RENISHAW INVIA REFLEX MICRO-RAMAN

NANOSCALE ENGINEERING SCIENCE & TECHNOLOGY

Instrument Quick Stats

•Accomidates solid, liquid and gaseous samples.

•Temperature controlled stage ranging from 25-1500ºC.

•Computer-controlled switching between laser sources.

•Automatic alignment and optimization of laser source power.

•Laser spot size variable from 1-300µm.

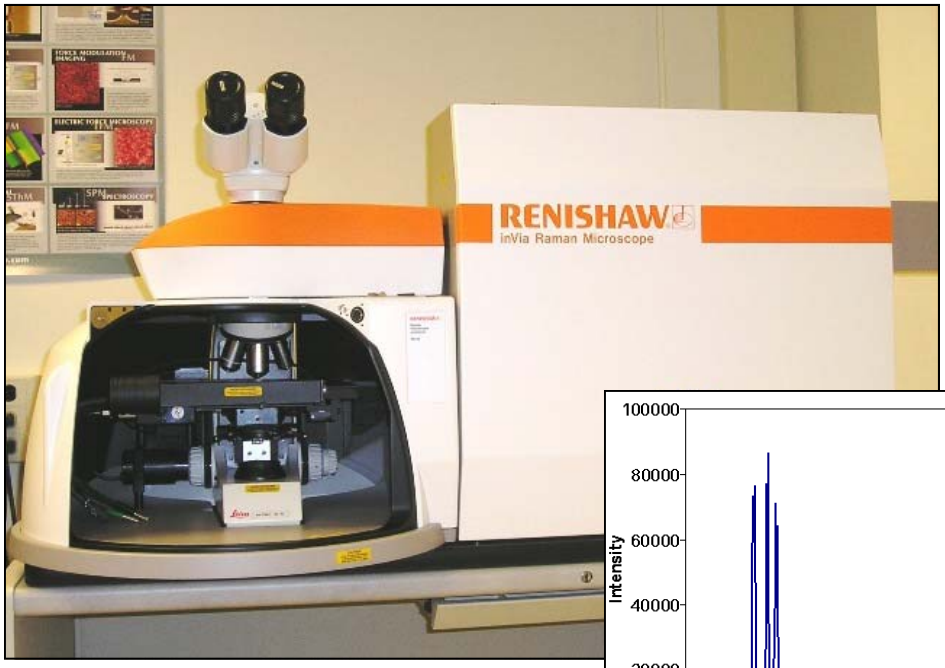
•Facile switching between microscope viewing and Raman mode.

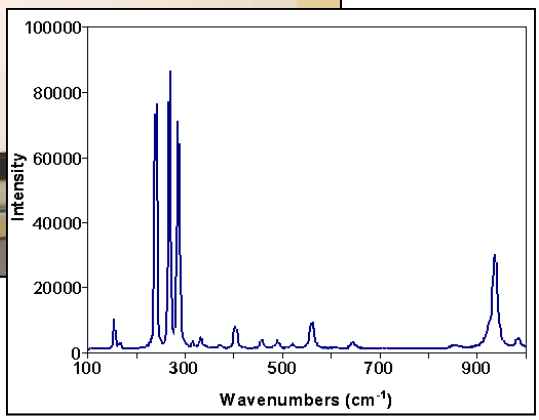
•Capable of confocal measurements with 2.5µm depth resolution.

•XYZ mapping sample stage with 0.1µm steps.

•High sensitivity, ultra-low noise CCD array detector.

UNIVERSITY of DAYTON





Raman microscopy is a non-destructive analytical technique in which a material is excited by an incident laser at a known energy and subsequently characterized by plotting the intensity of scattered light versus the change in its energy. Every material has a characteristic Raman spectrum. A typical spectrum (for topaz) is shown above. Information about chemical composition, molecular structure and molecular interactions can be obtained using this technique.

The Renishaw inVia Micro-Raman is equipped with two laser excitation sources: a near infrared diode laser source (300mW) for excitation at 785nm and an Argon ion laser source (25mW) for excitation at 514nm. The instrument is designed for one-click switching between the sources, with computer-controlled reconfiguration and optimization. Calibration is automatic, using an internal reference sample. The micro-raman is also equipped with a Leica microscope with binocular eyepieces and an integrated color video camera. The microscope is capable of making confocal measurements with 2.5µm depth resolution.

Contact Information

Thomas Wittberg
NEST Lab Manager • (937) 229-3001 • Thomas.Wittberg@udri.udayton.edu

Visit our website at http://www.nestlaboratory.com

NEST Laboratory • 300 College Park Drive • Dayton, OH 45469 • (937) 229 – 5776

Last revised January 19, 2007