

Effect of a natural adsorber as nano particle hydro gel to water shut- off during enhanced oil recovery process

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Polymeric gels are a water-soluble polymer gel, network cross-link agent and solvent polymer gels in the fracture area with high permeability by formation of a solid mass are utilized in this research study. Bentonite as a nano particle was added to poly acryl amid hydro gel to increase adsorption. Bentonite as a nano particle was utilized in different concentration, in this study mechanical and physical property of nano hydro gel solution such as impact, tension, glass transition temperature, humidity absorption, and scanning electron microscopy (SEM) tests have been done and the results revealed that as the cross-linking occurs, tension in rupture region increases. As seen at scanning electron microscopy tests, adsorption of the polymer increased significantly. It is very important that this solution (nanocomposite / gel polymer solution) in very low rates of injection to be flooded into reservoirs with high pressure and low temperature because of low rate of injected solution mass transfer further and resulting adsorption of hydro gel on rock reservoir will increase and the matrix polymer gel to block of the notch reservoir with more durable and strength will form.

Biography

Arjmand graduated in chemical engineering from Gachsaran Azad University on Aug 2005 at BS degree. Arjmand was graduated in chemical engineering in Mahshar Azad University at MS degree on Aug 2008. It is important to mention that he ranked first amongst 18 of my classmates. As I am really interested to chemical and petroleum engineering fields, He decided to work on EOR field and He selected my master thesis entitled "An Experimental study of Viscous Surfactant and Surfactant Flooding to Enhance Oil Recovery Using a New Chemical". He published 15 papers in conferences and journals.

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Synthesis of copper oxide nanowires via electrospinning by gas-solid reaction

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Due to their 1D anisotropic nature, high surface area and unique photoconductive and photochemical properties, copper oxide (CuO) nanowires (NWs) are promising materials for variety of applications such as solar cells, electrodes for batteries, sensors and catalysts. Whereas varieties of methods have been explored to synthesize the CuO NWs with different characteristics, electrospinning has also been found to be successful for that purpose which is fast and much more economical as compared to other sophisticated methods. In the present work, we synthesized CuO NWs using the electrospinning technique. The precursor, which is based on copper acetate salt and PVA as polymer, was electrospun under different flow rates to

which the NW diameter and morphology was found to be sensitive. The obtained NWs were up to several microns long with diameter ranging from 50 to 100 nm as determined from SEM. The compositional analysis carried out via EDS revealed that the NWs are composed of nearly 75 wt. % Cu and 25 wt. % O which is in stoichiometric agreement with that of pure CuO. The morphology of NWs was also examined using AFM which revealed nanoscale irregularities across the NW length. These CuO NWs produced through electrospinning and having different diameter and morphology could have potential catalytic and sensing applications.

Biography

Abdullah Khalil is currently a graduate student in Materials Science and Engineering Dept., Masdar Institute of Science and Technology. He is working under the supervision of Dr. Marwan Khraisheh and Dr. Raed Hashaikh. His research is focused on synthesis, characterization and applications of metal and metal oxide nanowires fabricated through inexpensive processes such as electrospinning. He has published 6 journal papers and 1 conference paper.

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