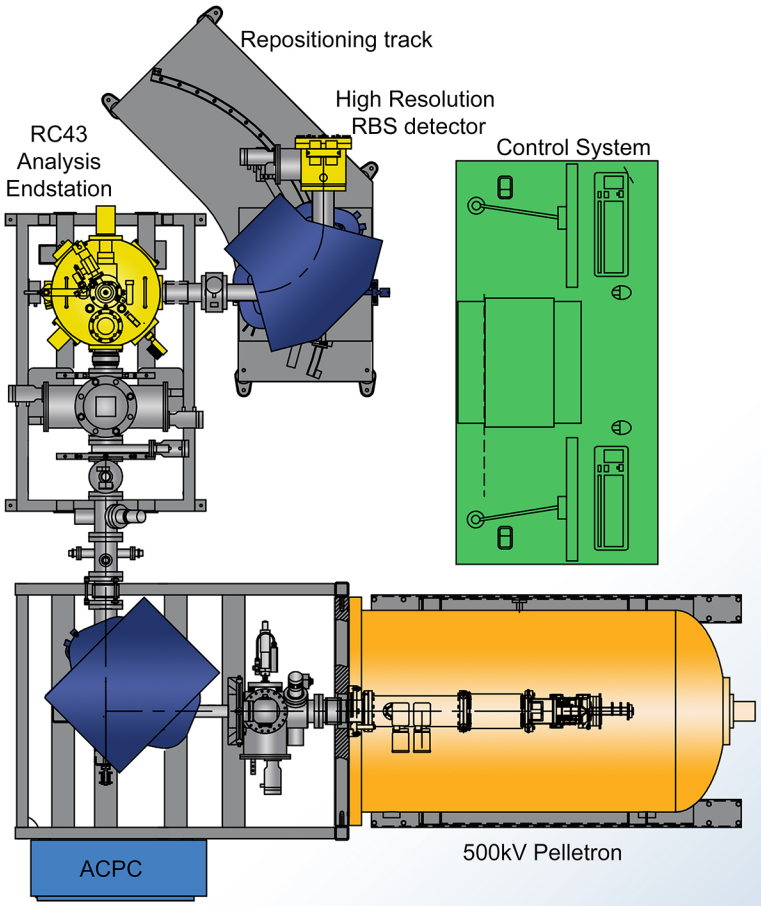
COMPACT AUTOMATED RBS SYSTEM

WITH HIGH RESOLUTION RBS DETECTION SYSTEM

Within the Ion Beam Analysis (IBA) community, there is a need for smaller and more automated instruments, while still maintaining or exceeding existing instrument performance. The Compact Automated RBS (CARBS) system, based on a 500kV single ended accelerator, was designed to meet those needs.



Features

- Monolayer depth resolution
- Compact layout: 4M x 3.5M
- Automated analysis
- Long source life
- Minimal maintenance
- Excellent beam stability: < 50eV
- Easily upgradable to 1-2MeV

Includes:

500kV single-ended accelerator with positive RF source
IBA Analysis Endstation (RC43) with detectors for RBS and Channelling RBS
High Resolution RBS Detector system for Angstrom level depth resolution
Control system capable of automated analysis and automatic startup/shutdown

CONTACT NEC TODAY FOR MORE DETAILS

National Electrostatics Corp.

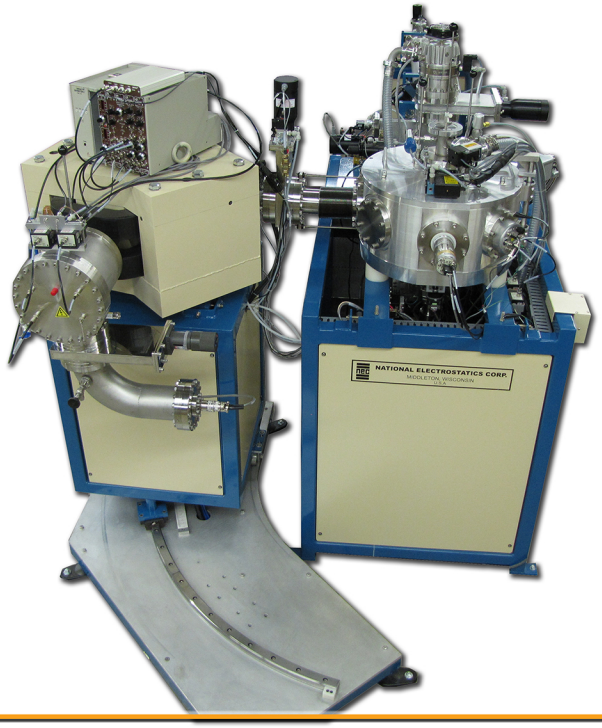
E-mail: nec@pelletron.com | Phone: (608) 831-7600 | Website: www.pelletron.com

7540 Graber Road, P.O. Box 620310 Middleton, WI 53562-0310 USA

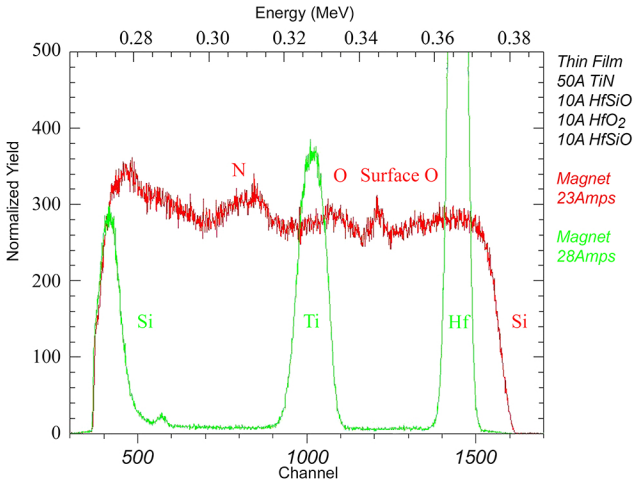
HIGH RESOLUTION RBS SYSTEM

FOR NANOTECHNOLOGY APPLICATIONS

The High Resolution RBS (HR-RBS) detector system, when combined with the CARBS accelerator system, adds monolayer composition vs. depth capabilities from the sample surface to approximately 1000Å.



The HR-RBS detector system attaches to the NEC RC43 Analysis Endstation. The detector consists of an entrance aperture to define the scattering angle, a single focusing 90^{O} magnet to resolve the energy of each scattered ion, and a position sensitive micro channel plate detection system to count the ions as a function of position. It can easily be positioned at the 90^{O} or 45^{O} port of the endstation. The bellows allows angle variability of $\pm 5^{O}$ at either port.



The spectra are modeled by the NEC RC43 software to provide elemental composition vs. depth profiles. ASCII spectra files can be imported into numerous data analysis packages.

Unattended operation is facilitated by computer automation

Energy resolution with HR-RBS system is ~ 1 keV
vs.
~ 15 keV with standard solid state detector

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