23 October 2015

In 2014, the NAno-Raman Molecular Imaging Laboratory (NARMIL) was established by an NSF Major Research Instrumentation (MRI) grant. SoMAS Professor Gordon Taylor, a marine molecular microbiologist, is the Director and Associate Professor Daniel Knopf, an atmospheric chemist and microphysicist, is Associate Director. We happily welcome Tatiana (Tanya) Zaliznyak as our new Raman-AFM Specialist, a trained physicist with extensive experience in spectroscopic techniques that greatly enrich NARMIL's capabilities. She enables NARMIL to extend its unique services to researchers across the SBU campus, on other campuses and within industry.

NARMIL is home to a state-of-the-art Renishaw inVia Confocal Raman Microspectrometer (CRM) and a Bruker Innova Atomic Force Microscope (AFM). The CRM is equipped with 3 lasers (457/514, 633, and 785 nm) and an environmental Linkam hot/cold stage. Raman spectra can be acquired in single point, high-speed Streamline™ or mapping modes with <0.1 μm step-size. Transmitted, reflected, bright field, dark field, and epifluorescent (DAPI, FITC, CY3, and CY5 filter sets) images are obtained directly through the CRM prior to Raman interrogation. The AFM can literally image macromolecules, resolving down to <0.1 nm, under standard laboratory conditions. These instruments can be operated independently or coupled to co-localize laser beam and AFM tip thereby enhancing resolution of Raman chemometric maps to <20 nm. The coupled instruments can also produce Tip-Enhanced Raman Scattering (TERS), amplifying weak Raman signals by orders of magnitude. These instruments offer high performance, reliability, and user-friendly operating systems. For more information, visit http://you.stonybrook.edu/nanoraman/.

NARMIL supports research in marine, atmospheric, environmental, biological, chemical, geological, and materials sciences, and biomedical engineering, and is open to other applications. The lab provides expertise for analyses of single cells, tissues, aerosols, natural and engineered surfaces, minerals, biofilms, engineered thin films, and novel synthetic materials. The lab's vision is to offer unique analytical solutions to chronic limitations experienced in many research areas, to enable transformative discoveries, and to educate the next generation of scientists.

NARMIL is now open for business and we look forward to serving the scientific community. Please contact us for consultation about your application, pricing, and scheduling analyses.

Phone: 631.632.3146

email: NARMIL@stonybrook.edu

"Answers through the Process of Illumination"