

## Rock and Cement Laboratory - Drilling Fluids Engineering Laboratory



### PROFESSIONAL EXPERIENCE AND RESEARCH INTERESTS

#### Petroleum Related Rock Mechanics Research

- Sand Control Issues.
- Wellbore Instability Analysis.
- Wellbore Strengthening.
- Fractures Seal Materials.
- Permeability/Stress Relationship.
- Basic Rock Properties.
- Mechanical Properties of Reservoir Rocks.
- Shale Characterization.
- Underbalanced Drilling.
- Wellbore Strengthening and Fractures Seal

#### Oil Well Drilling Engineering Research

- Drilling Fluids.
- Hard Set Cement Properties.
- High Angle and Horizontal Well Orientation Analysis.

#### Groundwater Resources Engineering Research

- Management of groundwater aquifers.

- **Water injection in oil reservoirs.**

### **Research Reports**

- **Musaed N. J. AlAwad: “Physical and Mathematical Modeling of Sand Production Problem in Hydrocarbon Reservoirs.”, Research Project No. P03/17/18, Research Center, College of Engineering, King Saud University, 1997.**
- **Musaed N. J. AlAwad and Omar Almisned: “Potential Application of Saudi Clays in Drilling Fluids.”, A Research Project Funded by King AbdulAziz City for Science and Technology (KACST), Limited Grant Program (LG/2/41) , 1998.**
- **AbdelAlim Hashem, Musaed N. J. AlAwad, and Omar Almisned, G. M. Hamada and Emad S. AlHomadhi: “Developing a New Slurry to Prevent Sand Production from Unconsolidated Sandstone Oil & Gas Reservoirs.”, A Research Project Funded by the Research Center at The College of Engineering, KSU, 1998.**
- **Khairy M. A., Musaed N. J. AlAwad, Mohammed AlSiddiqui, Omar Almisned and A. M. Shebl: “Enhancement of Oil Recovery by Stimulating Growth of Indigenous Microbial Population Under Reservoir Conditions.”, A Research Project Funded by the Research Center at The College of Engineering, KSU, 1998.**
- **Musaed N. J. AlAwad and Ahmed O. AlQasabi: “Potential Application of Barite Depositions in Saudi Arabia As a constituent in oil, gas and water wells Drilling Fluids.”, A Research Project (No.23/421) Conducted to the Advantages of the Research Center at The College of Engineering, KSU and SABIC, 2000.**
- **M. Khairy, Abdulrahman AlQuraishi, Mansour S. AlMalik and Musaed N. J. AlAwad,: "Effect of Pore Pressure and Oil Composition on Relative Permeability and Wettability of Sandstone. A Research Project (38/21) Funded by the Research Center at the College of Engineering, KSU, 27/11/2000.**
- **Omar A. Almisned, Abdulrahman A. AlQuraishi, and Musaed N. J. AlAwad: “Effect of InSitu Stresses and Heterogeneities on Relative Permeability of Some Saudi Reservoirs.”, Funded by The Petroleum and Petrochemical Industries Research Institute, KACST, A Two Years Project (Starting Date: September 9, 2002).**
- **Musaed N. J. AlAwad: Writing a Book Titled: "Introduction to Petroleum and Natural Gas Engineering.", Funded by the Research Center, College of Engineering, King Saudi University, 5/1427 H.**
- **Dr. Eissa Mohamed Shokir, Musaad N. J. AlAwad, and Abdulrahman A. AlQuraishi: “Novel Models for Compressibility Factors of Natural, Sour and Condensate Reservoir Gases Using Artificial Intelligence: Genetic Programming and Neural Networks”, Project No. ENE341/2, The National Plan for Science and Technology, King AbdulAziz City for Science and Technology, March 2012.**

- **Musaed N. J. AlAwad, AbdulRahman Ali AlQuraishi, Eissa Mohamed Shokir, Mohammed Morsy, and AbdulAziz Bin Laboun: “Feasibility Study Of CO2 Capture and Storage In Saudi Arabia”, Project No. 08/ENV356/2, The National Plan for Science and Technology, King AbdulAziz City for Science and Technology, March 2012.**
- **AbdulRahman A. AlQuraishi, Musaed N. J. AlAwad, Mohammed AlQarni, Hamdan AlYami, and Mufarreh Tale: “Development of a New Filter for Sand Control in Oil and Gas Wells”, King AbdulAziz City for Science and Technology, 2014.**
- **AbdulRahman Ali AlQuraishi, Musaed N. J. AlAwad, Mohammed AlQarni, and Hamdan AlYami: “Novel Techniques for Sand Production Control”, King AbdulAziz City for Science and Technology, Grant No. 32/661, 2011.**

**Full publications list, please click here: <http://fac.ksu.edu.sa/malawwad/publications>**