



The Characterization Laboratories Center

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Laboratories Center

The **Characterization Laboratories** at IKI serve as a support center for innovation and excellence in research by providing up-to-date technologies and cutting edge infrastructure for characterization analysis. The equipment is operated by professional technicians and supervised by an IKI faculty member. The Center promotes cooperation with industry by offering scientific and analysis solutions to hi-tech companies and others.

Equipment and Infrastructure

The Characterization Laboratories include the equipment for the following analyses:

Surface Analysis

- Scanning probe microscopy (SPM)
- X-ray photoelectron spectroscopy / auger electron spectroscopy (XPS/AES)
- Grazing incidence small angle x-ray scattering (GISAXS)

Spectroscopy

- Raman
- Fourier transform infrared spectroscopy (FTIR)
- FTIR polarization modulation measurements (solid and liquid samples)
- FTIR imaging microscopy
- Electron spin resonance (ESR)
- Fluorescence spectroscopy

Electron Microscopy

- Analytical transmission electron microscopy (A-TEM)
- Cryo transmission electron microscopy (Cryo-TEM)
- Ultra-high resolution scanning electron microscopy (UHR-SEM; EDS)
- Scanning electron microscopy (EDS)



X-Ray Analysis

- Powder x-ray diffraction
- Thin-film x-ray diffraction
- High resolution x-ray diffraction (double and triple-crystal geometry)
- Small and mid-angle x-ray scattering (SAXS)
- Wavelength dispersive x-ray fluorescence analysis (XRF)

Biophysical Characterization and Advanced Light Microscopy

- Total internal reflection fluorescence microscopy (TIRF)
- Near-field scanning optical microscopy (NSOM)
- Spinning disc confocal microscopy
- Imaging ellipsometry and Brewster angle microscopy
- Refractometry
- Contact angle measurements

Mass Spectrometry and Chromatography

- Orbitrap mass spectrometer
- MALDI-TOF mass spectrometer
- LC-MS GC-MS

Light Scattering

- Dynamic light scattering (DLS)
- Static light scattering (SLS)
- Zeta potential measurements

Thermal Analysis

- Differential scanning calorimetry (DSC)
- Thermogravimetric analysis (TGA)
- Micro DSC
- Isothermal titration calorimetry (ITC)

Cell Imaging and Manipulation

- Laser capture microscope
- Flow Cytometry
- FACS
- Imagestream