

**101-037**

**AFM-RAMAN AND FLUORESCENCE IMAGING (FLIM) APPLIED ON ADVANCED OPTICAL SPECTROSCOPY TO NANOMATERIALS SCIENCE & ENGINEERING CHARACTERIZATION**

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This course will be focused in Optical Spectroscopy applied to Materials, Nanomaterials Science and Engineering. Theory, application and instrumentation will be the main subjects. The main topics will be: AFM-Raman: Applied to measurements of lattice modes of superconductors in nanoscale, longitudinal acoustic modes of nanopolymers (LAM), boson peaks of glassy structures, biomaterials vibrational modes and information of pharmacy compounds polymorphism. TERS imaging with a resolution down to 10 nm a reality for all. Especially efficient for probing 2D materials like graphene oxide and 2D TMDCs like MoS<sub>2</sub> and WS<sub>2</sub>. Fluorescence Imaging (FLIM): Characterization of biomaterials and nanomedicine, applications examples can be the measurement of intracellular pH, Ca<sup>2+</sup> ratio, oxygen saturation, in vivo monitoring intrinsic proteins, such as NADH, FLIM with FRET (Förster Resonance Energy Transfer) – protein interactions with high spatial and temporal resolution. HORIBA has a great pleasure to stay at the cutting-edge of technological innovation and invite the scientific community to Explore the Future.