

Advanced Energy Consortium will develop micro and nanosensors to boost energy production

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The Bureau of Economic Geology at The University of Texas at Austin's Jackson School of Geosciences announces the Advanced Energy Consortium (AEC), a multimillion-dollar research consortium dedicated to the development of micro and nanotechnology applications to increase oil and gas production.

The Richard E. Smalley Institute for Nanoscale Science and Technology at Rice University, which has extensive nanotechnology expertise, will be a collaborative technical partner.

Geoscientists believe that more oil and gas can be extracted by improving their understanding of the chemical and physical characteristics of existing oil and gas reservoirs. Using current technology, typically 60 percent of oil remains underground after primary, secondary and in some cases even tertiary recovery methods.

The consortium's primary goal is to develop intelligent subsurface micro and nanosensors that can be injected into oil and gas reservoirs to help characterize the space in three dimensions and improve the recovery of existing and new hydrocarbon resources. By leveraging existing surface infrastructure, the technology will minimize environmental impact.

Members of the privately funded consortium include BP America Inc., Baker Hughes Incorporated, ConocoPhillips, Halliburton Energy

Services Inc., Marathon Oil Corp., Occidental Oil and Gas, and Schlumberger. The Bureau of Economic Geology will manage the Houston-based AEC on behalf of the funding members.

The AEC will solicit leading universities and researchers worldwide for competitive project proposals and the most promising will be funded.

“The petroleum industry realizes there are exciting possibilities for the application of nanotechnologies that will provide a more comprehensive picture of existing oil and gas reserves,” said Scott W. Tinker, director of the Bureau of Economic Geology. “The consortium provides a vehicle for this critical pre-competitive research and sends a great message to young people that the industry is investing substantially and for the long term.”

Tinker and Jay Kipper, also of the Bureau of Economic Geology, are the AEC’s managing directors.

“We look forward to working with the world's leading energy companies and oil field service firms and with Rice University as a technical partner to make this research program a success,” Tinker said. “The AEC intends to kick off a series of forums starting in early 2008, bringing leading nanotechnology experts together with oil and gas exploration and production technologists. The goal is to develop a technology roadmap which will serve to more specifically target and further narrow the focus of the subsequent project solicitations.”

Intelligent sensors could range from hundreds of micrometers down to hundreds of nanometers. (For reference, the human hair is about 100,000 nanometers wide.) These functional units would collect data about the physical characteristics of hydrocarbon reservoirs.

Source: University of Texas at Austin

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