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# RAMAN SPECTROSCOPY LABORATORY (RSL)

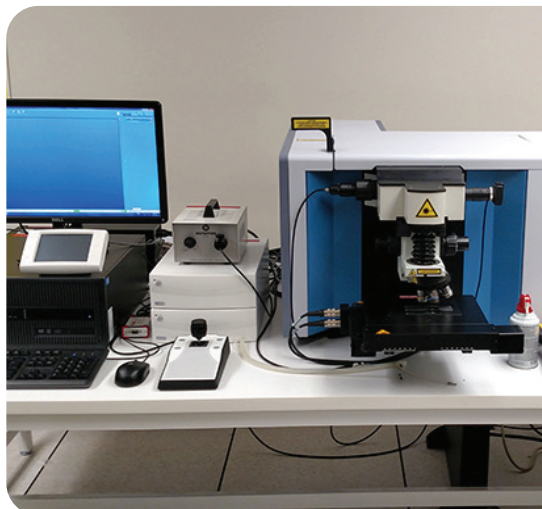
## LABORATORY INFORMATION FACT SHEET

### CONTACT US:

Technology Transfer Office

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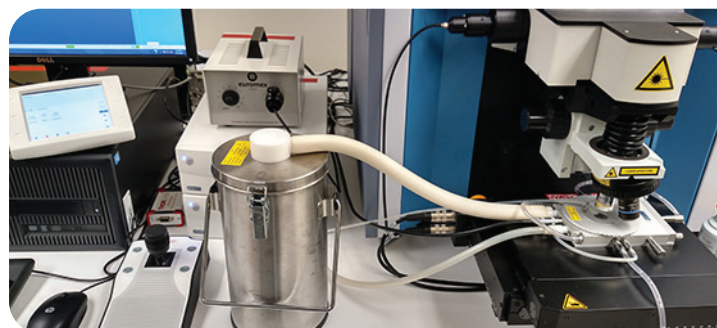


*The Precision Armaments & Intelligent Sensors Division of the Fuze & Precision Armaments Directorate has established the Raman Spectroscopy Laboratory (RSL) to provide the capability to investigate the electronic properties of novel materials, characterize nanomaterials and investigate the structure and stoichiometry of other unknown/unverified materials.*

### TECHNOLOGY/FACILITY DESCRIPTION:

The RSL is equipped with a state-of-the-art, high resolution, fully

confocal Raman Spectroscopy system. The system includes both 633 and 532nm laser excitation wavelengths, 1800 and 600 groove/mm diffractive gratings, a range of neutral density filters ranging from 100% to 0.01%, several achromatic objectives for microscopic visualization of samples, a fully-automated XY mechanical stage and data acquisition software package complete with post-processing capabilities. The spectrometer system is also equipped with a heating and cooling stage that allows for temperature-dependent measurements ranging from -196 (liquid nitrogen) to 600 degrees Celsius. The laboratory is also equipped with an atomic force microscope with magnetic and electric field force capabilities and a laser power meter with digital interface to a computer.



### EQUIPMENT AND EXPERTISE AVAILABLE:

- Horiba LamRAM HR Evolution Raman Spectrometer
- Angstrom Advanced Vibration-Isolated Atomic Force Microscope with Magnetic and Electric Field Force Microscopy capabilities
- Linkam Heating/Cooling stage for temperature-dependent Raman measurements
- Vacuum storage
- ThorLabs laser power meter with digital interface to a computer
- Laboratory expertise includes excellence in investigating Raman and photoluminescence properties of electronic and structural materials
- Laboratory scientists are well-versed in sample preparation, data analysis, as well as other characterization techniques such as atomic force microscopy