication year: 2015
Pages: 66-73
Language: Chinese
ISSN: 10014381
CODEN: CAGOEW
Document type: Journal article (JA)
Publisher: Beijing Institute of Aeronautical Materials (BIAM)
Abstract: The mixed-mode I/III fracture toughness of casing-drilling steels with different microstructures was investigated by means of fatigue testers and SEM. The results show that JT of both PF and FBM steels firstly slightly increase with the increase of mode III load component and then decrease continuously, whereas that of TM steel decreases monotonically, which can be attributed to the different fracture surface morphology resulting from the remarkable different microstructure. Meanwhile, it can be found that TM steel possesses the maximum JT and PF steel possesses the minimum JT, respectively, that of FBM is in the middle under different mode III load components. For the three steels, JI and JIII exhibit linear relationship, and the higher the strength, the lower the linear coefficient, the easier to occur fracture under shearing load.
Number of references: 22
Main heading: Microstructure
Controlled terms: Fatigue testing - Fracture toughness
Uncontrolled terms: Casing drilling steels - Fracture morphology - Fracture surface morphology - Linear coefficients - Linear relationships - Load components - Mixed mode - Shearing loads
Classification code: 951 Materials Science
DOI: 10.11868/j.issn.1001-4381.2015.09.011
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

171. Influence of stress ratio on the fatigue crack propagation behavior of K55 casing-drilling steel

Accession number: 20153301169899
Authors: Xu, Tian-Han (1); Wang, Rong (1); Feng, Yao-Rong (2); Luo, She-Ji (1); Wang, Dang-Hui (1); Yang, Bao (1)
Author affiliation: (1) College of Materials Science and Engineering, Xi'an Shiyou University, Xi'an; 710065, China; (2) Tubular Goods Research Centre of CNPC, Xi'an; 710065, China
Corresponding author: Xu, Tian-Han(xutianhan@xsyu.edu.cn)
Source title: Cailiao Gongcheng/Journal of Materials Engineering
Abbreviated source title: Cailiao Gongcheng
Volume: 43
Issue: 6
Issue date: June 20, 2015
Publication year: 2015
Pages: 79-84
Language: Chinese
ISSN: 10014381
CODEN: CAGOEW

Document type: Journal article (JA)
Publisher: Beijing Institute of Aeronautical Materials (BIAM)
Abstract: The influence of stress ratio on the fatigue crack growth (FCG) behaviour of K55 casing-drilling steel was investigated by means of scanning electron microscopy (SEM) and fatigue tests. The results show that stress ratio possesses a remarkable influence on #K responding to starting point of crack unstable zone. The FCG rates responding to starting point of crack unstable zone exhibit a significant decrease with the increase of stress ratios, and the FCG threshold value possesses a significant decrease. The average load, which is gradually instead of #K, turns into the dominant drive force of the FCG when the fatigue crack propagates into the unstable zone from Paris region bit by bit. The fatigue fracture surface exhibits obviously impact facture characterization, when the crack propagates into overload tensile zone. ©, 2015, Beijing Institute of Aeronautical Materials (BIAM). All right reserved.
Number of references: 17
Main heading: Fatigue crack propagation
Controlled terms: Fracture - Fatigue testing - Tensile strength - Scanning electron microscopy
Uncontrolled terms: Casing drilling steels - Fatigue crack propagation behavior - Fatigue cracks - Fatigue fracture surfaces - Fracture morphology - Stress intensity factor range - Stress ratio - Threshold-value
Classification code: 951 Materials Science
DOI: 10.11868/j.issn.1001-4381.2015.06.013
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

172. Study on the method of quantitative evaluation for “three qualities” of CBM reservoir using logging data: A case study from the Hancheng mine at the eastern edge of the ordos basin

Accession number: 20153201107445
Authors: Liu, Zhi-Di (1); Zhao, Jing-Zhou (1); Shi, Bao-Hong (1); Er, Chuang (1); Hou, Song-Yi (2); Wang, Jian (1)
Author affiliation: (1) School of Earth Sciences and Engineering, Xi'an Shiyou University, Xi'an, China; (2) PetroChina Coalbed Methane Company Limited, Beijing, China
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Publication year: 2015
Pages: 966-978
Language: Chinese
ISSN: 16721926
Document type: Journal article (JA)
Publisher: Science Press
Abstract: For the CBM enrichment and high yield, the reservoir quality, sealing quality of roof and floor and completion quality (three qualities) play a decisive role. According to the log, laboratory analytical data of coal core, logging evaluation methods for main controlling factors of “three qualities” in CBM reservoir are discussed in detail. The quantitative evaluation methods of “three qualities” are established by the main controlling factors of organic fusion mean. Based on these methods, “three qualities” of CBM reservoir in the study area are carried out through quantitative evaluation. The results show that those methods can evaluate “three qualities” of CBM reservoir quantitatively and effectively. The evaluation results are closely consistent with the tests of laboratory analysis and fracturing dynamic drainage results. For the 11# CBM reservoir, the reservoir quality of the central area is much better than that in the northeast and southwest, the one in the northeast is slightly better than the southwest; Overall, the sealing quality of roof and floor block of the 11# coal seam is good. The sealing types are mainly I, II, the area with good sealing quality locates in the middle of the study area, the poor area locates in the northeast and southwest of the study area; The greater the brittleness index and the stress difference between coal seam and its roof and floor, the smaller the difference coefficient of coal seam stress, and the higher the coal structure index. Then the fracturing of coal seam is strong, the productivity effect is remarkable after fracturing drainage. To obtain high-yield in CBM wells, it requires not only good reservoir quality and sealing quality of roof and floor block, but also the completion quality of fracturing zone, which is an important factor that cannot be ignored. ©, 2015, Science Press. All right reserved.
Number of references: 20
Main heading: Floors

Controlled terms: Quality control - Roofs - Coal - Coal bed methane - Fracture - Fracture mechanics - Coal deposits - Methane
Uncontrolled terms: Coalbed methanes - Difference coefficients - Evaluation results - Laboratory analysis - Main controlling factors - Quantitative evaluation - Quantitative evaluation methods - Reservoir quality
Classification code: 402 Buildings and Towers - 503 Mines and Mining, Coal - 512.2 Natural Gas Deposits - 522 Gas Fuels - 524 Solid Fuels - 804.1 Organic Compounds - 913.3 Quality Assurance and Control - 931.1 Mechanics - 951 Materials Science
DOI: 10.11764/j.issn.1672-1926.2015.05.0966
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

173. Multi-response optimisation design of parameters for cold ring rolling process using fuzzy-grey method

Accession number: 20151100622898
Authors: Li, Lanyun (1); Li, Xiao (1); Liu, Jing (1); He, Zhi (1)
Author affiliation: (1) Key Laboratory of Materials Processing Engineering, School of Material Science and Engineering, Xi'an Shiyou University, Xi'an; 710065, China
Corresponding author: Li, Lanyun(lanyun7810@126.com)
Source title: International Journal of Materials and Product Technology
Abbreviated source title: Int J Mater Prod Technol
Volume: 50
Issue: 2
Issue date: January 2, 2015
Publication year: 2015
Pages: 101-123
Language: English
ISSN: 02681900
CODEN: IJMTE2
Document type: Journal article (JA)
Publisher: Inderscience Enterprises Ltd., 29, route de Pre-Bois, Case Postale 856, CH-1215 Geneva 15, CH-1215, Switzerland
Abstract: Cold ring rolling (CRR) is a complex metal forming process with continuous and local three-dimension metal flow under coupled effects with multi-factors, which includes geometry sizes of rolls and ring blank, material properties, speed parameters, friction conditions, etc. In this paper, a multi-response optimisation design for the forming parameters of opened-pass plain CRR process is proposed to obtain the desired quality and precision of the deformed ring. Sixteen virtual orthogonal experimental arrays with five control factors (the radii RD and the rotational speed nD of the driving roll, the radii RM and the feed rate #M of the mandrel, and the friction coefficient μ) are designed based on Taguchi methodology, and four responses (the average spread AS, the fishtail coefficient FC, the equivalent plastic strain distribution SDP and the maximum rolling force MaxRF) are measured according to three-dimension finite element numerical simulation. Moreover, a novel fuzzy-grey optimisation design method, which can effectively deal with the uncertain nature of the measured data and observably reduce the analysis cost by parallel computing, is proposed by integrating grey relational analysis with fuzzy relational analysis. The investigation clearly shows that the proposed method can serve as a valuable guideline to optimise the forming parameters of the CRR process. Copyright © 2015 Inderscience Enterprises Ltd.
Number of references: 28
Main heading: Finite element method
Controlled terms: Design - Friction - Uncertainty analysis - Metal analysis - Cold rolling
Uncontrolled terms: Cold ring rolling - Grey relational analysis - Optimisation designs - Relational analysis - Taguchi methodology
Classification code: 535.1.2 Rolling Mill Practice - 921.6 Numerical Methods - 922.1 Probability Theory
DOI: 10.1504/IJMPT.2015.067818
Funding Details: Number: P2015-03, Acronym: HUST, Sponsor: Huazhong University of Science and Technology;
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

174. Research on Diospyros Kaki L.f leaf extracts as green and eco-friendly corrosion and oil field microorganism inhibitors

Accession number: 20143600035687
Authors: Chen, Gang (1); Hou, Xiao-Qing (1); Gao, Qi-Long (1); Zhang, Li (1); Zhang, Jie (1); Zhao, Jing-Rui (2)
Author affiliation: (1) College of Chemistry and Chemical Engineering, Xi'An Shiyou University, Xi'an, Shaanxi; 710065, China; (2) Shaanxi hai'An Industry Co., LTD, Xi'an, Shaanxi; 710065, China
Corresponding author: Chen, Gang
Source title: Research on Chemical Intermediates
Abbreviated source title: Res Chem Intermed
Volume: 41
Issue: 1
Issue date: February 2015
Publication year: 2015
Pages: 83-92
Language: English
ISSN: 09226168
E-ISSN: 15685675
CODEN: RCINEE
Document type: Journal article (JA)
Publisher: Kluwer Academic Publishers
Abstract: Extracts of Diospyros Kaki L.f (persimmon) leaves were investigated, by using weight loss and potentiodynamic polarisation techniques, as green and eco-friendly corrosion inhibitors of Q235A steel in 1 M HCl. The inhibition efficiency of the extracts varied with extract concentration from 10 to 1,000 mg/L, and the highest efficiency was 94.3 %. The extracts inhibit corrosion mainly by an adsorption mechanism. Potentiodynamic polarization studies indicate that extracts are mixed-type inhibitors. In addition, the extracts were screened for antibacterial activity against oil field microorganisms, and they showed good to moderate activity against SRB, IB, and TGB. © Springer Science +Business Media 2013.
Number of references: 34
Main heading: Microorganisms
Controlled terms: Corrosion inhibitors - Electrochemical corrosion - Efficiency - Extraction - Polarization - Steel corrosion - Environmental protection - Oil well flooding
Uncontrolled terms: Acid corrosion - Adsorption mechanism - Anti-bacterial activity - Eco-friendly - Inhibition efficiency - Leaf extracts - Microbiological corrosion - Potentiodynamic polarization studies
Classification code: 454.2 Environmental Impact and Protection - 461.9 Biology - 511.1 Oil Field Production Operations - 539.1 Metals Corrosion - 539.2.1 Protection Methods - 545.3 Steel - 801.4.1 Electrochemistry - 802.2 Chemical Reactions - 802.3 Chemical Operations - 803 Chemical Agents and Basic Industrial Chemicals - 913.1 Production Engineering
Numerical data indexing: Mass_Density 1.00e-02kg/m3 to 1.00e+00kg/m3, Percentage 9.43e+01%
DOI: 10.1007/s11164-013-1170-8
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

175. An efficient reactive power regulation based DPC method for AC/DC converters

Accession number: 20161402190215
Authors: Jingjing, Huang (1); Yuangang, Sun (2); Xiangqian, Tong (1); Ning, Li (1)
Author affiliation: (1) School of Automation and Information Engineering, Xi'An University of Technology, China; (2) College of Electronic Engineering, Xi'An Shiyou University, China
Source title: 9th International Conference on Power Electronics - ECCE Asia: "Green World with Power Electronics", ICPE 2015-ECCE Asia
Abbreviated source title: Int. Conf. Power Electron. - ECCE Asia:
Issue title: 9th International Conference on Power Electronics - ECCE Asia: "Green World with Power Electronics", ICPE 2015-ECCE Asia
Issue date: July 27, 2015
Publication year: 2015
Pages: 2675-2680
Article number: 7168147
Language: English

ISBN-13: 9788957082546
Document type: Conference article (CA)
Conference name: 9th International Conference on Power Electronics - ECCE Asia, ICPE 2015-ECCE Asia
Conference date: June 1, 2015 - June 5, 2015
Conference location: Seoul, Korea, Republic of
Conference code: 116804
Publisher: Institute of Electrical and Electronics Engineers Inc.
Abstract: To eliminate the cyclical fluctuation problems of the reactive power existing in the traditional direct power control (DPC), a novel method is proposed for the three-phase voltage source AC/DC converter. It employs two switching tables to select the proper switching states according to the instantaneous reactive power deviations. The design principle of the switching tables is provided to ensure the efficient reactive power regulation. Moreover, it should guarantee the steady characteristic of the converter system. The simulation model established under the MATLAB/Simulink environment and the experiment were presented to compare the characteristics obtained by the proposed strategy with that obtained by the traditional DPC strategy. The results show that the ac current obtained by the proposed strategy has the much lower total harmonic distortion rate (THD), and the fluctuation range of the reactive power has the more than two times reduction. © 2015 Korean Institute of Power Electronics.
Number of references: 14
DOI: 10.1109/ICPE.2015.7168147
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

