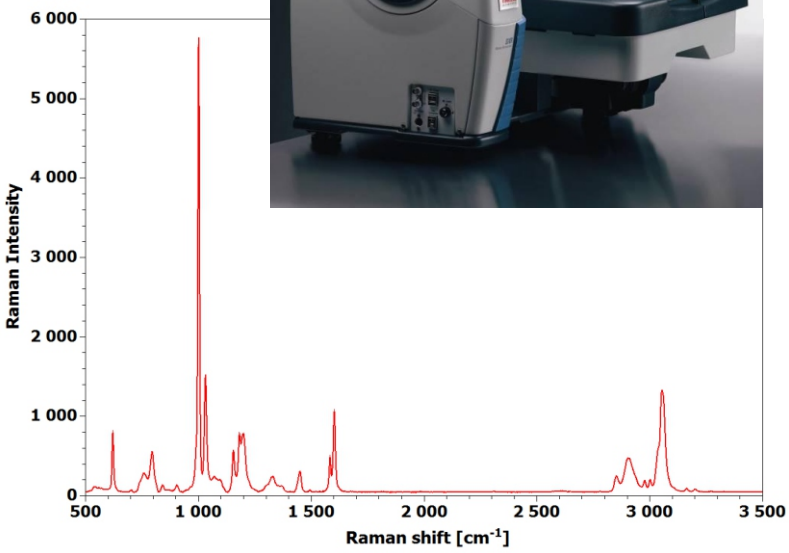
DXR RAMAN **SPECTROSCOPY**

THERMO SCIENTIFIC

We offer contract use of the Thermo Scientific DXR Raman microscope which is a non-destructive and a research-quality analytical instrument providing information about the structure of materials. The method is based on interaction of the electromagnetic radiation and the sample molecules under condition of a change of the polarizability of the molecule.

ACQUIRED INFORMATION

- Detailed structure analysis
- Defect and Failure analysis
- Identification of unknown materials
- Low-concentration molecules detection via Surface Enhanced Raman Spectroscopy
- Surface mapping and depth profiling



Raman spectra of polystyrene

SAMPLE TYPES

- Liquid and solid samples
- Solutions of inorganic, organic and biological materials
- Pharmaceutical materials (API)
- Nanomaterials, microscopic materials
- Biological samples such as tissue, cells, bacteria and other biological objects

MODES, CONDITIONS AND PRECISION

- Excitation lasers at 633 nm (maximum power at sample 8 mW) and 780 nm (maximum power at sample 24 mW)
- Standard working distance objectives: 4X (macro sampling adapter), 10X and 50X
- Spectral resolution of the system is 5.0 cm^{-1} (when full-range grating is used) and 3.0 cm^{-1} (when high-resolution grating is used)
- Laser power regulator to guarantee reproducible laser power at sample
- 1 µm x, y spatial resolution and 2 µm depth resolution
- Automatic fluorescence and cosmic ray correction available with all excitation lasers
- OMNIC Atlus™ software provides software-controlled hyperspectral mapping and image analysis
- ValPro system qualification for DQ/IQ/OQ/PQ validation is available including the industry-standard format and automated software protocols
- Possibility to develop an analytical procedure based on Surface Enhanced Raman Spectroscopy for an ultra-trace determination of selected molecular targets; availability and sensitivity of this option depends on a complexity of the sample(s) and nature of the requested target(s)

DETAILED INFORMATION ON REQUEST

REGIONAL CENTRE OF ADVANCED TECHNOLOGIES AND MATERIALS

WWW.RCPTM.COM RCPTM.SERVICES@UPOL.CZ

Palacký University Olomouc