IMAGING RAMAN SPECTROSCOPY AT HIGH RESOLUTION

PATRICK J. TREADO, *ChemIcon Inc., Pittsburgh, PA 15208*.

Raman spectroscopy has undergone a renaissance in the past several years due to key enabling technologies, including lasers, multichannel imaging detectors, and high performance Rayleigh scattering rejection filters. More recently, liquid crystal tunable filters (LCTF), a new class of electro-optic imaging spectrometer technology has been demonstrated. The LCTF is impacting the field of imaging Raman spectroscopy based in large part on the spatial/spectral resolving power of the spectrometer when combined with microscope optics. Spatial resolution at the theoretical limit (<250mn) and high spectral resolution (<0.1 cm^{-1}) have been shown. Raman LCTF principles will be discussed, as well as applications to a broad range of materials, including polymers, semiconductors, martian meteorites and human tissues.