176. Effect of SRB on corrosion behavior of X100 steel in simulated solution of Yingtan soil

Accession number: 20153301169898
Authors: Xu, Cong-Min (1); Yang, Dong-Ping (1); Zhang, Ling-Zhi (1); Shi, Li-Qiang (1); Li, Hui-Hui (1)
Author affiliation: (1) Key Laboratory of Materials Processing Engineering, School of Materials Science and Engineering, Xi'an Shiyou University, Xi'an; 710065, China
Corresponding author: Xu, Cong-Min(cmxu@xsyu.edu.cn)
Source title: Cailiao Gongcheng/Journal of Materials Engineering
Abbreviated source title: Cailiao Gongcheng
Volume: 43
Issue: 6
Issue date: June 20, 2015
Publication year: 2015
Pages: 71-78
Language: Chinese
ISSN: 10014381
CODEN: CAGOEW
Document type: Journal article (JA)
Publisher: Beijing Institute of Aeronautical Materials (BIAM)
Abstract: The corrosion behavior of X100 steel was studied in simulated solution of Yingtan soil with and without sulfate-reducing bacteria (SRB) by means of mass-loss measurement, linear polarization curves and electrochemical impedance spectroscopy (EIS) techniques, combined with scanning electron microscopy(SEM) and spectroscopy analyzer(EDS). The results show that the corrosion rate with and without SRB with time is: decrease#increase#decrease, the corrosion rate with SRB is less than without SRB, SRB inhibit the corrosion of X100 steel; Corrosion rate is controlled by uniformity and compactness of corrosion product films, Corrosion product film is loose, uneven and less protective in the solution without SRB. In the solution with SRB, however, a compact and homogeneous bonding film is formed on the steel surface, which could suppress the mass transfer so that to mitigate the steel corrosion. Corrosion products are Fe2O3, Fe3O4 and α–FeO(OH) in the solution without SRB, while corrosion products are Fe3O4 and FeS in the solution with SRB. ©, 2015, Beijing Institute of Aeronautical Materials (BIAM). All right reserved.
Number of references: 25
Main heading: Soils
Controlled terms: Corrosion rate - Corrosive effects - Magnetite - Hematite - Mass transfer - Sulfur compounds - Underground corrosion - Steel corrosion - Electrochemical corrosion - Electrochemical impedance spectroscopy - Corrosion protection - Scanning electron microscopy
Uncontrolled terms: Corrosion behavior - Corrosion product film - Corrosion products - Linear polarization - Mass-loss measurement - Simulated solution - Steel surface - Sulfate reducing bacteria

Classification code: 482.2 Minerals - 483.1 Soils and Soil Mechanics - 539.1 Metals Corrosion - 539.2 Corrosion Protection - 545.3 Steel - 641.3 Mass Transfer - 801 Chemistry - 801.4.1 Electrochemistry - 802.2 Chemical Reactions
DOI: 10.11868/j.issn.1001-4381.2015.06.012
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

177. Fourier analysis applied on MZI transmission spectrum for refractive index measurement

Accession number: 20150900590082
Authors: Fu, Hai-Wei (1); Yan, Xu (1); Shao, Min (1); Li, Huidong (1); Gao, Hong (1); Jia, Zhenan (1); Qiao, Xueguang (1)
Author affiliation: (1) Key Laboratory on Photoelectric Oil-Gas Logging and Detecting, School of Science, Xi'an Shiyou University, Xi'an; 710065, China
Source title: IEEE Photonics Technology Letters
Abbreviated source title: IEEE Photonics Technol Lett
Volume: 27
Issue: 6
Issue date: March 15, 2015
Publication year: 2015
Pages: 658-660
Article number: 7005467
Language: English
ISSN: 10411135
E-ISSN: 19410174
CODEN: IPTLEL
Document type: Journal article (JA)
Publisher: Institute of Electrical and Electronics Engineers Inc., United States
Abstract: An approach for surrounding refractive index (SRI) measurement is proposed and demonstrated using all fiber Mach-Zehnder interferometer (MZI) formed by fusion splicing a short section of thin-core fiber between two sections of single-mode fibers with lateral offsets. The transmission spectrum of the MZI is dominantly formed by the superposition of two cladding modes separately interference with the core mode, which correspond to two frequency components in its fast Fourier transform (FFT) spectrum, respectively. In this letter, the two frequency components are extracted to take the inverse FFT, respectively, thus we can obtain two dual-mode interference (DMI) patterns between the cladding modes and the core mode. As the SRI changes, the shifts of the two DMI patterns with SRI will be observed. Through this way, we can eliminate the influence of multiple interferences and improve the accuracy of the sensor. The approach can also be utilized with other modal interferometric sensors. © 1989-2012 IEEE.
Number of references: 13
Main heading: Fourier analysis
Controlled terms: Fast Fourier transforms - Fourier series - Refractive index - Single mode fibers
Uncontrolled terms: Frequency components - Interferometric sensor - Multiple interferences - Optical fiber applications - Optical fiber interference - Refractive index measurement - Surrounding refractive indices (SRI) - Transmission spectrums
Classification code: 741.1 Light/Optics - 741.1.2 Fiber Optics - 921 Mathematics - 921.3 Mathematical Transformations
DOI: 10.1109/LPT.2015.2389818
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

178. Clustering piecewise double support vector domain classifier

Accession number: 20154501520935
Authors: Liang, Jin-Jin (1); Wu, De (2)
Author affiliation: (1) School of Mathematical Sciences, Xi'an Shiyou University, Xi'an; 710065, China; (2) School of Computer Sciences, Xidian University, Xi'an; 710071, China
Corresponding author: Liang, Jin-Jin(myonlyonly@126.com)
Source title: Kongzhi yu Juece/Control and Decision

Abbreviated source title: Kongzhi yu Juece Control Decis
Volume: 30
Issue: 7
Issue date: July 1, 2015
Publication year: 2015
Pages: 1298-1302
Language: Chinese
ISSN: 10010920
CODEN: KYJUEF
Document type: Journal article (JA)
Publisher: Northeast University
Abstract: Support vector domain classifiers have disadvantages like long training time and large memory. The clustering piecewise double support vector domain classifier(CPDSVDC) is proposed. CPDSVDC uses C means algorithm to partition the original space, and selects the initial cluster centers by samples with large density indexes. The dual support vector domain classifier is constructed in each divided subspace, and the corresponding piecewise decision function is also constructed based on the position relationship between the test sample and the two minimum enclosing spheres. The variable distance of the test sample is defined, and linking rule is used to combine classification results in all subspaces. Numerical experiments demonstrate that the CPDSVDC has high classification accuracy that varies slightly with parameters and low training time that decreases with the number of subspaces. ©, 2015, Northeast University. All right reserved.
Number of references: 13
Main heading: Vectors
Uncontrolled terms: Classification accuracy - Classification results - Clustering - Initial cluster centers - Numerical experiments - Piece-wise - Support vector domain classifier - Variable distances
Classification code: 921.1 Algebra
DOI: 10.13195/j.kzyjc.2014.0815
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

179. Anisotropic diffusion model based on generalized metric in Sobolev space

Accession number: 20151300678592
Authors: Liu, Xiao-Yan (1, 2); Feng, Xiang-Chu (1); Zhao, Chen-Ping (1)
Author affiliation: (1) School of Mathematics and Statistics, Xidian University, Xi'an; 710126, China; (2) Faculty of Science, Xi'an Shiyou University, Xi'an; 710065, China
Corresponding author: Liu, Xiao-Yan(feng2001410@163.com)
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Abbreviated source title: Zidonghua Xuebao Acta Auto. Sin.
Volume: 41
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Issue date: February 1, 2015
Publication year: 2015
Pages: 320-329
Language: Chinese
ISSN: 02544156
CODEN: ZIXUDZ
Document type: Journal article (JA)
Publisher: Science Press
Abstract: A generalized metric is defined in Sobolev space, based on which an anisotropic sharpening/diffusion equation is presented. Since the space-varying coefficient of the generalized metric can control the diffusion behavior better, the proposed model can not only highlight the image detail effectively but also achieve a good balance between noise removal and edge preservation. The corresponding implicit algorithm is then developed. Simulation results show that the new model and algorithm are feasible. Copyright © 2015 Acta Automatica Sinica. All rights reserved.
Number of references: 25
Main heading: Sobolev spaces
Controlled terms: Partial differential equations - Diffusion - Optical anisotropy
Uncontrolled terms: Anisotropic Diffusion - Anisotropic diffusion model - Edge preservations - Image diffusion - Image sharpening - Implicit algorithm - Model and algorithms - Space-varying coefficients

Classification code: 741.1 Light/Optics - 921 Mathematics - 921.2 Calculus - 931.2 Physical Properties of Gases, Liquids and Solids
DOI: 10.16383/j.aas.2015.c140564
Funding Details: Number: 61271294,61362029,61379030,61472303, Acronym: -, Sponsor: -;
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

180. Optimal design on FBG acceleration sensor based on single diaphragm

Accession number: 20151100646884
Authors: Liu, Qin-Peng (1); Qiao, Xue-Guang (1); Jia, Zhen-An (1); Fu, Hai-Wei (1); Yu, Da-Kuan (1); Gao, Hong (1)
Author affiliation: (1) Ministry Education Key Laboratory on Photoelectric Oil-gas Logging and Detecting, School of Science, Xi'an shiyou University, Xi'an, China
Corresponding author: Liu, Qin-Peng
Source title: Guangdianzi Jiguang/Journal of Optoelectronics Laser
Abbreviated source title: Guangdianzi Jiguang
Volume: 26
Issue: 1
Issue date: January 15, 2015
Publication year: 2015
Pages: 15-19
Language: Chinese
ISSN: 10050086
CODEN: GUJIE9
Document type: Journal article (JA)
Publisher: Board of Optronics Lasers
Abstract: In order to realize acceleration measurement by the fiber Bragg grating (FBG), an FBG accelerometer model based on the single diaphragm for acceleration sensing is proposed, and the FBG is fabricated by using the method of full viscosity. Firstly, the sensing principle of the model based on the single diaphragm is theoretically analyzed, the sensitivity of acceleration is optimized, and the responses of acceleration sensitivity and frequency based on the single diaphragm are analyzed and discussed. Secondly, the accelerometer based on the model is designed. Amplitude-frequency characteristic and resonance frequency and linear response of the FBG accelerometer are experimentally researched, respectively. When the frequency is less than the resonance frequency, experimental results indicate that it has a good flat range response and linear response. The linear fitting degree is 99.8%, the sensitivity is 36.6 pm/G, and relative error is 3.68%. The anti-directional disturbance ability is experimentally researched, and the cross-sensitivity is less than 1.3%. Experimental results indicate that the FBG accelerometer based on the model has good response characteristics, which is promising to be applied in the project field by reasonably designing the structure parameter. ©, 2015, Board of Optronics Lasers. All right reserved.
Number of references: 21
Main heading: Diaphragms
Controlled terms: Accelerometers - Fiber Bragg gratings - Acceleration - Natural frequencies
Uncontrolled terms: Acceleration sensing - Acceleration sensitivity - Acceleration sensors - Amplitude frequency characteristics - Resonance frequencies - Response characteristic - Sensitivity - Structure parameter
Classification code: 601.2 Machine Components - 943.1 Mechanical Instruments
Numerical data indexing: Percentage 1.30e+00%, Percentage 3.68e+00%, Percentage 9.98e+01%
DOI: 10.16136/j.joel.2015.01.0673
Database: Compendex
Data Provider: Engineering Village

181. Stochastic stabilization of networked control systems with combined stochastic distributed processes

Accession number: 20151700783242
Authors: Wu, Ying (1); Liu, Tianshi (1); Wu, Yanpeng (2); Yuan, Zhaohui (2)
Author affiliation: (1) School of Computer Science, Xi'An Shiyou University, Xi'an; 710065, China; (2) Department of Automation, Northwestern Polytechnical University, Xi'an; 710072, China
Corresponding author: Wu, Ying(wuyg1226@hotmail.com)
Source title: Mathematical Methods in the Applied Sciences

Abbreviated source title: Math Methods Appl Sci
Volume: 38
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Publication year: 2015
Pages: 1652-1661
Language: English
ISSN: 01704214
E-ISSN: 10991476
CODEN: MMSCDB
Document type: Journal article (JA)
Publisher: John Wiley and Sons Ltd
Abstract: The stochastic stability problem of networked control systems (NCSs) with random time delays and packet dropouts is investigated in this paper. The mathematical NCS model is developed as a stochastic discrete-time jump system with combined integrated stochastic parameters characterized by two identically independently distributed processes, which accommodate the abrupt variations of network uncertainties within an integrated frame. The effective instant is introduced to establish the relationship between the destabilizing transmission factors and stability of NCSs. The stabilizing state feedback controller gain that depends not only on the delay modes but also on the dropouts modes is obtained in terms of the linear matrix inequalities formulation via the Schur complement theory. A numerical example is given to demonstrate the effectiveness of the proposed method. Copyright © 2014 John Wiley & Sons, Ltd.

