



Three R&D Specialist Positions – Rock Physics / Numerical Modelers

The Subsurface Function provides BP's Exploration, Development and Production divisions with the highest quality expert personnel for technical projects, and promotes and oversees the development and application of new technologies. Within the Subsurface Function, the Pushing Reservoir Limits Flagship is responsible for developing and deploying Enhanced Oil Recovery technology across BP. This is one of a number of Technology Flagships that are tasked with delivering advanced technological solutions to BP's business challenges.

The Pushing Reservoir Limits (PRL) Flagship is engaged in developing breakthrough recovery solutions in gas flooding, water flooding, chemical flooding, and in the measurement and prediction of recovery performance in our state of the art core flooding labs located at our Sunbury site, near London. The Flagship comprises reservoir engineers, petroleum engineers, facilities engineers, imaging specialists, computational physics specialists, rock property specialists, and chemists. The Flagship is based both in Sunbury and in Houston, and has strong linkages to our asset teams across the world. The team has recently enjoyed a number of successes, including delivery of 50 Brightwater™ polymer treatments*, the successful progression of LoSal™ technology* in a number of new waterflood projects, and the successful application of digital technologies to the prediction of complex rock properties.

There are three positions available within one of the teams within the Flagship which are described below. These positions are based in the Houston location and are available immediately. Interested individuals can apply on line at <http://www.bp.com/careers> (search for positions 16959BR and 16960BR).

Please note that individuals who either submitted resumes via the career fair at the 2010 AGU Annual Meeting &/or had screening interviews at the AGU meeting do not need to re-submit their application.

Position Description

R&D studies are being undertaken to understand recovery processes and rock properties. Three positions are available which offer a unique opportunity to work at the forefront of computational and experimental rock physics, and its application within an industrial R&D setting, at a company with industry-leading supercomputing resources.

Two positions are available with specific interests as follows:

- Geoscientist (Rock Physics): Responsibilities may include some or all of the following: analyzing 3D image data, and performing and interpreting numerical simulations using 3D image data; Designing, performing, and analyzing experiments to understand relationships between microstructure and macroscopic properties; Formulating and performing research to understand wettability in rocks with varied mineralogies and saturated with multiple fluids. Five to ten years of post-graduate experience is preferred, preferably in the oil & gas industry.
- Numerical Modeler: Responsibilities include developing, implementing, and validating computational algorithms to model pore-scale physics; optimizing codes for application in a high performance computing environment; Performing and interpreting numerical simulations. Two to five years post-graduate experience is preferred.

An additional opportunity is available for an exceptional new graduate.

Depending on the particular position, the following qualifications are of interest:

- PhD degree in relevant field, including geophysics, geosciences, physics, engineering, chemistry, or mathematics
- Familiarity and/or experience with 3D imaging technologies
- Familiarity and/or experience with computational fluid dynamics
- Familiarity and/or experience with elastic wave propagation modeling
- Familiarity and/or experience with finite difference and finite element modeling
- Strong scientific programming skills, including C++, C, Fortran, and MPI
- Understanding of rock physics and/or rock mechanics; petrophysics, and reservoir engineering



- Ability to work in a team
- Excellent communication skills
- Fluent in written and spoken English
- Willingness and ability to travel up to 25% of the time to fulfill responsibilities of the position
- Proven track record of accomplishment in relevant discipline as evidenced by previous work

About BP

Our business is the exploration, production, refining, trading and distribution of energy. This is what we do, and we do it on a truly global scale. With a workforce of 80,000 employees, BP operates with business activities and customers in more than 80 countries across six continents. Every day, we serve millions of customers around the world. We are continually looking for talented, committed and ambitious people to help us shape the face of energy for the future.

BP's Exploration and Production segment focuses on finding reserves of oil and gas, developing the means to extract and process it and then consistently producing and transporting it to market. This involves using cutting edge technology to find the energy reserves, the ability to drill thousands of meters under the ground, designing, building and operating some of the world's largest most complex production onshore / offshore facilities and finally being able to transport these fluids, in order to provide energy to the world.

You'll have the opportunity to work on a diverse range of geographies and development types, including a variety of offshore, deepwater, onshore, oil, gas and condensate scenarios of differing scale. You may find yourself in exploration - looking for hydrocarbon accumulations in the most upstream part of our business; working in appraisal and development, to ensure the maximum recovery of hydrocarbons from producing reservoirs, or working with commercial, legal, political and technological experts to negotiate entry into new areas.

*LoSal is a trade mark of BP plc. Bright Water is a trade mark of Nalco Energy Services LP, used by BP under license.