Raman imaging : techniques and applications

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Abstrak

Raman imaging has long been used to probe the chemical nature of a sample, providing information on molecular orientation, symmetry and structure with sub-micron spatial resolution. Recent technical developments have pushed the limits of micro-Raman microscopy, enabling the acquisition of Raman spectra with unprecedented speed, and opening a pathway to fast chemical imaging for many applications from material science and semiconductors to pharmaceutical drug development and cell biology, and even art and forensic science. The promise of tip-enhanced raman spectroscopy (TERS) and near-field techniques is pushing the envelope even further by breaking the limit of diffraction and enabling nano-Raman microscopy.