Number of references: 31
Main heading: Time delay
Controlled terms: Control system analysis - Stochastic systems - Control system stability - Numerical methods - Stabilization - Stochastic control systems - Linear matrix inequalities - Networked control systems - Delay control systems - Robustness (control systems) - Timing circuits - Packet loss - State feedback - Stochastic models
Uncontrolled terms: Distributed process - identically independently distribution - Network uncertainties - Networked Control Systems (NCSs) - Packet dropouts - Stochastic parameters - Stochastic stability - Stochastic stabilization
Classification code: 713 Electronic Circuits - 713.4 Pulse Circuits - 731.1 Control Systems - 731.2 Control System Applications - 731.4 System Stability - 921.1 Algebra - 921.6 Numerical Methods - 922.1 Probability Theory - 961 Systems Science
DOI: 10.1002/mma.3177
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

182. Loads of casing and cement sheath in the compressive viscoelastic salt rock

Accession number: 20153701276298
Authors: Wang, Xiaozeng (1); Qu, Zhan (2); Dou, Yihua (2); Ma, Wenhai (3)
Author affiliation: (1) Northwestern Polytechnical University, Xi'an; 710072, China; (2) Xi'an Shiyou University, Xi'an; 710065, China; (3) Daqing Oilfield Limited Company, Daqing; 163453, China
Corresponding author: Wang, Xiaozeng(xzwang@jyu.edu.cn)
Source title: Journal of Petroleum Science and Engineering
Abbreviated source title: J. Pet. Sci. Eng.
Volume: 135
Issue date: November 01, 2015
Publication year: 2015
Pages: 146-151
Language: English
ISSN: 09204105
Document type: Journal article (JA)
Publisher: Elsevier B.V., Netherlands
Abstract: The purpose of the research is to calculate loads applied to downhole casing and cement sheath in the viscoelastic salt rock under the action of in situ stress. Considering that materials of the viscoelastic salt rock around the wellbore and cement sheath are compressible, a geomechanical model which includes casing, cement sheath, and salt rock is developed. The Burgers creep model is adopted to describe the long-term rheological behavior of salt rock, and the three components model is used to describe that of cement sheath under in situ stress. Adopting the elastic viscoelastic corresponding principle (EVCP 1, the solutions of loads of casing and cement sheath are obtained

in the compressive viscoelastic salt (CVS) on the basis of the elastic solutions of the same problem. The limit value of loading of casing is more than that of cement sheath in the given example, which exponentially increases with time. Compared to the limit value of loading of casing in the uncompressible viscoelastic salt (UVS), it is increased by 10.0% in the compressible viscoelastic salt. The limit loading of cement sheath in CVS is about 0.5% less than that of cement sheath in UVS. Taking the surrounding salt as the uncompressible material is very dangerous to assess the damage risk of downhole casing, and likely causes the collapse of casing. © 2015 Elsevier B.V.
Number of references: 22
Main heading: Cements
Controlled terms: Salt deposits - Risk assessment - Oil well cementing - Rocks - Stresses - Laplace transforms - Viscoelasticity - Creep
Uncontrolled terms: Creep model - Elastic solutions - Elastic-viscoelastic - Geomechanical model - Insitu stress - Laplace transformations - Rheological behaviors - Three component
Classification code: 412.1 Cement - 505.1 Nonmetallic Mines - 512.1.2 Petroleum Deposits : Development Operations - 914.1 Accidents and Accident Prevention - 921.3 Mathematical Transformations - 931.2 Physical Properties of Gases, Liquids and Solids - 951 Materials Science
Numerical data indexing: Percentage 1.00e+01%, Percentage 5.00e-01%
DOI: 10.1016/j.petrol.2015.08.020
Funding Details: Number: 51174162, Acronym: AIC, Sponsor: Innovative Research Group Project of the National Natural Science Foundation of China;
Funding text: This research was financially supported by the National Natural Science Foundation Project of China (Grant no. 51174162).
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

183. A highly effective corrosion inhibitor based on gemini imidazoline

Accession number: 20153401189993
Authors: Yang, Jiang (1); Liu, Xuan (2); Jia, Shuai (2); Qin, Wenlong (2); Yin, Chengxian (3); Liu, Chen (4)
Author affiliation: (1) RIPED, PetroChina, Xi'An Petroleum University, China; (2) Xi'An Petroleum University, China; (3) Tubular Goods R and D Center, PetroChina, China; (4) Southwest Petroleum University, China
Source title: Proceedings - SPE International Symposium on Oilfield Chemistry
Abbreviated source title: Proc SPE Int Symp Oilfield Chem
Volume: 2
Part number: 2of2
Issue title: Society of Petroleum Engineers - International Symposium on Oilfield Chemistry 2015
Issue date: 2015
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Language: English
ISSN: 10461779
CODEN: 85REAQ
ISBN-13: 9781510802469
Document type: Conference article (CA)
Conference name: International Symposium on Oilfield Chemistry 2015
Conference date: April 13, 2015 - April 15, 2015
Conference location: The Woodlands, TX, United states
Conference code: 113547
Sponsor: Carbo; Clariant Oil Services; et al.; Lubrizol Corporation; Nalco Champion, an Ecolab Company; Sasol Performance Chemicals GmbH
Publisher: Society of Petroleum Engineers (SPE)
Abstract: Corrosion inhibitors are widely used to control corrosion under the sweet and sour environments in oil and gas industries. More effective and environment friendly corrosion inhibitors need to be developed. This paper studies a new gemini imidazoline corrosion inhibitor, which two hydrocarbon chains and two headgroups are linked by a rigid spacer. The gemini imidazoline was synthesized through the reaction of oleic acid with triethylene tetramine at 2:1 molar ratio. The product was characterized by infrared spectroscopy, chromatography and mass spectroscopy. The performance of the gemini imidazoline on inhibition of CO2 corrosion was evaluated by linear polarization resistance in sparged beaker testing. Rotating wheel testing was performed to evaluate the film persistency of the test inhibitors. The results showed that corrosion inhibition of the gemini imidazoline was more effective at lower concentration than that of conventional imidazoline. The gemini imidazoline mixed with fatty acid also showed better film persistency than

that of conventional imidazoline. The emulsion tendency of the gemini imidazoline was less than that of conventional imidazoline. The mechanism of the highly effective gemini imidazoline was studied. It showed that gemini imidazoline has much higher surface activity than that of conventional imidazoline. The critical micelle concentration is several times lower than that of conventional imidazoline. Hence, the new gemini imidazoline (GIM) corrosion inhibitor and its mixture give more effective corrosion inhibition at low concentration, which also has less environmental impact.
Number of references: 11
Main heading: Corrosion inhibitors
Controlled terms: Hydrocarbons - Critical micelle concentration - Petroleum engineering - Emulsification - Infrared spectroscopy - Mass spectrometry - Chromatography - Corrosion - Environmental impact - Fatty acids
Uncontrolled terms: Corrosion inhibition - Environment friendly - Hydrocarbon chains - Linear polarization resistance - Low concentrations - Mass spectroscopy - Oil and Gas Industry - Surface activities
Classification code: 454.2 Environmental Impact and Protection - 539.2.1 Protection Methods - 801 Chemistry - 801.3 Colloid Chemistry - 802.3 Chemical Operations - 803 Chemical Agents and Basic Industrial Chemicals - 804.1 Organic Compounds
DOI: 10.2118/173777-ms
Funding Details: Number: 51174163, Acronym: -, Sponsor: -;
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

184. Species conservation-based hybrid algorithm for reversible circuit synthesis

Accession number: 20155101700088
Authors: Wang, Xiaoxiao (1, 2); Jiao, Licheng (1); Li, Yangyang (1)
Author affiliation: (1) School of Electrical Engineering, Xidian University, Xi'an; 710071, China; (2) School of Computer Science, Xi'an Shiyou University, Xi'an; 710065, China
Source title: Huazhong Keji Daxue Xuebao (Ziran Kexue Ban)/Journal of Huazhong University of Science and Technology (Natural Science Edition)
Abbreviated source title: Huazhong Ligong Daxue Xuebao
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Issue date: November 23, 2015
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Language: Chinese
ISSN: 16714512
Document type: Journal article (JA)
Publisher: Huazhong University of Science and Technology
Abstract: In order to decrease the quantum cost of small and medium-sized reversible functions with more than 4 bit, a species conservation-based variable-length encoding hybrid algorithm for reversible logic circuit synthesis was proposed based on an existing variable-length encoding hybrid algorithm. Firstly, the species conservation mechanism was customized and introduced into variable-length encoding population to maintain the diversity of the population. The similarity definition between chromosomes with different lengths was given, based on which seeds subtraction and species differentiation were conducted. Then, the species restart strategy and heuristic species update were proposed to avoid the genetic draft of the population with variable-length encoding. The experimental results show that the proposed algorithm can reduce the quantum cost of common reversible benchmarks and improve the feasible ratio greatly. © 2015, Huazhong University of Science and Technology. All right reserved.
Number of references: 19
Main heading: Chromosomes
Controlled terms: Timing circuits - Conservation - Costs - Encoding (symbols) - Signal encoding - Computer circuits
Uncontrolled terms: Diversity conserving - Quantum costs - Reversible circuits - Species conservations - Variable length chromosome
Classification code: 461.2 Biological Materials and Tissue Engineering - 713.4 Pulse Circuits - 716.1 Information Theory and Signal Processing - 721.3 Computer Circuits - 723.2 Data Processing and Image Processing - 911 Cost and Value Engineering; Industrial Economics
DOI: 10.13245/j.hust.151110
Compendex references: YES
Database: Compendex

Data Provider: Engineering Village

185. Adaptive iterative learning control for complex dynamical networks (*Open Access*)

Accession number: 20150600493728
Authors: Hao, Xiuqing (1, 2); Li, Junmin (1)
Author affiliation: (1) School of Mathematics and Statistics, Xidian University, Xi'an; 710071, China; (2) School of Science, Xi'An Shiyou University, Xi'an; 710065, China
Corresponding author: Li, Junmin(jmli@mail.xidian.edu.cn)
Source title: Mathematical Problems in Engineering
Abbreviated source title: Math. Probl. Eng.
Volume: 2015
Issue date: January 14, 2015
Publication year: 2015
Article number: 462027
Language: English
ISSN: 1024123X
E-ISSN: 15635147
Document type: Journal article (JA)
Publisher: Hindawi Limited, 410 Park Avenue, 15th Floor, 287 pmb, New York, NY 10022, United States
Abstract: A new adaptive iterative learning control scheme is proposed for complex dynamical networks with repetitive operation over a fixed time interval. By designing difference type updating laws for unknown time-varying parameters and coupling strength, the state of each node in complex dynamical networks can track the reference signal. By constructing a composite energy function, a sufficient condition of the convergence of tracking error sequence is achieved in the iteration domain. Finally, a numerical example is given to show the effectiveness of the designed method. © 2015 Xiuqing Hao and Junmin Li.
Number of references: 25
Main heading: Iterative methods
Controlled terms: Adaptive control systems - Two term control systems - Complex networks - Numerical methods - Learning algorithms
Uncontrolled terms: Adaptive iterative learning control - Complex dynamical networks - Composite energy function - Coupling strengths - Fixed time interval - Reference signals - Repetitive operations - Time varying parameter
Classification code: 722 Computer Systems and Equipment - 723.4.2 Machine Learning - 731.1 Control Systems - 921.6 Numerical Methods
DOI: 10.1155/2015/462027
Funding Details: Number: 60974139, Acronym: -, Sponsor: -;
Compendex references: YES
Open Access type(s): All Open Access, Gold, Green
Database: Compendex
Data Provider: Engineering Village

186. Adaptive synchronization for complex dynamical networks with unknown time-varying topological structures

Accession number: 20151800797122
Authors: Hao, Xiuqing (1, 2); Li, Junmin (1)
Author affiliation: (1) School of Mathematics and Statistics, Xidian Univ., Xi'an; 710071, China; (2) School of Science, Xi'an Shiyou Univ., Xi'an; 710065, China
Corresponding author: Hao, Xiuqing(haoxq1980@163.com)
Source title: Xi'an Dianzi Keji Daxue Xuebao/Journal of Xidian University
Abbreviated source title: Xi'an Dianzi Keji Daxue Xuebao
Volume: 42
Issue: 2
Issue date: April 1, 2015
Publication year: 2015
Pages: 102-107
Language: Chinese
ISSN: 10012400
CODEN: XDKXEP

Document type: Journal article (JA)
Publisher: Science Press
Abstract: An adaptive synchronization approach is proposed for complex dynamical networks with unknown periodically time-varying topological structures. A periodic adaptive learning mechanism is used to estimate the unknown time-varying coupling parameters. By designing adaptive controllers and constructing a composite energy function, a sufficient condition of synchronization for complex dynamical networks is achieved. Numerical example validates the effectiveness of the designed method. ©, 2015, Science Press. All right reserved.
Number of references: 14
Main heading: Synchronization
Controlled terms: Complex networks - Adaptive control systems - Time varying networks - Topology - Numerical methods
Uncontrolled terms: Adaptive Control - Adaptive learning mechanism - Adaptive synchronizations - Complex dynamical networks - Composite energy function - Periodically time-varying - Time varying coupling - Time-varying topological structures
Classification code: 703.1 Electric Networks - 722 Computer Systems and Equipment - 731.1 Control Systems - 921.4 Combinatorial Mathematics, Includes Graph Theory, Set Theory - 921.6 Numerical Methods - 961 Systems Science
DOI: 10.3969/j.issn.1001-2400.2015.02.017
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

