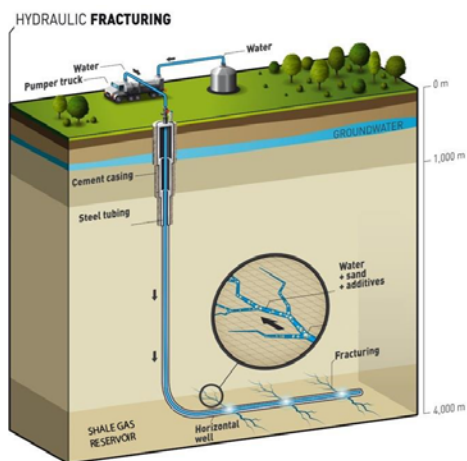




The Student Chapters of SPE/AAPG cordially invites you to the following event:

Probing the Micro-Scale Characteristics of Shale Gas

Abstract



Ever since 2010 hydrocarbon production in the US has surged to the limit that it is poised to overtake Saudi Arabia as the world's largest oil producer in 2018. Hydraulic fracturing and horizontal drilling has been credited as the major driving force behind this renaissance. Although thousands of shale gas wells are actively producing petroleum around the world, factors controlling the permeability in shale gas formations are still poorly understood and lag behind the knowledge from conventional reservoirs. Predicting future production, optimizing recovery while keeping the economics attractive are some of the parameters which will come to define the future of shale gas and oil.

At the nano/micro-scale the pore volume, the pore structure and geometry matter. To better understand the mechanics of gas recovery from shale formations it is essential to develop analytical and numerical models based on real shale images instead of averaged parameters. To gain an insight into the mechanics of gas production from shale formations, a geometrically accurate porous model of an actual shale micro-image has been constructed. Taking into account the pertinent rock and gas parameters (e.g., viscosity, mass-density, porosity, permeability, etc.) we have determined the non-dimensional gas flow rate and pressure variations. Our results compare well with actual core data. Further research directions will factor in multi-phase flow, gas and rock compressibility

Speaker's bio:

Ms Natalia Kovalchuk is currently a doctoral student in Oil, Gas & Energy Engineering at the Marine and Carbon Lab, at the University of Nicosia. Her doctoral research investigates the characteristics of natural gas transport in shales at the micro- and nano-scales. Natalia holds a Master's Degree in Reservoir Evaluation and Management from Herriot Watt University, UK, and a Master's Degree in Geological and Geophysical oil and gas fields development problems from Tomsk Polytechnic University, Russia, through a double degree program.

Before moving to Cyprus she was employed as a Geoscientist at Baker Hughes Company in Russia and Kazakhstan. During her professional assignments in different regions of Russia and Kazakhstan her responsibilities comprised petrophysical interpretation and micro-imaging of rock formations.

The talk will be delivered in English and is open to the public. Please save the date:

Date: Wednesday, February 14th, 2018

Venue/Time: A12, Research & Technology Bld (RTB), 15:30-16:30