

COMPUTATIONAL NANOTECHNOLOGY FOR PETROLEUM ENGINEERING

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ABSTRACT

With the worldwide ever increasing demands on finite energy resources and decreasing availability of easy oil, the petroleum industry is challenged to deliver more oil and unlock resources that are becoming difficult to reach from conventional technologies. Although the use of alternative energy sources (such as renewable energy) will increase in the coming years, the increase will be relatively small and their main role will be to complement and supplement, rather than replace the use of hydrocarbons. In order to extract the increasing amount of crude oil from reservoir, the oil and gas industry now turns to the nanotechnology for innovative solutions. Nanotechnologies have great potentials to bring revolutionary changes in several areas in the oil and gas industry, including exploration, drilling, production, enhanced oil recovery (EOR), refining, distribution, and so on.

This minisymposium will be dedicated to the application of computational nanotechnology in petroleum engineering. It can not only share the application of cutting-edge nanoscale research, but also promote the discussion on the updated understanding of nanotechnology enabled petroleum research. Top experts will be invited to introduce the latest developments and unresolved problems in the field. Well-known scientists with expertise in computational nanotechnology for oil and gas application will be invited to present their results and corresponding research approaches. The minisymposium intends to have 2 sessions, with 2 keynote talks and 8 regular presentations.