187. Quantitatively evaluating sealing ability of coal roof and floor using logging data

Accession number: 20152000840973
Authors: Liu, Zhidi (1); Yang, Xiuchun (2); Zhang, Jikun (2); Chen, Caihong (2); Zhou, Ke (2); Wang, Jian (1)
Author affiliation: (1) School of Earth Sciences and Engineering, Xi'an Shiyou University, Xi'an; 710065, China; (2) PetroChina Coalbed Methane Company Limited, Beijing; 100028, China
Corresponding author: Liu, Zhidi(liuzhidi@xsyu.edu.cn)
Source title: Zhongnan Daxue Xuebao (Ziran Kexue Ban)/Journal of Central South University (Science and Technology)
Abbreviated source title: Zhongnan Daxue Xuebao (Ziran Kexue Ban)
Volume: 46
Issue: 3
Issue date: March 26, 2015
Publication year: 2015
Pages: 1100-1109
Language: Chinese
ISSN: 16727207
CODEN: ZDXZAC
Document type: Journal article (JA)
Publisher: Central South University of Technology
Abstract: The sealing capability of the coal seam roof and floor is the main controlling factor in the enrichment and high yield of the coalbed methane. Based on the idea of core scale logging, by comprehensively analyzing the lithology, physical properties and fracture development characteristics of coal seam roof and floor using logging data, the five evaluation indexes which are lithology coefficient, strata thickness, porosity, permeability and fracture intensity index act as the main factors influencing the sealing ability of coal seam roof and floor. The comprehensive evaluation model of sealing ability of coal seam roof and floor was established, and the calculated evaluation indexes were used to quantitatively evaluate the sealing ability of coal seam roof and floor in the study area. The research results show that the sealing ability of coal seam roof and floor is closely related to the lithology, thickness, physical property and fracture development characteristics of roof and floor, and the sealing performance is proportional to the thickness and lithology coefficient, and is inversely proportional to the porosity, permeability and fracture strength index. The comprehensive evaluation index of the sealing ability of coal seam roof and floor is higher, and the sealing ability is better. The sealing ability of the No.5 coal seam roof and floor is better in the study area, the strong area of sealing capability is located in the west, south and central H10-11 wellblock, and the poor area is located in the northeast. ©, 2015, Central South University of Technology. All right reserved.
Number of references: 12
Main heading: Coal bed methane
Controlled terms: Coal - Firedamp - Fracture - Natural gas wells - Porosity - Coal deposits - Floors - Fracture toughness - Lithology - Methane - Roofs

Uncontrolled terms: Coal roof and floor - Comprehensive evaluation index - Comprehensive evaluation model - Development characteristics - Main controlling factors - Quantitative evaluation - Sealing ability - Sealing performance
Classification code: 402 Buildings and Towers - 481.1 Geology - 503 Mines and Mining, Coal - 512.2 Natural Gas Deposits - 512.2.1 Natural Gas Fields - 522 Gas Fuels - 524 Solid Fuels - 804.1 Organic Compounds - 931.2 Physical Properties of Gases, Liquids and Solids - 951 Materials Science
DOI: 10.11817/j.issn.1672-7207.2015.03.042
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

188. Facile preparation of paper substrates coated with different materials and their applications in paper spray mass spectrometry

Accession number: 20152700993138
Authors: Zheng, Yajun (1); Zhang, Xiaoling (1); Yang, Haijun (2); Liu, Xiaoning (1); Zhang, Xinrong (2); Wang, Qian (1); Zhang, Zhiping (1)
Author affiliation: (1) School of Chemistry and Chemical Engineering, Xi'an Shiyou University, Xi'an; 710065, China; (2) Department of Chemistry, Tsinghua University, Beijing; 100084, China
Corresponding author: Zhang, Zhiping
Source title: Analytical Methods
Abbreviated source title: Anal. Methods
Volume: 7
Issue: 13
Issue date: July 7, 2015
Publication year: 2015
Pages: 5381-5386
Language: English
ISSN: 17599660
E-ISSN: 17599679
Document type: Journal article (JA)
Publisher: Royal Society of Chemistry
Abstract: Direct application of available well-defined materials for mass spectrometry analysis represents a significant step in the combination of materials science and analytical chemistry. The present study introduces a facile vacuum filtration method for directly coating different commercially available materials onto the surface of filter paper. High sensitivity and quantitation precision have been demonstrated for different analytes including therapeutic drugs, proteins and volatile compounds in various matrices using the obtained papers as substrates for paper spray mass spectrometry. © The Royal Society of Chemistry.
Number of references: 16
Main heading: Mass spectrometry
Controlled terms: Chemical analysis - Paper - Vacuum applications - Coated materials - Volatile organic compounds
Uncontrolled terms: Analytes - Facile preparation - Filter papers - High sensitivity - Mass spectrometry analysis - Therapeutic drugs - Vacuum filtration - Volatile compounds
Classification code: 633.1 Vacuum Applications - 801 Chemistry - 804.1 Organic Compounds - 811.1 Pulp and Paper - 813 Coatings and Finishes
DOI: 10.1039/c5ay00874c
Funding Details: Number: 21205093, Acronym: NSFC, Sponsor: National Natural Science Foundation of China;
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

189. Novel attribute-based framework for halftone watermarking

Accession number: 20153601240682
Authors: Xie, Kun (1); Zheng, Hai-Hong (1); Zeng, Ping (1, 2); Wang, Quan (1); Guo, Tao (1)
Author affiliation: (1) School of Computer and Science, Xidian University, Xi'an; 710071, China; (2) College of Computer Science, Xi'an Shiyou University, Xi'an; 710065, China
Corresponding author: Zeng, Ping(zengp@xsyu.edu.cn)

Source title: Journal of Beijing Institute of Technology (English Edition)
Abbreviated source title: J Beijing Inst Technol Engl Ed
Volume: 24
Issue: 2
Issue date: June 1, 2015
Publication year: 2015
Pages: 246-253
Language: English
ISSN: 10040579
CODEN: JBITE5
Document type: Journal article (JA)
Publisher: Beijing Institute of Technology
Abstract: A novel attribute-based framework is proposed to tackle the problem of halftone water-marking in combination of the spatial/transformation domain. The challenge is that the host image is continuous, while the watermarked halftone is bi-level. To search for a solution, an attribute image is defined as a good connection between the original grayscale image and its halftone image. When the attribute image is used as a watermark carrier, it helps to find the watermarked halftone efficiently by solving a constrained modified direct binary search problem. Experimental results demonstrate that the proposed scheme in comparison with other similar methods maintains high watermark capacity with good image quality, high robustness, processing efficiency and easy decoding. Especially it has a good performance in printing application. ©, 2015, Beijing Institute of Technology. All right reserved.
Number of references: 15
Main heading: Digital watermarking
Uncontrolled terms: Attribute image - Attribute-based - Digital halftoning - Direct binary searches - Gray-scale images - High robustness - Printing applications - Transformation domain
Classification code: 723.2 Data Processing and Image Processing
DOI: 10.15918/j.jbit1004-0579.201524.0217
Funding Details: Number: 61100156, Acronym: -, Sponsor: -;
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

190. Research on the architecture of data-intensive computing platform (*Open Access*)

Accession number: 20151100641400
Authors: Hou, Ke (1, 2); Zhang, Jing (1); Fang, Xing (2)
Author affiliation: (1) School of Computer Science and Engineering, Xi'an University of Technology, Xi'an, China; (2) School of Economic and Management, Xi'an Shiyou University, Xi'an, China
Corresponding author: Hou, Ke
Source title: Journal of Software Engineering
Abbreviated source title: J. Softw. Eng.
Volume: 9
Issue: 3
Issue date: 2015
Publication year: 2015
Pages: 686-701
Language: English
ISSN: 18194311
E-ISSN: 21520941
Document type: Journal article (JA)
Publisher: Academic Journals Inc.
Abstract: Data-Intensive Computing (DIC) is a kind of parallel computing which is specific to massive, distributed, heterogeneous and changing dataset processing. The architecture of DIC platform is a set of multiple abstract models, these models describes the function compositions, characteristics, coupling relationships, interaction ways and application scope of each layer in DIC platform. This article studies the architecture of DIC platform. Firstly, the architecture of related parallel computing platform is reviewed. Secondly, the design requirements of DIC platform are analyzed, the integrated research method of DIC is discussed and then an architecture of DIC platform with seven layers is provided. Finally, in order to verify its feasibility and effectiveness, a simple prototype system is implemented to support mass image data parallel processing. Compared with serial processing mode, the prototype system can obtain higher speed-up. © 2015 Academic Journals Inc.
Number of references: 21

Main heading: Mathematical morphology
Controlled terms: Architecture - Data handling - Abstracting - Computer architecture
Uncontrolled terms: Abstract models - Coupling relationships - Data-intensive computing - Higher speed - Integrated research - Parallel computing platform - Prototype system - Serial processing
Classification code: 402 Buildings and Towers - 723.2 Data Processing and Image Processing - 903.1 Information Sources and Analysis
DOI: 10.3923/jse.2015.686.701
Open Access type(s): All Open Access, Bronze
Database: Compendex
Data Provider: Engineering Village

191. Time-varying compensation for peak current-controlled PFC boost converter

Accession number: 20150500473622
Authors: Cheng, Weibin (1); Song, Jiuxu (1); Li, Hong (2); Guo, Yingna (1)
Author affiliation: (1) School of Electronics Engineering, Xi'an Shiyou University, Xi'an; 710065, China; (2) School of Electrical Engineering, Beijing Jiaotong University, Beijing; 100044, China
Source title: IEEE Transactions on Power Electronics
Abbreviated source title: IEEE Trans Power Electron
Volume: 30
Issue: 6
Issue date: June 1, 2015
Publication year: 2015
Pages: 3431-3437
Article number: 6847218
Language: English
ISSN: 08858993
E-ISSN: 19410107
CODEN: ITPEE8
Document type: Journal article (JA)
Publisher: Institute of Electrical and Electronics Engineers Inc., United States
Abstract: In this paper, an optimal time-varying compensation method with zero eigenvalue is first put forward for peak current-controlled power factor correction (PFC) boost converter, which can eliminate the fast-scale instability without zero current dead zone and achieve unity power factor. First, a time-varying mathematic model of a peak current-controlled PFC boost converter under continuous conduction mode is established. Then, based on the theoretical and experimental analyses of the traditional ramp compensation, a time-varying dynamic compensation model and method are presented to obtain zero eigenvalue during the whole line cycle. Therefore, the PFC boost converter occupies the strongest stability control during each switching cycle and can run into stable operation in one switching cycle under any external interference. Finally, the proposed compensation method is verified with experiments. Results show that a unity power factor and the stability in the whole line cycle can be obtained simultaneously. © 2014 IEEE.
Number of references: 25
Main heading: Boost converter
Controlled terms: Eigenvalues and eigenfunctions - Dead zones - Rectifying circuits - Electric power factor correction
Uncontrolled terms: Ac-dc power conversion - BOOST converter - Power factor corrections - Ramp compensation - Time varying
Classification code: 704.1 Electric Components - 731.2 Control System Applications
DOI: 10.1109/TPEL.2014.2334296
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

192. PCT-DTM: PCT-based dynamic task model

Accession number: 20150900580349
Authors: Li, Juanni (1, 2); Hua, Qingyi (1); Ji, Xiang (1)
Author affiliation: (1) Department of Computer Science, School of Information Science and Technology, Northwest University, Xi'an, China; (2) School of Science, Xi'an Shiyou University, Xi'an, China
Corresponding author: Hua, Qingyi

Source title: Journal of Computational Information Systems
Abbreviated source title: J. Comput. Inf. Syst.
Volume: 11
Issue: 2
Issue date: January 15, 2015
Publication year: 2015
Pages: 475-482
Language: English
ISSN: 15539105
Document type: Journal article (JA)
Publisher: Binary Information Press
Abstract: PCT-DTM is a task modeling method that covers the important aspects from problem domain to task model. The main idea of perceptual control theory is applied to the process of task analysis. PCT-DTM has the ability to more accurately describe dynamic tasks in mobile environment from four aspects: task objectives, displayed variables, actions, external influences. With a systematic process of task analysis, a higher level of usable and useful interactive system can be achieve. 1553-9105/Copyright © 2015 Binary Information Press
Number of references: 19
Main heading: Control theory
Controlled terms: Job analysis
Uncontrolled terms: Dynamic task models - External influences - Interactive system - Mobile context - Mobile environments - Perceptual control - Systematic process - Task modeling
Classification code: 731.1 Control Systems
DOI: 10.12733/jcis12953
Funding Details: Number: 61272286, Acronym: NSFC, Sponsor: National Natural Science Foundation of China;
Database: Compendex
Data Provider: Engineering Village

