

Measurement of: Near field 3D Optical microscopy, Polymer Imaging, SERS of biological materials

Equipment: Nanonics-Reinshaw integrated SNOM-AFM-Raman Microscope

Property Measured: NSOM provides simultaneous measurements of the topography and optical properties --- direct correlation between surface nanofeatures and optical properties.

Photograph (small size)



Basic Principle: As light passes through a sub-wavelength diameter aperture and illuminates a sample that is placed within its near field, at a distance much less than the wavelength of the light. Thus the resolution achieved is far better than that which conventional optical microscopes can attain.

Capabilities: This is especially useful for the studying the inhomogeneous materials or surfaces, like nanoparticles, polymer blends, porous silicon, biological systems, metamaterials.

Specifications: Reflection and collection (noncontact mode).

Scan range (lateral and axial): 170 micron

Objectives: 5x, 20x and 50x

Cantilever tip Resolution: 60 nm

Lasers: 532 nm: Air cooled 50 mW laser

785 nm: Air cooled high power NIR diode 300mW laser

Sample Requirement: ultra clean, optically active samples, total sample thickness should be less than 1 mm and feature size ~ 100 to 1000 nm