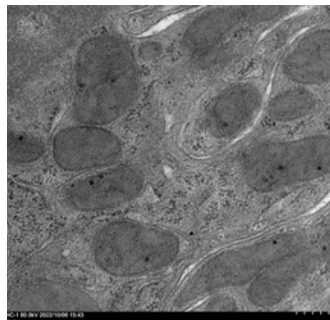


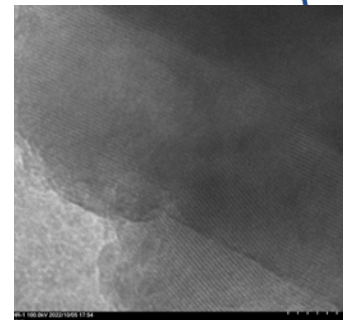
Microscopy

For over 20 years, RTI International has provided state-of-the-art laboratory support for regulatory, environmental, manufacturing, energy, and agrichemical clients within the commercial sector, industry, academia, and state and federal agencies:

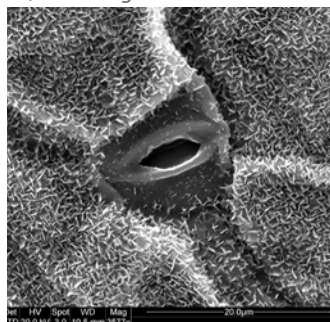
- Optical, electron, and atomic force microscopy
- Air quality assessments and particle characterization of fibrous and particulate materials
- Non-destructive analytical techniques
- Project design
- Problem-solving



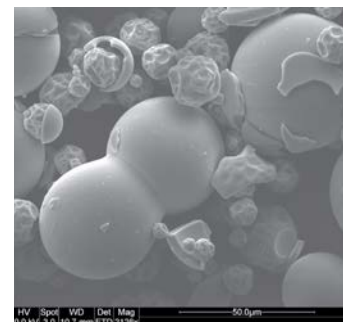
Transmission electron microscope (TEM) image of a mouse kidney at 10,000× magnification



TEM image of asbestos crystal lattice at 300,000× magnification



SEM image of alfalfa stoma at 3,577× magnification



SEM image of pharmaceutical particles at 2,126× magnification

TEM & SEM

Sample preparation equipment

- Denton vacuum evaporator
- Denton sputter coater
- Spex ball mill
- Spex cryo-mill
- Lindberg muffle furnace
- SPI plasma asher
- Multiple Olympus stereoscopes
- Multiple phase-contrast and polarized light microscopes with imaging capability

Hitachi HT7820 transmission electron microscope (TEM)

- Maximum 120kV accelerating voltage
- Magnification of 50×–800,000×
- Dual mode objective lens (high resolution and high contrast) allows analysis of nanomaterials and biological samples
- Scanning TEM (STEM) with bright and dark field detectors
- Equipped with Oxford Instruments Ultim Max energy-dispersive x-ray (EDX) detector (range of elements detected: Be–Cf)
- Equipped with AMT NanoSprint 1200 high-definition 12mp CMOS camera

FEI Quanta 200 environmental scanning electron microscope (SEM)

- High resolution
- Maximum 30kV
- High vacuum, low vacuum, and extended low vacuum (ESEM) imaging capability
- Charge-free imaging of non-conductive or hydrated specimens
- Fixed objective aperture
- Four-axis motorized stage with manual tilt (–10° to +60°)
- Oxford Instruments Xplore energy-dispersive x-ray (EDX) detector

For more information about TEM & SEM technology:

Sara Harrison, Research Geologist
seharrison@rti.org
919-541-6484

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3040 E. Cornwallis Road, PO Box 12194
Research Triangle Park, NC 27709

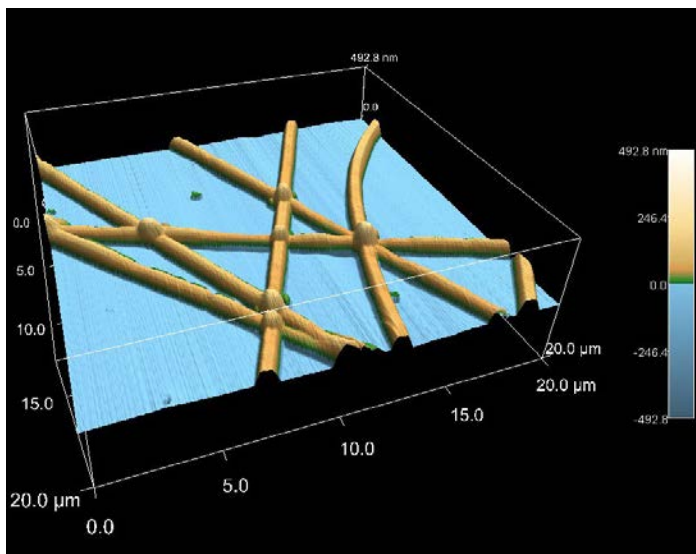


Image of electrospun nanofibers

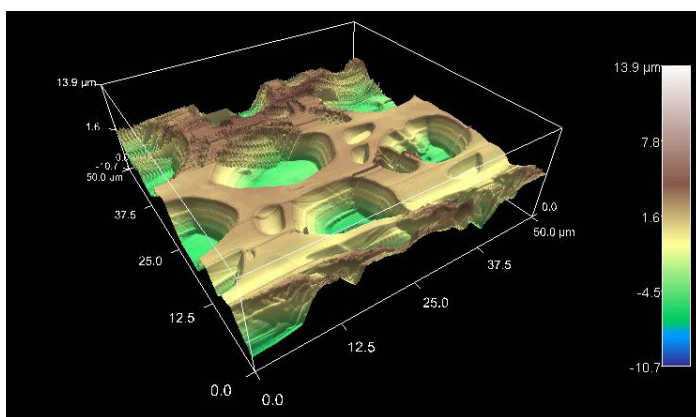


Image of polymer thin film coating on glass slide

AFM Asylum MFP-3D

Features, operating modes, and accessories:

- High-resolution imaging in both air and fluid
- Operation modes: contact mode, tapping mode (AC mode)
- Electrostatic force microscopy (EFM)
- Magnetic force microscopy (MFM)
- Nanomechanical and nanoelectrical characterization
- Force measurement
- Topography imaging
- Phase imaging
- Biomaterial imaging
- In-situ biological imaging
- Bioheater
- Fluid cell
- Herzan acoustic enclosure and antivibration table

Applications:

- Polymers
- Thin films and coatings
- Piezoelectrics and ferroelectrics
- Graphene and 2D materials
- Cell and tissues
- Food science
- Energy storage

For more information on the AFM technology:

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