193. Shape evolution of parallelogrammic magnesium oxalate controlled by phosphate species

Accession number: 20153101096393
Authors: Zhang, Xiaoling (1); Zheng, Yajun (1); Yang, Haijun (2); Wang, Qian (1); Zhang, Zhiping (1)
Author affiliation: (1) School of Chemistry and Chemical Engineering, Xi'An Shiyou University, Xi'an; 710065, China; (2) Department of Chemistry, Tsinghua University, Beijing; 100084, China
Corresponding author: Zhang, Xiaoling(zhangzp0304@gmail.com)
Source title: RSC Advances
Abbreviated source title: RSC Adv.
Volume: 5
Issue: 77
Issue date: 2015
Publication year: 2015
Pages: 63034-63043
Language: English
E-ISSN: 20462069
CODEN: RSCACL
Document type: Journal article (JA)
Publisher: Royal Society of Chemistry
Abstract: Phosphate species are capable of playing a crucial role in manipulating the shapes and properties of inorganic materials. Herein, we examined the shape evolution of magnesium oxalate dihydrate (MgC2O4·2H2O) to parallelogrammic microparticles with sheet-like structure in a precipitation process under the influence of phosphate species in the form of sodium tripolyphosphate (Na5P3O10). Supported by a series of time-dependent experiments, the shape evolution of MgC2O4·2H2O was evidenced by the complexation and blocking effect of Na5P3O10via a later adsorption at the surface of the formed MgC2O4·2H2O product. The results from scanning electron microscopy (SEM) images, energy dispersive spectroscopy (EDS) and X-ray photoelectron spectrometry (XPS) measurements show that the shape evolution of parallelogrammic particles is accompanied by a modification in the chemical composition via a later adsorption. Our results demonstrated that the amount of Na5P3O10 participating into the self-assembly of the layer-like parallelogram varied with reaction time. In the initial reaction stage, little amount of Na5P3O10 is involved in the particle formation, and the participating amount increased with extent of reaction. This investigation presents the

effect of Na5P3O10 on the self-assembly of MgC2O4·2H2O particles with layer-like structure and highlights its role in the controllable synthesis of microparticles. © 2015 The Royal Society of Chemistry.
Number of references: 38
Main heading: Magnesium compounds
Controlled terms: Precipitation (chemical) - Scanning electron microscopy - Oxalic acid - Energy dispersive spectroscopy - Sodium compounds - Chemical modification - Self assembly
Uncontrolled terms: Chemical compositions - Controllable synthesis - Energy dispersive spectroscopies (EDS) - Layer-like structures - Precipitation process - Scanning electron microscopy image - Sodium tripolyphosphate - X-ray photoelectron spectrometries
Classification code: 802.3 Chemical Operations - 804.1 Organic Compounds - 951 Materials Science
DOI: 10.1039/c5ra10807a
Funding Details: Number: 21205093, Acronym: NSFC, Sponsor: National Natural Science Foundation of China;
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

194. Supramolecular viscoelastic surfactant fluid for hydraulic fracturing

Accession number: 20161202138088
Authors: Yang, Jiang (1); Lu, Yongjun (1); Zhou, Caineng (1); Cui, Weixiang (1); Guan, Baoshan (1); Qiu, Xiaohui (1); Liu, Ping (1); Ming, Hua (1); Qin, Wenlong (2); Ji, Sixue (2)
Author affiliation: (1) RIPED-Langfang, PetroChina, China; (2) Xi'an Petroleum University, China
Source title: Society of Petroleum Engineers - SPE North Africa Technical Conference and Exhibition 2015, NATC 2015
Abbreviated source title: Soc. Pet. Eng. - SPE North Africa Tech. Conf. Exhib., NATC
Part number: 1of1
Issue title: Society of Petroleum Engineers - SPE North Africa Technical Conference and Exhibition 2015, NATC 2015
Issue date: 2015
Publication year: 2015
Pages: 516-524
Language: English
ISBN-13: 9781510813533
Document type: Conference article (CA)
Conference name: SPE North Africa Technical Conference and Exhibition 2015, NATC 2015
Conference date: September 14, 2015 - September 16, 2015
Conference location: Cairo, Egypt
Conference code: 118472
Publisher: Society of Petroleum Engineers
Abstract: This paper studied a new fracturing fluid based on a supramolecular complex of associative polymer and vsicoelastic surfactant. The crosslink complex gel was based on weak physical attractive forces such as van der waals, hydrogen bonding and electrostatic interaction between associative polymer and wormlike micelle of viscoelastic surfactant. The fluid contained surfactant ten times less than that of conventional viscoelastic surfactant fracturing fluid. The combination of viscoelastic surfactant and associative polymer synergistically enhances the viscosity ten times more than that of the individually components alone. The fluid system was optimized by experimental design. The microstructure of wormlike micelle was verified by cryo-transmission electron microscopy. The fluid is shearing-stable at high temperature for 1 hour. The dynamic rheological properties of the new VES fluid showed high viscoelasticity, in which elastic moduli is higher than loss moduli at angular frequency 0.1 rad/s. The proppant transport test in a large-scale fracture simulator showed good proppant suspension ability. The fluid has 50% lower formation damage than that of conventional guar. The fluid was prepared with less additives and formed gel instantly which can be mixed on the fly in the field. The gel can be completely broken with almost no residue. Field application of the new fracturing fluid in a gas field showed the enhancement of gas production over 100%. The fluid has 20% lower friction pressure than that of guar fluid. Hence, the new supramolecular viscoelastic surfactant gel is an effective fracturing fluid with less formation damage. Copyright © 2015 Society of Petroleum Engineers.
Number of references: 10
Main heading: Fracturing fluids
Controlled terms: Gas industry - Hydrogen bonds - Petroleum engineering - Van der Waals forces - Natural gas fields - Proppants - Surface active agents - High resolution transmission electron microscopy - Micelles - Supramolecular chemistry - Viscoelasticity

Uncontrolled terms: Angular frequencies - Associative polymers - Cryo-transmission electron microscopy - Dynamic rheological properties - Proppant suspension - Proppant transports - Supramolecular complexes - Viscoelastic surfactants
Classification code: 511.1 Oil Field Production Operations - 512.2.1 Natural Gas Fields - 522 Gas Fuels - 741.3 Optical Devices and Systems - 801.3 Colloid Chemistry - 801.4 Physical Chemistry - 803 Chemical Agents and Basic Industrial Chemicals - 931.2 Physical Properties of Gases, Liquids and Solids - 931.3 Atomic and Molecular Physics
Numerical data indexing: Angular_Velocity 1.00e-01rad/s, Percentage 1.00e+02%, Percentage 2.00e+01%, Percentage 5.00e+01%, Time 3.60e+03s
DOI: 10.2118/175762-ms
Funding Details: Number: 51174163, Acronym: NSFC, Sponsor: National Natural Science Foundation of China; Number: 51304159, Acronym: NSFC, Sponsor: National Natural Science Foundation of China;
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

195. Profile Control Technology by Inorganic Salt Out under High-Temperature Conditions for Preventing Fire Flooding Gas Channeling

Accession number: 20153301177352
Authors: Haiyan, J. (1); Shibao, Y. (1); Ting, W. (2); Pengfei, M. (3); Li, J. (1); Kunmeng, L. (1); Hong, Z. (3)
Author affiliation: (1) Xi'An Shiyou University, Xi'an; 710065, China; (2) EnerTech-Drilling and Production Co., CNOOC, Tianjin, China; (3) China University of Petroleum, Qing Dao, China
Corresponding author: Li, J.(bareldini@163.com)
Source title: Petroleum Science and Technology
Abbreviated source title: Petrol Sci Technol
Volume: 33
Issue: 10
Issue date: May 19, 2015
Publication year: 2015
Pages: 1157-1164
Language: English
ISSN: 10916466
E-ISSN: 15322459
CODEN: PSTEFV
Document type: Journal article (JA)
Publisher: Bellwether Publishing, Ltd.
Abstract: In the process of heavy oil fire flooding, gas channeling occurs easily, due to the geological factors, to guarantee good thermal communication. As a result of the heat not being fully utilized, the heavy oil fireflood exploitation is far from the desired effect. According to the gas channeling phenomenon, the plugging method of inorganic plugging agent by salting out was carried out. Inorganic salt plugging agents suitable for higher than 400°C of fire flooding profile modification were found out by screening in the existing chemical products. By laboratory salting experiment of the selected plugging agents NaCl and Na2SiO3, the result indicated that plugging ratio of plugging agent NaCl could achieve 60%, while the Na2SiO3 could achieve 80%. Glycol was used as a component of inducer in displacement fluid, because of its high ignition point, high flash point, and adequate supply. © 2015 Taylor & Francis Group, LLC.
Number of references: 11
Main heading: Crude oil
Controlled terms: Chemical modification - Fires - Oil well flooding - Silicon compounds - Floods - Heavy oil production - Sodium chloride
Uncontrolled terms: Chemical products - Geological factors - High temperature - High temperature condition - Profile control - Profile control technology - Profile modification - Salting out
Classification code: 511.1 Oil Field Production Operations - 512.1 Petroleum Deposits - 914.2 Fires and Fire Protection
Numerical data indexing: Percentage 6.00e+01%, Percentage 8.00e+01%, Temperature 6.73e+02K
DOI: 10.1080/10916466.2015.1057594
Funding Details: Number: 51404199, Acronym: NSFC, Sponsor: National Natural Science Foundation of China; Number: 2013JK0860, Acronym: -, Sponsor: Scientific Research Plan Projects of Shaanxi Education Department;
Funding text: Thanks for the Project supported by the National Natural Science Foundation of China (No. 51404199), and Scientific research plan projects of ShaanXi Education Department (No.2013JK0860).

Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

196. Sonic transmission research of geosteering drilling tools

Accession number: 20161602266128
Authors: Xie, Xicao (1, 2); Sun, Chao (1)
Author affiliation: (1) Institute of Acoustic Engineering, Northwestern Polytechnical University, Xi'an; 7I 0072, China; (2) College of Electronic Engineering, Xi'An Shiyou University, Xi'an; 710065, China
Source title: Proceedings of 2015 International Conference on Estimation, Detection and Information Fusion, ICEDIF 2015
Abbreviated source title: Proc. Int. Conf. Estim., Detect. Inf. Fusion, ICEDIF
Part number: 1of1
Issue title: Proceedings of 2015 International Conference on Estimation, Detection and Information Fusion, ICEDIF 2015
Issue date: September 28, 2015
Publication year: 2015
Pages: 363-366
Article number: 7280224
Language: English
ISBN-13: 9781479964178
Document type: Conference article (CA)
Conference name: International Conference on Estimation, Detection and Information Fusion, ICEDIF 2015
Conference date: January 10, 2015 - January 11, 2015
Conference location: Harbin, China
Conference code: 118253
Publisher: Institute of Electrical and Electronics Engineers Inc., United States
Abstract: In geosteering drilling technology, the transmission of information measured by near-bit sensor has always been a problem. Downhole drilling tool is a very complex medium for sonic transmission. This paper takes geosteering drilling tool as the study object, and puts forward a method of short distance transmission, which is based on sonic wave transmission theory. The experiment testing the drilling pipes sonic transmission characteristics in the laboratory is done. This paper analyzes the sensitivity of sonic wave to some parameters when it acts as carrier. These parameters include the position of the excitation signal, the frequency of the excitation signal, the amplitude of the excitation signal and the position of the response signal. The strength of the propagated sonic signal would be weakened or strengthened because of reflection wave and multipath, but the data transmission is feasible by sonic wave underground short distance. © 2015 IEEE.
Number of references: 13
Uncontrolled terms: Down-hole drilling - Drilling technology - Drilling tool - Excitation signals - Experiment testing - Short-distance transmission - Transmission characteristics - Transmission theories
Classification code: 511.1 Oil Field Production Operations - 903.1 Information Sources and Analysis
DOI: 10.1109/ICEDIF.2015.7280224
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

197. Robust watermarking utilizing adaptive order dither block truncation coding

Accession number: 20153001050223
Authors: Xie, Kun (1); Zeng, Ping (1, 2); Zheng, Haihong (1); Guo, Tao (1)
Author affiliation: (1) School of Computer Science and Technology, Xidian Univ., Xi'an; 710071, China; (2) College of Computer Science, Xi'an Shiyou Univ., Xi'an; 710065, China
Source title: Xi'an Dianzi Keji Daxue Xuebao/Journal of Xidian University
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Publication year: 2015
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ISSN: 10012400
CODEN: XDKXEP
Document type: Journal article (JA)
Publisher: Science Press
Abstract: To overcome the shortcomings of bad image quality or poor robustness of the current methods, a robust watermarking method based on adaptive order dither block truncation coding is proposed. Firstly, the image is adaptively divided into smooth regions, texture regions and edge regions using a quadtree segmentation, according to the information entropy and the variance. After that, these blocks are coded separately. Secondly, we exploit the bit plane obtained from adaptive order dither block truncation coding, and embed the watermark by changing the parity sum of the pixels within a window in the bit plane. Lastly, the watermark is retrieved with the parity sum and the majority voting strategy, not referring to the original image. The experimental results indicate that compared with the similar algorithm, the proposed method can achieve good image quality with a low compression rate, a high watermark rate and watermark rate flexibility. Moreover, it is robust to common attacks, especially to Salt & Pepper noising, brightness adjustment, contrast adjustment, rotating and cropping attacks. ©, 2015, Science Press. All right reserved.
Number of references: 12
Main heading: Image quality
Controlled terms: Image segmentation - Image coding - Image compression - Image watermarking - Codes (symbols)
Uncontrolled terms: Block truncation coding - Brightness adjustments - Contrast adjustment - Information entropy - Order dither - Quadtree segmentation - Robust watermarking - Voting strategies
Classification code: 723.2 Data Processing and Image Processing
DOI: 10.3969/j.issn.1001-2400.2015.03.033
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

