

Introduction

InVia Raman confocal spectrometer offers spectral, depth profiling and mapping acquisitions to provide high resolution chemical and molecular information on a wide variety of sample types. SEM-Raman interfacing (SEM-SCA) enables simultaneous chemical characterisation coupled with high resolution imaging of organic nanostructures. JSM-6510 SEM operates in low and high-vacuum modes to facilitate the investigation of uncoated non-conducting samples.

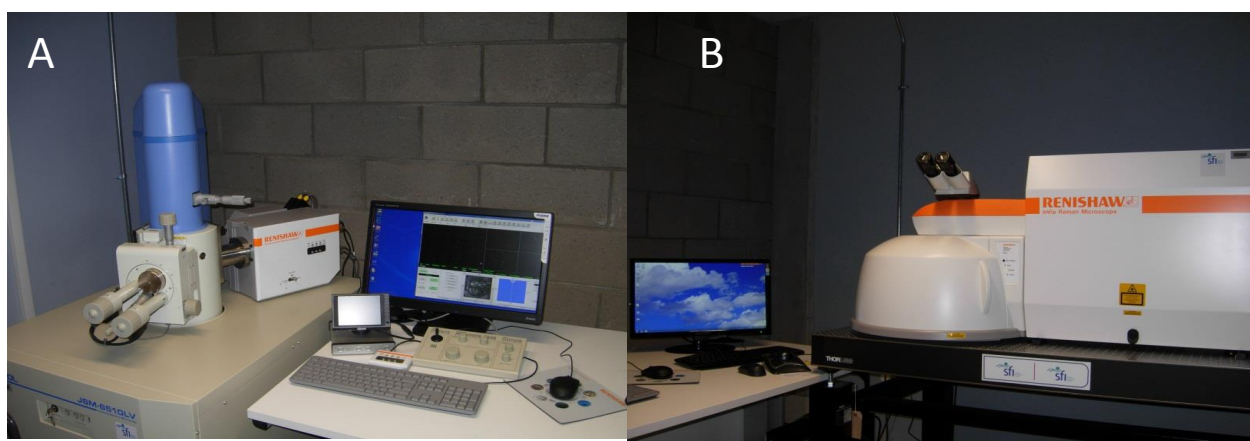


Fig.1: Renishaw InVia Raman Spectrophotometer (B) interfaced with JEOL Scanning Electron Microscope (A).

Renishaw InVia Raman spectrophotometer specifications:

- Dual excitation sources (532 nm and 785 nm lasers)
- An optical microscope (Leica) with high quality objective lenses
- A motorised spectrometer lenses which automatically align for each configuration
- Grating stage with dual gratings (1800 lines mm^{-1} for 532 nm and 1200 lines mm^{-1} for 785 nm)
- A thermoelectrically cooled ($-70\text{ }^{\circ}\text{C}$) CCD detector
- Spot size of $< 2\text{ }\mu\text{m}$ for 50x objective lens
- Spatial resolution $< 1\text{ }\mu\text{m}$



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- Laser line specific Rayleigh filters with a dual filter arrangement to optimise sensitivity
- Raman shift range of 100 - 4000 cm^{-1}
- A Raman probe and SEM interface for coupling the InVia spectrophotometer to an SEM

JSM-6510LV Scanning Electron Microscope specifications:

- Operating voltage of 0.1-30 kV.
- Resolution: High-vacuum mode: 30 kV 3.0 nm (SEI, 8 mm WD)
3 kV 8.0 nm (SEI, 6 mm WD)
1 kV 15 nm (SEI, 6 mm WD)
- Magnification of 5x – 300,000x
- Pressure range in the specimen chamber: 10 to 270 Pa
- Image Signals:
High-vacuum mode: secondary electron and backscattered electron imaging
Low-vacuum mode: backscattered electron imaging, Multi-element solid state BSE detector standard on LV models
- Working distances 1.5-40 mm with tilt -5 – 70 degrees
- BSE Detector with 3 nm resolution
- Stage navigation system



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SEM-Raman

Invia Raman confocal spectrometer

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