

1. High-energy gas fracturing (HEGF) technology: Research and application

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Source: *Proc Eur Pet Conf*, p 285-292, 1992, *Proc Eur Pet Conf*; **DOI:** 10.2118/24990-ms; **Conference:** Proceedings of the European Petroleum Conference, November 16, 1992 - November 18, 1992; **Publisher:** Publ by Society of Petroleum Engineers (SPE)

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Abstract: HEGF is an oil/gas well stimulation technology by means of propellant inflaming in wells to produce multiple radial fractures in formation and hence to enhance the well production. The paper summarizes the achievements of our effort on research and application of the technology. For understanding the HEGF mechanism, laboratory and field experiments are conducted and numerical simulators are studied. The treatment design method and implementation techniques are discussed. A design software, which includes the content of propellant burn, perforation, stemming liquid motion, fracture propagation, fluid flow in fracture, and production increase prediction etc., has been developed to serve as the basis of the design, optimization, and control of the technology. The application of the technology to exploratory, production and injection wells shows its great prospects in oil and gas industry. (10 refs)

Main heading: Well stimulation

Controlled terms: Computer software - Engineering research - Fracturing (oil wells) - Injection (oil wells) - Mathematical models - Natural gas well production - Natural gas wells - Natural resources exploration - Oil well production - Oil wells

Uncontrolled terms: High energy gas fracturing (HEGF)

Classification Code: 512 Petroleum and Related Deposits - 512.1.1 Oil Fields - 512.2.1 Natural Gas Fields - 723.5

Computer Applications - 901.3 Engineering Research - 921 Mathematics

Treatment: Applications (APP) - Theoretical (THR) - Experimental (EXP)

Database: Compendex

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2. High precision intelligent apparatus driven by a step motor for measuring liquid level

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Abstract: For the first time this paper presents a steel rope float type apparatus driven by a step motor for measuring liquid level. The apparatus consists of a tank top gauge, a pulse power supply, a STD industrial computer(Z80CPU) and a multiplexer. This apparatus has the features of very simple mechanic construction of the top gauge, uncomplicated circuit, highly accurate measurement, almost no influence by surrounding temperature variation, low cost, convenient operation, easy main tenance. It can be not only used in making a long distance tour of tank group measurement, but also plugged in Distributed Control System (DCS) so as to directly provide data. © 1992 IEEE. (5 refs)

Main heading: Stepping motors

Controlled terms: Gages - Tanks (containers) - Distributed parameter control systems

Uncontrolled terms: flat taper float - High-precision - Highly accurate - Industrial computers - Intelligent apparatus - Pulse power supply - Pulse sources - Surrounding temperature

Classification Code: 619.2 Tanks - 705.3 Electric Motors - 731.1 Control Systems - 943.3 Special Purpose Instruments

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