198. Simultaneous Low-Cost Carbon Sources and CO2 Valorizations through Catalytic Gasification

Accession number: 20154801608947
Authors: He, Peng (1); Xiao, Ye (1); Tang, Ying (1, 2); Zhang, Jie (2); Song, Hua (1)
Author affiliation: (1) Department of Chemical and Petroleum Engineering, University of Calgary, 2500 University Drive NW, Calgary; AB; T2N 1N4, Canada; (2) College of Chemistry and Chemical Engineering, Xian Shiyou University, Xian, Shaanxi; 710065, China
Corresponding author: Song, Hua(sonh@ucalgary.ca)
Source title: Energy and Fuels
Abbreviated source title: Energy Fuels
Volume: 29
Issue: 11
Issue date: November 19, 2015
Publication year: 2015
Pages: 7497-7507
Language: English
ISSN: 08870624
E-ISSN: 15205029
CODEN: ENFUEM
Document type: Journal article (JA)
Publisher: American Chemical Society
Abstract: The inherent CO2 gasification reactivities of chars derived from a series of plentiful carbon sources, including petroleum coke (petcoke), coal with various ranks, biomass, and even municipal solid wastes, have been systematically investigated in this work. Among these, switchgrass char exhibits the best activity, while petcoke char behaves the worst toward CO production. The results from sample characterizations indicate that the inherent char reactivity during CO2 gasification is closely related to its physical properties such as the alkali metal and oxygen contents as well as the H/C atomic ratio. In addition, the effect of the reaction conditions (i.e., temperature, pressure, space velocity, particle size of char, and CO and CO2 concentrations in the gas feedstock) on char CO2 gasification has also been explored. Moreover, a set of supported catalysts have been developed to further promote the char reactivity toward CO2 gasification at moderate temperature, among which K-Ca/ZnO-CeO2 ranks at the top in terms of CO2 conversion and CO production and demonstrates excellent stability during a long-term cumulative run. Through

careful analyses of the collected catalyst characterization results, a novel catalyst design composed of two redox metal/metal oxide pairs supported on an oxygen ion conductor, based on the reported K-Ca/ZnO-CeO2 system, has been proposed for future catalyst development with even better CO2 gasification performance for fluidized bed applications with much easier catalyst recovery and thus minimized catalyst loss. © 2015 American Chemical Society.
Number of references: 47
Main heading: Carbon dioxide
Controlled terms: Catalyst supports - Metal recovery - Gasification - Calcium compounds - Particle size - Fluidized beds - Municipal solid waste - Oxygen - Carbon
Uncontrolled terms: Catalyst characterization - Catalyst recovery - Catalytic gasification - CO2 concentration - Moderate temperature - Oxygen-ion conductor - Reaction conditions - Space velocities
Classification code: 452 Municipal and Industrial Wastes; Waste Treatment and Disposal - 802.3 Chemical Operations - 803 Chemical Agents and Basic Industrial Chemicals - 804 Chemical Products Generally - 804.2 Inorganic Compounds
DOI: 10.1021/acs.energyfuels.5b01712
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

199. Adaptive sample-size unscented particle filter based on likelihood distribution

Accession number: 20155001667199
Authors: Gao, Yi (1); Gao, Ya (2); Gao, She-Sheng (3)
Author affiliation: (1) School of Electronic Engineering, Xian ShiYou University, Xi'an; 710065, China; (2) School of Electronic Information Engineering, Xian Technological University, Xi'an; 710021, China; (3) Department of Automatics Control, Northwestern Polytechnical University, Xi'an; 710072, China
Source title: Zhongguo Guanxing Jishu Xuebao/Journal of Chinese Inertial Technology
Abbreviated source title: Zhongguo Guanxing Jishu Xuebao
Volume: 23
Issue: 5
Issue date: October 1, 2015
Publication year: 2015
Pages: 648-652
Language: Chinese
ISSN: 10056734
Document type: Journal article (JA)
Publisher: Editorial Department of Journal of Chinese Inertial Technology
Abstract: Aiming at the poor real-time performance of particle filtering and the computation amount's exponentially increasing with particle numbers, this paper presents an adaptive sample size UPF (unscented particle filtering) algorithm, which takes the advantages of the adaptivities of likelihood distribution and sample number. In the state variance estimation, the lower limit of sample is set at each step, and the cases when state variance is too large or too small are taken into account. In the resampling phase, the likelihood samples are embedded, and the likelihood distribution state is adaptively adjusted based on the precision factor α which can reflect the real-time statistical performance of observational noises to increase the overlapping area of the prior and the likelihood and reduce particle degeneration. In addition, the method uses the unscented transformation to obtain the importance density function of each particle, and introduces the latest observational information to the importance density function and resample, thus effectively improves the estimation performance. By applying the proposed algorithm to the SINS/SAR integrated navigation system, the simulation results and their analysis demonstrate that, compared with the PF and UPF algorithms, the proposed algorithm can effectively improve filter performance and calculation precision. © 2015, Editorial Department of Journal of Chinese Inertial Technology. All right reserved.
Number of references: 10
Main heading: Adaptive filters
Controlled terms: Bandpass filters - Navigation systems - Air navigation - Adaptive filtering - Monte Carlo methods
Uncontrolled terms: Importance density function - Integrated navigation - Likelihood distribution - Particle degenerations - Sample number - Statistical performance - Unscented particle filters - Unscented transformations
Classification code: 431.5 Air Navigation and Traffic Control - 703.2 Electric Filters - 922.2 Mathematical Statistics
DOI: 10.13695/j.cnki.12-1222/o3.2015.05.016
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

200. Multispectral image compression algorithms for color reproduction

Accession number: 20150500468718
Authors: Liang, Wei (1); Zeng, Ping (1, 2); Luo, Xue-Mei (1); Wang, Yi-Feng (1); Xie, Kun (1)
Author affiliation: (1) School of Computer Science and Technology, Xidian University, Xi'an; 710071, China; (2) School of Computer Science, Xi'an Shiyou University, Xi'an; 710065, China
Corresponding author: Zeng, Ping(zengp@xsyu.edu.cn)
Source title: Guang Pu Xue Yu Guang Pu Fen Xi/Spectroscopy and Spectral Analysis
Abbreviated source title: Guang Pu Xue Yu Guang Pu Fen Xi
Volume: 35
Issue: 1
Issue date: January 1, 2015
Publication year: 2015
Pages: 276-281
Language: Chinese
ISSN: 10000593
CODEN: GYGFED
Document type: Journal article (JA)
Publisher: Science Press
Abstract: In order to improve multispectral images compression efficiency and further facilitate their storage and transmission for the application of color reproduction and so on, in which fields high color accuracy is desired, WF serial methods is proposed, and APWS_RA algorithm is designed. Then the WF_APWS_RA algorithm, which has advantages of low complexity, good illuminant stability and supporting consistent color reproduction across devices, is presented. The conventional MSE based wavelet embedded coding principle is first studied. And then color perception distortion criterion and visual characteristic matrix W are proposed. Meanwhile, APWS_RA algorithm is formed by optimizing the rate allocation strategy of APWS. Finally, combined above technologies, a new coding method named WF_APWS_RA is designed. Colorimetric error criterion is used in the algorithm and APWS_RA is applied on visual weighted multispectral image. In WF_APWS_RA, affinity propagation clustering is utilized to exploit spectral correlation of weighted image. Then two-dimensional wavelet transform is used to remove the spatial redundancy. Subsequently, error compensation mechanism and rate pre-allocation are combined to accomplish the embedded wavelet coding. Experimental results show that at the same bit rate, compared with classical coding algorithms, WF serial algorithms have better performance on color retention. APWS_RA preserves least spectral error and WF_APWS_RA algorithm has obvious superiority on color accuracy. ©, 2015, Science Press. All right reserved.
Number of references: 11
Main heading: Error compensation
Controlled terms: Color - Image coding - Wavelet transforms - Color vision - Image enhancement - Codes (symbols) - Colorimetry - Image compression - Color image processing
Uncontrolled terms: Affinity propagation clustering - Characteristic matrices - Color perception - Color reproduction - Compensation mechanism - Embedded wavelet coding - Multispectral-image compression - Wavelet coding
Classification code: 723.2 Data Processing and Image Processing - 741.1 Light/Optics - 741.2 Vision - 921.3 Mathematical Transformations - 941.4 Optical Variables Measurements
DOI: 10.3964/j.issn.1000-0593(2015)01-0276-06
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

201. Atomic simulations of deformation mechanisms of crystalline Mg/amorphous Mg-Al nanocomposites

Accession number: 20202208734927
Authors: Song, H.Y. (1); Li, Y.L. (2)
Author affiliation: (1) College of Material Science and Engineering, Xi'an Shiyou University, Xi'an; 710065, China; (2) School of Aeronautics, Northwestern Polytechnical University, Xi'an; 710072, China
Corresponding author: Song, H.Y.(gsfshy@sohu.com)
Source title: Physics Letters, Section A: General, Atomic and Solid State Physics
Abbreviated source title: Phys Lett Sect A Gen At Solid State Phys
Volume: 379

Issue: 36
Issue date: July 14, 2015
Publication year: 2015
Pages: 2087-2091
Article number: 23288
Language: English
ISSN: 03759601
CODEN: PYLAAG
Document type: Journal article (JA)
Publisher: Elsevier B.V., Netherlands
Abstract: Abstract The effects of amorphous boundary (AB) spacing on the deformation behavior of crystalline/amorphous (C/A) Mg/MgAl nanocomposites under tensile load are investigated using molecular dynamics method. The results show that the plasticity of nano-polycrystal Mg can be enhanced with the introduction of C/A interfaces. For samples 5.2 nm in AB spacing and larger, the superior tensile ductility and nearly perfect plastic flow behavior occur during plastic deformation. The studies indicate that the cooperative interactions between crystalline and amorphous are the main reason for excellent ductility enhancements in C/A Mg/MgAl nanocomposites. © 2015 Elsevier B.V.
Number of references: 44
Main heading: Molecular dynamics
Controlled terms: Aluminum alloys - Ductility - Crystalline materials - Binary alloys - Magnesium alloys - Nanocomposites
Uncontrolled terms: Atomic simulations - Cooperative interactions - Deformation behavior - Deformation mechanism - Ductility enhancement - Molecular dynamics methods - Molecular dynamics simulations - Tensile ductility
Classification code: 541.2 Aluminum Alloys - 542.2 Magnesium and Alloys - 549.2 Alkaline Earth Metals - 761 Nanotechnology - 801.4 Physical Chemistry - 933 Solid State Physics - 933.1 Crystalline Solids - 951 Materials Science
Numerical data indexing: Size 5.20e-09m
DOI: 10.1016/j.physleta.2015.06.038
Funding Details: Number: 11372256, Acronym: NSFC, Sponsor: National Natural Science Foundation of China;
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

202. Fusion estimation algorithm with uncertain noises and its application in navigation system (*Open Access*)

Accession number: 20150600504798
Authors: Ren, Zhiping (1); Wang, Huili (2)
Author affiliation: (1) School of Electronic Engineering, Xi'An Shiyou University, Xi'an, Shaanxi; 710065, China; (2) School of Automation, Northwestern Polytechnical University, Xi'an, Shaanxi; 710072, China
Corresponding author: Ren, Zhiping(renzp@xsyu.edu.cn)
Source title: Mathematical Problems in Engineering
Abbreviated source title: Math. Probl. Eng.
Volume: 2015
Issue date: January 22, 2015
Publication year: 2015
Article number: 218561
Language: English
ISSN: 1024123X
E-ISSN: 15635147
Document type: Journal article (JA)
Publisher: Hindawi Limited, 410 Park Avenue, 15th Floor, 287 pmb, New York, NY 10022, United States
Abstract: In order to solve the problem of uncertain noise during the measurement of actual system, an extended Kalman filter fusion estimation method based on multisensor fusion algorithm with uncertain effects is proposed. Then the equivalent measurement and the corresponding error matrix are estimated by the proposed uncertain fusing algorithm. Submit the results into the system model for filter processing and the optimal estimation can be obtained by the filtering method. Finally, the algorithm is verified in the GPS/INS navigation system which shows that the fusion result with uncertainty effect is much better than then fusion result with independent noise due to the consideration of

correlated noise and uncertain effects for the actual system. This is also validates the effectiveness and practicality of the proposed algorithm. © 2015 Zhiping Ren and Huili Wang.
Number of references: 19
Main heading: Kalman filters
Controlled terms: Navigation systems
Uncontrolled terms: Equivalent measurement - Filter processing - Fusion estimation algorithms - GPS/INS navigations - Independent noise - Multisensor fusion algorithm - Optimal estimations - Uncertainty effects
Classification code: 434.4 Waterway Navigation - 723 Computer Software, Data Handling and Applications - 921 Mathematics
DOI: 10.1155/2015/218561
Funding Details: Number: 50974103, Acronym: -, Sponsor: -;
Compendex references: YES
Open Access type(s): All Open Access, Gold, Green
Database: Compendex
Data Provider: Engineering Village

