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## **INGRAIN, Digital Rock Physics Lab orders second AURIGA CrossBeam® FIB-SEM Workstation at Carl Zeiss**

Intensified cooperation in the Nanoscale Analysis of shale and tight gas sand rock samples.

HOUSTON/Texas, — April 10, 2011 At this years AAPG show, Carl Zeiss and Ingrain Inc. announced a further strengthening of their collaboration. With the purchase of a second [AURIGA® CrossBeam® FIB-SEM workstation](#), Ingrain has broadly increased its capacity for analysis of shale rock properties at the pore scale.

“We’re excited, the demand for these services has increased to the point that we were forced to bring on a second workstation,” said Boaz Nur, Ingrain’s VP of Operations. “It demonstrates both an increase in industry activity in shale and further adoption of our services in the market. This tool will not only serve to add capacity to our North American clients but allows us to handle the demand brought on by the global shale boom.”

Ingrain’s digital rock physics lab provides special core analysis services (SCAL) on oil and gas reservoir rocks using 3D imaging and computing. Using whole core, core plugs, sidewall cores or even drill cuttings, Ingrain can deliver crucial information much faster than physical labs, and at a lower overall cost.

The AURIGA CrossBeam workstation integrates a focused ion beam (FIB) system and a scanning electron microscope (SEM) in one instrument. The FIB system acts like a Nanoscale scalpel to remove very thin slices of material from a sample—like shale rock—while the SEM provides high resolution images of the rock’s structure, revealing and distinguishing between voids and minerals. The AURIGA FIB/SEM fully automates these functions to produce consecutive image slices as thin as 5 nm, which can be reconstructed to form a 3-D image of the rock.

Dan McGee, President of Carl Zeiss NTS LLC in the US comments: “The deployment of our AURIGA CrossBeam FIB-SEM systems for this application is extremely exciting. Having received a second order from Ingrain strongly confirms the extraordinary high value-proposition this tool has for Ingrain.”

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### **About Ingrain**

*Since starting up in 2007, Ingrain has introduced technical breakthroughs in 3D imaging and computation that enable them to quickly and accurately compute porosity, permeability, elastic properties, electrical properties and multiphase flow in oil and gas reservoir rocks. This information allows oil and gas companies to more accurately estimate the potential of their reserves and make faster, better-informed field development decisions. For more information, please visit [www.ingrainrocks.com](http://www.ingrainrocks.com).*

#### **Carl Zeiss**

The Carl Zeiss Group is a leading group of companies operating worldwide in the optical and opto-electronic industries. Carl Zeiss offers innovative solutions for the future-oriented markets of Medical and Research Solutions, Industrial Solutions, Eye Care and Lifestyle Products. During fiscal year 2009/10 the group of companies generated revenues of around EUR 2.98 billion. From fiscal year 2010/11 onward, eyeglass lens manufacturer Carl Zeiss Vision will be integrated as an autonomous business group (revenues of EUR 880 million in fiscal year 2009/10). The Carl Zeiss Group now has approximately 24,000 employees, including more than 10,000 in Germany. The Carl Zeiss business groups hold leading positions in their markets. Carl Zeiss AG, Oberkochen, is fully owned by the

#### **Carl Zeiss NTS**

Carl Zeiss NTS GmbH is the Nano Technology Systems Division of Carl Zeiss. As a pioneer in electron microscopy with more than 60 years of experience, Carl Zeiss NTS is one of the leading manufacturers of electron and ion-optical systems for the imaging, physical and chemical analysis and measurement of specimens with resolution in the picometer range. The company offers a broad spectrum of application and service solutions for the fields of nanotechnology, materials research and life sciences. Carl Zeiss NTS GmbH is headquartered in Oberkochen, Germany, and has subsidiaries in England, France, the USA and Singapore. The company has a global workforce of about 650 people. Further information is available at [www.zeiss.com/nts](http://www.zeiss.com/nts).