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### FEI Unveils Novel Solution for Natural Gas Extraction in Unconventional Reservoirs



#### ▶ 3D, Nanometer-Scale Characterization of Pore Networks Provides Information Critical to Optimizing Extraction Procedures and Maximizing Production

**HILLSBORO, Ore., Feb. 14, 2011** (GLOBE NEWSWIRE) -- FEI (Nasdaq:FEIC), a leading instrumentation company that provides imaging and analysis systems for research and industry, today announced a novel solution for analyzing the production characteristics and potential of unconventional gas reservoirs. The Helios NanoLab™ DualBeam™ system images kerogen, porosity and microstructures in three dimensions (3D) with nanometer-scale resolution. The data are essential to determining the production potential of the reservoir, optimizing extraction procedures and designing simulators of the nanoscale pore

structure.

"Huge reserves of natural gas are known to exist in unconventional gas reservoirs, but it is difficult to produce this gas because it is trapped in poorly connected networks of pores with dimensions as small as a few nanometers," said Dr. Paul Scagnetti, vice president and general manager, Natural Resources Division, FEI. "The ability to understand the structure of these networks allows geologists to make more accurate predictions of producible gas and optimize its extraction."

The University of Oklahoma, in collaboration with Devon Energy, is an early adopter of this novel solution. The Helios system captures images and develops a 3D microstructural model of the pore structure, including the subvolumes of kerogen and its connectivity. The data produced by the Helios are central to a series of recent publications (1Sondergeld et al. 2010; 2Sondergeld and Rai 2010; and 3Curtis et al. 2010) that cast these unconventional reservoirs in a new, more complex light.

"This imaging and analysis capability is the gateway to understanding, and more efficiently extracting, gas from these enormous global hydrocarbon assets," stated Dr. Carl Sondergeld, Professor and Curtis W. Mewbourne Chair, Mewbourne School of Petroleum and Geological Engineering, Oklahoma University.

Sondergeld adds, "Early observations demonstrate that organic matter is distributed differently in different shales, and that this organic material is more porous than previously imagined. The pores are so small that they require new physical controls on the behaviors of gases. The existence of this previously unimagined pore space helps to explain why there is so much producible gas in shales. The images also explain why production declines so rapidly in some of the unconventional shale reservoirs. As a result, this new information is forcing many to reconsider previously held beliefs about unconventional shale reservoirs."

For more information, please visit [www.fei-natural-resources.com](http://www.fei-natural-resources.com)

1Sondergeld, C. H., Ambrose, R. J., Rai, S. S. and Moncrieff, J. "Microstructural Studies of Gas Shales," SPE131771. Unconventional Gas Conference, Pittsburgh, Pennsylvania, February 23-25, 2010.

2Sondergeld, C. H. and C. S. Rai. "Nanoscale Imaging Visualizes Shale Gas Plays," Exploration and Production, pp. 51-52. Hart Energy Publishing LP, September 1, 2010.

3Curtis, M., R. J. Ambrose, C. H. Sondergeld and C. S. Rai. "Structural Characterization of GASD Shales on the Micro- and Nanoscales," SPE137693. Canadian Unconventional Resources and International Petroleum Conference, Calgary, Alberta, Canada, October 19-21, 2010.

#### About FEI

FEI (Nasdaq:FEIC) is a leading diversified scientific instruments company. It is a premier provider of electron- and ion-beam microscopes and tools for nanoscale applications across many industries: industrial and academic materials research, life sciences, semiconductors, data storage, natural resources and more. With more than 60 years of technological innovation and leadership, FEI has set the performance standard in transmission electron microscopes (TEM), scanning electron microscopes (SEM) and DualBeams™, which combine a SEM with a focused ion beam (FIB). FEI's imaging systems provide 3D characterization, analysis and modification/prototyping with resolutions down to the sub-Ångström (one-tenth of a nanometer) level. FEI's NanoPorts in North America, Europe and Asia provide centers of technical excellence where its world-class community of customers and specialists collaborate. Headquartered in Hillsboro, Ore., USA, FEI has approximately 1800 employees and sales and service operations in more than 50 countries around the world. More information can be found at: [www.fei-natural-resources.com](http://www.fei-natural-resources.com)

#### FEI Safe Harbor Statement

*This news release contains forward-looking statements that include statements regarding the performance capabilities and benefits of the Helios NanoLab DualBeam. Factors that could affect these forward-looking statements include but are not limited to failure of the product or technology to perform as expected and achieve anticipated results, unexpected technology problems and our ability to manufacture, ship and deliver the tools or software as expected. Please also refer to our Form 10-K, Forms 10-Q, Forms 8-K and other filings with the U.S. Securities and Exchange Commission for additional information on these factors and other factors that could cause actual results to differ materially from the forward-looking statements. FEI assumes no duty to update forward-looking statements.*

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