203. Tri-component reaction for biodiesel production catalyzed by modified CaO

Accession number: 20160201793753
Authors: Tang, Ying (1); Shen, Bo (1); Wang, Shanshan (1); Zhou, Rui (1); Zhang, Jie (1); He, Mingyuan (2)
Author affiliation: (1) College of Chemistry and Chemical Engineering, Xi'an Shiyou University, Xi'an; 710065, China; (2) Research Institute of Petroleum Processing, SINOPEC, Beijing; 100083, China
Corresponding author: Tang, Ying(tangying78@xsyu.edu.cn)
Source title: Shiyou Xuebao, Shiyou Jiagong/Acta Petrolei Sinica (Petroleum Processing Section)
Abbreviated source title: Shiyou Xuebao Shiyou Jiagong
Volume: 31
Issue: 6
Issue date: December 25, 2015
Publication year: 2015
Pages: 1301-1308
Language: Chinese
ISSN: 10018719
CODEN: SXSHEY
Document type: Journal article (JA)
Publisher: Science Press
Abstract: A new method for simultaneous production of biodiesel and glycerol carbonate was established in a tri-component reaction system of rapeseed oil-dimethy carbonate-methanol. According to the reaction results, the highest biodiesel yield, 94.8% was obtained at the optimal reaction conditions of catalyst dosage 15% (the mass of oil), the molar ratio of rapeseed oil to dimethy carbonate to methanol of 1/1/8, reaction time 8h and reaction temperature 65. Based on the analysis of the polarity of the related compounds in this reaction, commercial CaO was modified with silane agent in a chemical way. It was found that the reaction time to reach the highest biodiesel yield under same react conditions was greatly shortened by 3 h catalyzed by 0.1% octadecyltrichlorosilane modified CaO, compared to unmodified CaO. Furthermore, the water resistance of the reaction system by using modified CaO as catalyst was greatly improved, and over 82% yield of biodiesel could be still obtained even 2% water contained in the reaction system with the main properties meeting the European standard, while only 37.2% biodiesel yield obtained by using commercial CaO as catalyst. The characterizations of FT-IR indicated that the modifier connected with CaO surface chemically.
Number of references: 15
Main heading: Surface treatment
Controlled terms: Oilseeds - Biodiesel - Catalysis - Catalysts - Vegetable oils - Lime - Carbonation - Chemical analysis - Surface reactions - Methanol
Uncontrolled terms: Biodiesel production - European Standards - Glycerol carbonate - Octadecyltrichlorosilane - Optimal reaction condition - Reaction temperature - Tri components - Water-resistances
Classification code: 523 Liquid Fuels - 802.2 Chemical Reactions - 803 Chemical Agents and Basic Industrial Chemicals - 804 Chemical Products Generally - 804.1 Organic Compounds - 804.2 Inorganic Compounds - 821.4 Agricultural Products
Numerical data indexing: Percentage 9.48e+01%, Time 1.08e+04s, Time 2.88e+04s, Percentage 1.00e-01%, Percentage 1.50e+01%, Percentage 2.00e+00%, Percentage 3.72e+01%, Percentage 8.20e+01%
DOI: 10.3969/j.issn.1001-8719.2015.06.008
Compendex references: YES

Database: Compendex
Data Provider: Engineering Village

204. Application on crude oil output forecasting based on TB-SCM algorithm

Accession number: 20160801976447
Authors: Hu, Hongtao (1); Zhang, Ruizhi (1); Guan, Xin (2)
Author affiliation: (1) School of Computer Science, Xi'An Shiyou University, Xi'an, Shaanxi, China; (2) Research Institute of Petroleum Exploration and Development-LangFang, Langfang, Hebei, China
Source title: ICEIEC 2015 - Proceedings of 2015 IEEE 5th International Conference on Electronics Information and Emergency Communication
Abbreviated source title: ICEIEC - Proc. IEEE Int. Conf. Electron. Inf. Emerg. Commun.
Part number: 1of1
Issue title: ICEIEC 2015 - Proceedings of 2015 IEEE 5th International Conference on Electronics Information and Emergency Communication
Issue date: September 29, 2015
Publication year: 2015
Pages: 398-401
Article number: 7284567
Language: English
ISBN-13: 9781479972838
Document type: Conference article (CA)
Conference name: 5th IEEE International Conference on Electronics Information and Emergency Communication, ICEIEC 2015
Conference date: May 14, 2015 - May 16, 2015
Conference location: Beijing, China
Conference code: 117890
Sponsor: IEEE Hong Kong Computational Intelligence Society
Publisher: Institute of Electrical and Electronics Engineers Inc., United States
Abstract: Factors that affect crude oil output are multifarious and non-linear, so it is very difficult to analyze and predict the crude oil output solely based on mathematical methods. This paper presents a new method that applies TB-SCM algorithm to predict crude oil output. Firstly, the monthly production data of the past years from a sample oil plant is preprocessed by the K-means algorithm, and the transaction dataset is obtained. Next, based on the TB-SCM algorithm, the strong association rules about crude oil output are generated with the given minimum support threshold and minimum confidence threshold. Lastly, these strong association rules can help us to forecast crude oil output in the coming months for oil production plant. Comparing with the actual value of crude oil output, the result shows that the prediction method is of high operational efficiency, simple and accurate. © 2015 IEEE.
Number of references: 11
Main heading: Forecasting
Controlled terms: Association rules - Crude oil
Uncontrolled terms: Mathematical method - Minimum confidence thresholds - Minimum support thresholds - Oil output - Oil production - Operational efficiencies - Prediction methods - Production data
Classification code: 512.1 Petroleum Deposits - 903.1 Information Sources and Analysis
DOI: 10.1109/ICEIEC.2015.7284567
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

205. Application of the unstructured grids in the numerical simulation of fractured horizontal wells in ultra-low permeability gas reservoirs

Accession number: 20150300434846
Authors: Chen, Jiaoni (1); Li, Tiantai (2); Zhang, Yi (2)
Author affiliation: (1) College of Petroleum Engineering, China University of Petroleum, Beijing; 102249, China; (2) College of Petroleum Engineering, Xi'an ShiYou University, Xi'an; 710065, China
Corresponding author: Chen, Jiaoni
Source title: Journal of Natural Gas Science and Engineering
Abbreviated source title: J. Nat. Gas Sci. Eng.
Volume: 22

Issue date: January 01, 2015
Publication year: 2015
Pages: 580-590
Language: English
ISSN: 18755100
Document type: Journal article (JA)
Publisher: Elsevier B.V., Netherlands
Abstract: Given the impermeable lithological boundary problem of the Sulige Gas Field in China, this study validates the dynamic characteristics of this reservoir through a radial model of the vertical well and proposes an unstructured grid refinement technology using a perpendicular bisector, while considering the horizontal well fracturing model. The vertical fractures and impermeable lithological boundary around the horizontal well can be accurately simulated using the unstructured grid refinement technology. This study also investigates the influence of stress sensitivity on the development indices of an ultra-low permeability gas reservoir. Results show that an impermeable lithological boundary in a horizontal well can effectively decrease the production rate of the working system of intermittent open wells. For ultra-low permeability gas reservoir with different stress sensitivities, important aspects, such as stabilization period, economic benefits, and ultimate recovery, should be considered in the early production allocation of gas wells. © 2015 Elsevier B.V.
Number of references: 17
Main heading: Horizontal wells
Controlled terms: Lithology - Natural gas fields - Gases - Numerical models - Petroleum reservoir engineering - Gas industry - Gas permeability - Low permeability reservoirs
Uncontrolled terms: Dynamic characteristics - Fractured horizontal wells - Horizontal well fracturing - Impermeable lithological boundary - Production allocation - Stress sensitivity - Ultra low permeability - Unstructured grid
Classification code: 481.1 Geology - 512.1 Petroleum Deposits - 512.1.1 Oil Fields - 512.1.2 Petroleum Deposits : Development Operations - 512.2.1 Natural Gas Fields - 522 Gas Fuels - 921 Mathematics - 931.2 Physical Properties of Gases, Liquids and Solids
DOI: 10.1016/j.jngse.2015.01.003
Funding Details: Number: 2012K08-07, Acronym: -, Sponsor: -; Number: U1262201, Acronym: NSFC, Sponsor: National Natural Science Foundation of China; Number: 12JK0807, Acronym: -, Sponsor: Scientific Research Plan Projects of Shaanxi Education Department;
Funding text: The National Natural Science Foundation of China (U1262201), Industrial Research Plan in Shaanxi Province (2012K08-07), and Special Scientific Research Plan in Shaanxi Province Department of Education (12JK0807) provided support for this work.
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

206. Multispectral image compression algorithm based on composite transform

Accession number: 20153501211701
Authors: Liang, Wei (1); Zeng, Ping (1, 2); Zheng, Haihong (1); Luo, Xuemei (1)
Author affiliation: (1) School of Computer Science and Technology, Xidian Univ., Xi'an; 710071, China; (2) School of Computer Science, Xi'an Shiyou Univ., Xi'an; 710065, China
Source title: Xi'an Dianzi Keji Daxue Xuebao/Journal of Xidian University
Abbreviated source title: Xi'an Dianzi Keji Daxue Xuebao
Volume: 42
Issue: 4
Issue date: August 1, 2015
Publication year: 2015
Pages: 33-40
Language: Chinese
ISSN: 10012400
CODEN: XDKXEP
Document type: Journal article (JA)
Publisher: Science Press
Abstract: Aiming at the problems of inadequate reducing of spatial and spectral redundancy and weak adaptability of existing multispectral image compression algorithms, the multispectral images' spatial sparse equivalent representation and its clustering implementation named the OptimalLeaders are proposed. Furthermore, an adaptive multispectral image compression algorithm-OLPKWS is designed, which is based on composite transform. In the OLPKWS,

multispectral data are transformed into representation and residual by the presented spatial sparse equivalent transform, which removes spatial redundancy adaptively. Moreover, an error compensation mechanism is introduced in order to improve the quality of the reconstruction image. Principal Component Analysis (PCA) is used to remove spectral redundancy for representation. However, to predict differences, KLT is utilized to explore spectral correlation, two-dimensional wavelet transform is used to remove spatial redundancy, standard deviation weighted rate allocation and SPIHT are combined to complete the coding. Experimental results show that, in comparison to the clustering, SPIHT and KLT-SPIHT-TCIRA algorithms, the proposed approach achieves a higher peak signal to noise ratio (PSNR) under the same compression ratio.
Number of references: 14
Main heading: Principal component analysis
Controlled terms: Error compensation - Image coding - Wavelet transforms - Image compression - Redundancy - Clustering algorithms - Image enhancement - Signal to noise ratio
Uncontrolled terms: Clustering - Multispectral-image compression - Rate allocation - Spatial sparse equivalent representation - Wavelet coding
Classification code: 716.1 Information Theory and Signal Processing - 903.1 Information Sources and Analysis - 921.3 Mathematical Transformations - 922.2 Mathematical Statistics
DOI: 10.3969/j.issn.1001-2400.2015.04.006
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

207. Effect of amorphous lamella on the crack propagation behavior of crystalline Mg/amorphous Mg-Al nanocomposites

Accession number: 20160701939925
Authors: Song, Hai-Yang (1); Li, Yu-Long (2)
Author affiliation: (1) College of Materials Science and Engineering, Xi'An Shiyou University, Xi'an; 710065, China; (2) School of Aeronautics, Northwestern Polytechnical University, Xi'an; 710072, China
Corresponding author: Song, Hai-Yang(gsfshy@sohu.com)
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Abbreviated source title: Chin. Phys.
Volume: 25
Issue: 2
Issue date: December 20, 2015
Publication year: 2015
Article number: 026802
Language: English
ISSN: 16741056
E-ISSN: 20583834
Document type: Journal article (JA)
Publisher: IOP Publishing Ltd
Abstract: The effects of amorphous lamella on the crack propagation behavior in crystalline/amorphous (C/A) Mg/Mg-Al nanocomposites under tensile loading are investigated using the molecular dynamics simulation method. The sample with an initial crack of orientation [0001] is considered here. For the nano-monocrystal Mg, the crack growth exhibits brittle cleavage. However, for the C/A Mg/Mg-Al nanocomposites, the 'double hump' behavior can be observed in all the stress-strain curves regardless of the amorphous lamella thickness. The results indicate that the amorphous lamella plays a critical role in the crack deformation, and it can effectively resist the crack propagation. The above mentioned crack deformation behaviors are also disclosed and analyzed in the present work. The results here provide a strategy for designing the high-performance hexagonal-close-packed metal and alloy materials.
Number of references: 35
Main heading: Molecular dynamics
Controlled terms: Aluminum alloys - Nanocomposites - Binary alloys - Magnesium alloys - Crystalline materials - Stress-strain curves - Crack propagation - Deformation
Uncontrolled terms: Brittle cleavage - Crack deformation - Crack propagation behavior - Deformation behavior - Hexagonal close packed - Metal and alloys - Molecular dynamics simulation methods - Molecular dynamics simulations

Classification code: 541.2 Aluminum Alloys - 542.2 Magnesium and Alloys - 549.2 Alkaline Earth Metals - 761 Nanotechnology - 801.4 Physical Chemistry - 933 Solid State Physics - 933.1 Crystalline Solids - 951 Materials Science
DOI: 10.1088/1674-1056/25/2/026802
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

208. Quantitative classification and characteristics difference of diagenetic facies in Shan 2 sandstone of Shenmu Gasfield, Ordos Basin

Accession number: 20153301178122
Authors: Gao, Hui (1); Wang, Ya-Nan (1); Fan, Zhi-Qiang (2); Wen, Kai-Feng (2); Li, Tian-Tai (1)
Author affiliation: (1) College of Petroleum Engineering, Xi'an Shiyou University, Xi'an, China; (2) No. 2 Gas Production Plant of Changqing Oilfield Company, PetroChina, Yulin, China
Source title: Natural Gas Geoscience
Abbreviated source title: Nat. Gas Geosci.
Volume: 26
Issue: 6
Issue date: June 10, 2015
Publication year: 2015
Pages: 1057-1067
Language: Chinese
ISSN: 16721926
Document type: Journal article (JA)
Publisher: Science Press
Abstract: In order to probe the quantitative classification method of diagenetic facies, logging data and test results have been used to establish classification standard and state characteristics of diagenetic facies according to diagenesis and logging parameters taking Shan 2 sandstone of Shenmu Gasfield in Ordos Basin as an example. The lithology is lithic quartz sandstone, lithic sandstone and quartz sandstone. It develops lithic dissolved pore, inter-crystalline pore, inter-granular dissolved pore, mixed solution pores and inter-granular pore. Shan 2 sandstone experienced compaction pressure-solution, cementation and dissolution with medium to strong compaction rate, medium cementation rate, moderate to strong dissolution rate, respectively. Five types of diagenetic facies can be classified according to the diagenesis quantitative parameters and diagenetic facies can be effectively distinguished based on natural gamma ray, deep lateral resistivity, acoustic and density logging. The moderate compaction, illite cementation, intergranular pore and dissolution pore facies distributing in the middle of distributary channel sand body is the most favorable diagenetic facies because of the highest pore development degree, the best properties, the widest distribution of pore throat and high content of large pore throat, followed by moderate compaction, illite and kaolinite cementation, dissolution pore and intergranular pore facies. ©, 2015, Science Press. All right reserved.
Number of references: 23
Main heading: Sandstone
Controlled terms: Gamma rays - Dissolution - Metamorphic rocks - Lithology - Sedimentology - Compaction - Kaolinite - Cementing (shafts) - Quartz
Uncontrolled terms: Classification standard - Diagenesis - Diagenetic facies - Distributary channels - Quantitative classifications - Quantitative parameters - Shenmu Gasfield - State characteristics
Classification code: 481.1 Geology - 482.2 Minerals - 802.3 Chemical Operations - 931.3 Atomic and Molecular Physics - 932.1 High Energy Physics
DOI: 10.11764/j.issn.1672-1926.2015.06.1057
Database: Compendex
Data Provider: Engineering Village

