

Tip Enhanced Raman Spectroscopy (TERS)



Raman:

Renishaw Invia Reflex Spectrometer
focal length 250mm
Raman Spectrum: 50cm⁻¹ to 4000cm⁻¹

Microscope:

Specially adapted Research Grade Leica microscope allowing confocal measurements with better than 2.5μm depth resolution (using a 100x objective), 2.5x, 20x and 50x objective.

Laser:

Air cooled Argon Ion Laser , 50Mw at 514nm,
High power Infrared diode laser 250Mw at 785nm,
Auto align and optimisation of input laser power

Detector

CCD array detector near infrared enhanced,
deep resolution (576x384 pixels). Peltier cooler to -70°C

AFM & Raman

Atomic Force Microscopy (AFM) provides a variety of nanometric characterizations such as topography, conductivity, and thermal measurements. While very effective at measuring certain properties, AFM cannot identify the chemical composition of a given material. Raman spectroscopy, however, has emerged as a critical technique in the field of chemical characterization, accurately identifying and classifying materials in a number of diverse fields and industries such as: material science, chemistry, biophysics, semiconductors, and many more.