عنوان مقاله:

A Novel Movement in Oil and Gas Exploration and Production Associated with Nanotechnology: A Literature Review

محل انتشار:

اولین کنفرانس ملی کاربرد نانوتکنولوژی در صنایع نفت و پتروشیمی (سال: 1391)

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خلاصه مقاله:

Nanotechnology is a novel technology with high capability to create significant changes in several facets of the upstream oil and gas industry. It has changed our viewpoint in many scientific categories and has shown new brilliant pathways for old problems remained unsolved through previous technologies. It is the engineered science of creating, using and manipulating objects which is lighter, stronger and more resistant than usual materials. Nano-scale materials have at least one dimension in range of 1 to 100 nanometers. As a result of new properties and the introduction of special phenomena that occur in this size range, materials find considerable aptitude to confront the challenges which seemed far from reach through Macro-scale technology. Through this emerging technology, we make clear the connection between the disciplined study of fundamental molecular forces and the practical application of petroleum engineering. This paper introduces an applicable view of the nanotechnology with a particular sight on Nano-based studies for the upstream oil and gas industry, especially in exploration and production sectors. Despite this progress, there is a concern about the application of nanotechnology that will occur in large scale usage. Some issues of concern that discussed here include the uncertainty of the health and environmental effects of nanoparticles

کلمات کلیدی:

Exploration and production sectors, Macro-scale, Nanoparticles, Nano-scale, Upstream oil and gas industry