209. NMR technology based hydration damage evolution of hard brittle shale

Accession number: 20151700776750
Authors: Wang, Ping (1, 2); Qu, Zhan (1, 2)
Author affiliation: (1) School of Aeronautics, Northwestern Polytechnical University, Xi'an; Shaanxi; 710072, China; (2) School of Mechanical Engineering, Xi'an Shiyou University, Xi'an; Shaanxi; 710065, China
Corresponding author: Wang, Ping(wp8230@xsyu.edu.cn)
Source title: Yantu Lixue/Rock and Soil Mechanics

Abbreviated source title: Rock Soil Mech
Volume: 36
Issue: 3
Issue date: March 10, 2015
Publication year: 2015
Pages: 687-693
Language: Chinese
ISSN: 10007598
Document type: Journal article (JA)
Publisher: Academia Sinica
Abstract: This paper studies the meso-damage evolution of the structure of the brittle shale after hydration. Hard brittle shale samples at different soaking times are measured with the nuclear magnetic resonance (NMR) technique. The quality of the sample, transverse relaxation time T2 spectrum distribution and nuclear magnetic resonance imaging of the hard brittle shale samples at different soaking times are obtained. The results show that hydration can produce damage inside the rock. The water absorption of the samples changes a lot in the first eight hours and shows no obvious change after one day. The microcrack propagates rapidly and the surface cracks are formed as the soaking time increases. NMR image shows that the internal microstructure of the sample redistributes under hydration effect. T2 signal amplitude curve changes significantly as the soaking time increases. The hydration damage process is divided into three stages: the development stage of the large size pore cracks, the formation of the small pores and the propagation of the large size pore cracks, the propagation of the small size pores and the formation of the large size pore through cracks. NMR image shows the internal microstructure of the same sample at different soaking times. The hydration damage process of rocks is shown dynamically.
Number of references: 13
Main heading: Hydration
Controlled terms: Surface defects - Cracks - Relaxation time - Water absorption - Magnetic resonance imaging - Magnetism - Nuclear magnetic resonance - Microstructure
Uncontrolled terms: Damage evolution - Development stages - Hydration effects - Internal microstructure - Nuclear magnetic resonance techniques - Nuclear magnetic resonance(NMR) - Technology-based - Transverse relaxation time
Classification code: 701.2 Magnetism: Basic Concepts and Phenomena - 746 Imaging Techniques - 802.3 Chemical Operations - 931 Classical Physics; Quantum Theory; Relativity - 951 Materials Science
DOI: 10.16285/j.rsm.2015.03.012
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

210. Luminescence, magnetocaloric effect and single-molecule magnet behavior in lanthanide complexes based on a tridentate ligand derived from 8-hydroxyquinoline

Accession number: 20154501519869
Authors: Shen, Hai-Yun (1); Wang, Wen-Min (1); Bi, Yan-Xia (1); Gao, Hong-Ling (1); Liu, Shuang (2); Cui, Jian-Zhong (1)
Author affiliation: (1) Department of Chemistry, Tianjin University, Tianjin; 300072, China; (2) School of Chemistry and Chemical Engineering, Xi'An Shiyou University, Xi'an Shaanxi Province; 710065, China
Corresponding author: Cui, Jian-Zhong(cuijianzhong@tju.edu.cn)
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Abstract: A new family of lanthanide complexes, [Ln2(hfac)4L2] (Ln = Eu (1), Gd (2), Tb (3), Dy (4), Ho (5), Er (6), Lu (7); hfac = hexafluoroacetylacetonate, HL = 2-(2′-benzothiazole)-8-hydroxyquinoline), was synthesized and characterized using single-crystal X-ray diffraction, elemental analysis (EA), thermal gravimetric analysis (TGA), powder X-ray diffraction (PXRD) and UV-vis spectra. X-ray crystallographic analyses reveal that 1-7 are isomorphous and crystallize in the monoclinic space group C2/c. In these dinuclear complexes, each LnCyrillic capital letter sha ion is eight-coordinated with two bidentate hfac and two μ-phenol bridging L ligands. The TGA results show that the complexes have relatively high thermal stabilities. Complexes 1 and 3 show the characteristic transitions of the corresponding lanthanide ions with ligand-related emission peaks. Meanwhile, complexes 4 and 7 exhibit ligand-centered fluorescence at room temperature. Magnetic measurements were carried out on complexes 2-6. The magnetic study reveals that 2 displays a magnetocaloric effect, with a maximum -#Sm value of 16.89 J K-1 kg-1 at 2 K for #H = 8 T. Dynamic magnetic studies reveal single-molecule magnet (SMM) behavior for complex 4. Fitting the dynamic magnetic data to the Arrhenius law gives an energy barrier #E/kB = 50.33 K and pre-exponential factor τ_0 = 1.05 × 10-8 s. © The Royal Society of Chemistry 2015.
Number of references: 73
Main heading: Ligands
Controlled terms: Molecules - X ray diffraction - Magnets - Synthesis (chemical) - Thermogravimetric analysis - Indium compounds - X ray crystallography - Magnetocaloric effects - Rare earth elements - Single crystals
Uncontrolled terms: High thermal stability - Monoclinic space groups - Powder X-ray diffraction (pXRD) - Preexponential factor - Single crystal x-ray diffraction - Single-molecule magnet - Thermal gravimetric analyses (TGA) - X-ray crystallographic analysis
Classification code: 547.2 Rare Earth Metals - 701.2 Magnetism: Basic Concepts and Phenomena - 801 Chemistry - 801.4 Physical Chemistry - 802.2 Chemical Reactions - 931.3 Atomic and Molecular Physics - 933.1 Crystalline Solids - 933.1.1 Crystal Lattice
Numerical data indexing: Magnetic_Flux_Density 8.00e+00T, Temperature 2.00e+00K, Temperature 5.03e+01K
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Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

211. Structural characteristics and main controlling factors of inversion structures in Xihu Depression in Donghai Basin

Accession number: 20152300924971
Authors: Guo, Zhen (1); Liu, Chiyang (1); Tian, Jianfeng (2)
Author affiliation: (1) Northwest University, Department of Geology, Northwest University, Xi'an; 710069, China; (2) Department of Earth Science and Engineering, Xi'an Shiyou University, Xi'an; 710065, China
Corresponding author: Liu, Chiyang(lcy@nwu.edu.cn)
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Document type: Journal article (JA)
Publisher: Science Frontiers editorial department
Abstract: Through seismic section study and sedimentary-tectonic analyzing, based on the volume of uplift and associated fault, the inversion structures in the Xihu Depression of East China Sea shelf basin are divided into four types: wide fold, narrow fold, wide fold with reverse fault, and narrow fold with reverse fault. The inversion structures in the Xihu Depression are characterized by the zonation from east to west and the partition from south to north. The Central Uplift Belt has the strongest inversion structure, the East Marginal Belt is relatively gentle and the inversion in the West Marginal Belt is the weakest. The North Block comprises a lot narrow folds, while the Middle Block comprises strong inversion generally but weak in some places, The South Block have the opposite regulation to Middle Block. The inversion structures in the study area are mostly folds and supplemented with different degree of faults, so three parameters that are reverse displacement of inversion fault, amplitude of inversion fold and compression ratio in the Central Uplift Belt are chosen to quantitatively study the inversion characteristics in the Central Uplift Belt. The result shows that the inversion structure in the North Central Uplift Belt is strong, but limited; while the inversion structure in

the Middle Central Uplift Belt is very strong or weak; the South Central Uplift Belt comprises strong inversion in some places, but weak mostly. The inversion structures in the Xihu Depression were caused by Longjing tectonic movement in the middle-late Miocene. The inversion faults were evolved by the reversal reactivation of pre-existing normal fault; the reverse displacement generally reduced from bottom to the top. Inversion folds are more likely to develop on the top strata; it generally enhanced from bottom to the top. The subduction of Philippine Sea Plate to Asian Plate, caused Okinawa Trough to open, which caused the west boundary of Okinawa Trough to be pushed toward west. This push made the inversion structures in the Xihu Depression formed.
Number of references: 8
Main heading: Plates (structural components)
Controlled terms: Compression ratio (machinery) - Fault slips
Uncontrolled terms: Dynamic background - Inversion parameters - Inversion structures - Tectonic analysis - Xihu depression
Classification code: 408.2 Structural Members and Shapes - 484.1 Earthquake Measurements and Analysis
DOI: 10.13745/j.esf.2015.03.005
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

212. Research on armored target radiation characteristics with passive millimeter wave detection based on multiple reflection

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Authors: Feng, Jianli (1, 2); Zhang, Xiaomin (1)
Author affiliation: (1) College of Marine Science and Technology, Northwestern Polytechnical University, Xi'an; 710072, China; (2) School of Computer Science, Xi'an Shiyou University, Xi'an; 710065, China
Corresponding author: Feng, Jianli
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Publisher: Northwestern Polytechnical University
Abstract: In the past, the multiple reflection between armored target panels was ignored in the research of armored target radiation characteristics detection with passive millimeter wave. Therefore, we established the armored target radiation characteristics model with multiple reflection. Using ray tracing method, we deduced the calculation method of multiple reflection and gave its calculation steps. The simulation results and their analysis verified preliminarily the correctness of multiple reflection and the necessity of its analysis. The results, we believe, provide a new analytical idea and theoretical basis for the study of millimeter wave radiation characteristics of armored target.
Number of references: 9
Main heading: MATLAB
Controlled terms: Ray tracing - Signal detection - Schematic diagrams - Millimeter waves
Uncontrolled terms: Armored targets - Millimeter wave radiations - Multiple reflections - Passive millimeter wave - Radiation characteristics - Ray-tracing method
Classification code: 711 Electromagnetic Waves - 716.1 Information Theory and Signal Processing - 723.5 Computer Applications - 741.1 Light/Optics - 921 Mathematics
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village

213. Sand rate model and data processing method for non-intrusive ultrasonic sand monitoring in flow pipeline

Accession number: 20153101095714
Authors: Gao, Guowang (1); Dang, Ruirong (1); Nouri, Alireza (2); Jia, Huiqin (1); Li, Lipin (1); Feng, Xudong (1); Dang, Bo (1)
Author affiliation: (1) School of Electronic Engineering, Xi'an Shiyou University, Xi'an Shaanxi; 710065, China; (2) School of Mining and Petroleum Engineering, University of Alberta, Edmonton, Canada
Corresponding author: Gao, Guowang(wwgao1205@163.com)
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Issue date: October 01, 2015
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Language: English
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Document type: Journal article (JA)
Publisher: Elsevier B.V., Netherlands
Abstract: Sand production is a critical issue during oil and gas production from sandstone reservoirs. Uncontrolled sand production not only poses the risk of well failure, but also can cause extensive damage to surface and subsurface facilities such as tubing, pumps, valves and pipelines. In recent decades, research on sand production has been conducted in several fronts including sanding prediction, sand monitoring, sand control and well-bore integrity analysis to prevent or alleviate sand production and its consequences. This paper mainly focuses on sand monitoring based on non-intrusive ultrasonic sensor which produces real-time information that can be used for maximizing the safe production of hydrocarbon.We used non-intrusive ultrasonic sensor to monitor the acoustic signals generated by sand particles impacting the pipe wall, and developed a methodology for processing acoustic signals based on the kinetic energy of sand particles in the pipeline. Further, we developed a procedure for identifying and filtering acoustic noise from unrelated events. We validated the proposed methodology for signal processing against experimental data. The results indicated that the de-noising algorithm could filter out the noise from the acoustic data and the model was effective for assessing the sand rate. © 2015 Elsevier B.V.
Number of references: 21
Main heading: Sand
Controlled terms: Kinetics - Pipelines - Acoustic noise - Kinetic energy - Oil wells - Hydrocarbon refining - Data handling - Pipeline processing systems
Uncontrolled terms: Acoustic signals - Data processing methods - Non-intrusive - Oil and gas production - Real-time information - Sand production - Sandstone reservoirs - Wavelet threshold de-noising
Classification code: 483.1 Soils and Soil Mechanics - 512.1.1 Oil Fields - 513.1 Petroleum Refining, General - 619.1 Pipe, Piping and Pipelines - 631.1 Fluid Flow, General - 722.4 Digital Computers and Systems - 723.2 Data Processing and Image Processing - 751.4 Acoustic Noise - 802.3 Chemical Operations - 931 Classical Physics; Quantum Theory; Relativity
DOI: 10.1016/j.petrol.2015.07.001
Compendex references: YES
Database: Compendex
Data Provider: Engineering Village