



Rabia HUNKY

Home Country
Libya

Degree
PhD in Petroleum
Engineering

Expertise
Petroleum
Engineering

Research Focus
Enhanced Heavy Oil
Recovery

Host University
Missouri University of
Science
and Technology,
United States

Fellowship Awarded
2007

Rabia Hunky is married and has two children, both born in Rolla, Missouri while she was studying at the Missouri University of Science and Technology (MS&T) for her master's degree in petroleum engineering, which she received in December 2007. Her husband, a production engineer at a milling company in Libya, is a great supporter and strongly believes in what she wants to accomplish.

She is working toward her doctorate in petroleum engineering at MS&T, where she is studying a new technology using surfactant and alkaline chemicals to improve heavy oil recovery from reservoirs in western Missouri. This non-thermal technology for enhanced oil recovery (EO R) or improved oil recovery (IOR) can increase current heavy oil recovery by water flooding from 5 to 15 percent of original oil in place to between 20 and 30 percent at a lower cost and with reduced carbon dioxide emissions compared to thermal technologies such as cyclic steam stimulation or steam-assisted gravity drainage.

Rabia is studying the mechanisms responsible for the formation of water-in-oil and oil-in-water micro-emulsions, reduction of interfacial tension at the oil/water interface, and wettability alteration of sandstone rock surfaces by alkali-surfactant systems.

She will also be conducting sandpack core flooding tests to evaluate the performance of alkali-surfactant systems in heavy EO R under different conditions. She will be testing such things as surfactant and alkaline concentration, brine salinity and injection rates. In addition, she will be modeling these effects to predict her experimental results. Such applications have been well established in the United States and may be useful to some crude oil fields in Libya.

After completing her doctoral research, Rabia plans to teach in the Department of Petroleum Engineering at Al Fateh University in Tripoli, Libya.