



April 27, 2015

New ESI Instrument First to Support Sub-Cellular Elemental Imaging

Designed for Specific Research Applications, NWRImage™ System Offers Breakthrough Submicron Spatial Resolution, Fast Signal Response

PORTLAND, Ore.--(BUSINESS WIRE)-- Electro Scientific Industries, Inc. (NASDAQ:ESIO), an innovator of laser-based manufacturing solutions for the micromachining industry, today announced the NWRImage™ system that gives researchers a powerful new tool for investigating elemental binding and transport within cells. The NWRImage™ system is the first elemental imaging-specific laser ablation instrument of its kind, offering breakthrough sub-micron spatial resolution and ultra-fast signal response for high throughput rates.

Laser ablation (LA) systems such as NWRImage™ are used in conjunction with Inductively Coupled Plasma Mass Spectrometer (ICP-MS) systems to detect and analyze tiny amounts of material. As ICP-MS systems have become more sensitive, a need has emerged for LA imaging tools with < 1 micron spatial resolution - a capability not previously available on the market. Instead, researchers have had to use general-purpose LA systems that fail to provide the correct beam characteristics or signal response and lack long-term reliability.

To address these shortcomings, the NWRImage™ was designed from the ground up specifically as an advanced elemental imaging solution. It uses a proprietary laser beam delivery system to yield sub-micron spatial resolution providing analysts with the tools they need to distinguish features at the sub-cellular level. It incorporates an ESI-manufactured Diode Pumped Solid State laser source for unmatched long-term stability and reliability over the course of millions of laser shots.

"The NWRImage™ is an outstanding example of the level of advanced engineering capability ESI has on tap in order to help solve some of our customers' most difficult challenges," said Edward C. Grady, President and CEO of ESI. "The sub-micron spatial resolution provided by the NWRImage™ is a major advance that ultimately could save lives by providing improved diagnostic capability for clinicians."

In addition to its spatial resolution, the speed of the signal response is vitally important since it directly determines the available sample throughput or analysis time. The NWRImage™ is provided with a carefully designed aerosol path from point of ablation to injection into the ICP itself. This aerosol path combined with a novel Dual Concentric Injector (DCi) ICP torch, yields < 50ms signal response to accelerate the speed of analysis and enabling enhanced sample throughput.

Initial NWRImage™ units have been delivered to BAM (Bundesanstalt für Materialforschung und -prüfung) in Berlin, Germany, one of the leading global research institutes in this field, where it will be used for bio imaging of single cells and medical tissue samples.

"For this application we needed increased sensitivity and significantly shortened analysis time for extended thin sections of tissues or biopsy samples," said Dr. Norbert Jakubowski of BAM. "By increasing the repetition rate (by a factor of 10 compared to conventional systems), we expect that the NWRImage will increase our sample throughput from one or two samples per day to up to 10 samples per day without compromising our detection power."

Availability

ESI is taking advance orders for the NWRImage™ system for delivery in the Fall of 2015. To learn more or to participate in a trial, see us at www.esi.com/Products/AskAnExpert.aspx?=-NWRImage or contact your local ESI representative.

About ESI

ESI's integrated solutions allow industrial designers and process engineers to control the power of laser light to transform materials in ways that differentiate their consumer electronics, wearable devices, semiconductor circuits and high-precision components for market advantage. ESI's laser-based manufacturing solutions feature the micro-machining industry's highest precision and speed, and target the lowest total cost of ownership. ESI is headquartered in Portland, Ore., with global operations from the Pacific Northwest to the Pacific Rim. More information is available at www.esi.com.

McKenzie Worldwide PR for ESI
Rob Goodman, 503-380-2441
robg@mckenzieworldwide.com

or

ESI
Brian Smith, 503-672-5760
smithb@esi.com

Source: Electro Scientific Industries, Inc.

News Provided by Acquire Media