

# SURFACE ANALYSIS

## Equipment

### Spectroscopic instruments:

- FTIR Nicolet Nexus with micro-ATR Thunderdome
- IR-microscope Spectratech IR-plan (for opaque objects approx  $>10\ \mu\text{m}$ )

### Microscopic tools and instruments:

- Scanning electron microscope JEOL JSM-35 with energy dispersive X-ray equipment Link AN 10000 detecting all elements more heavy than boron.
- Light microscope Leica DMRM with magnification 35-500x, equipped with camera and imaging system Leica Q500 MC for imaging processing and analysis. Fluorescence illumination and several contrasting techniques, such as bright-field/dark-field, phase, polarisation and interference contrasts are available.
- Leica Sledge microtome for preparation of thin sections ( $1-40\ \mu\text{m}$ ) or smooth surfaces for microscopy studies.

### Instruments for studies of the surface chemistry:

- Dynamic contact angle apparatus FTÅ200, that can measure surface tension and penetration into porous surfaces
- Maximum bubble pressure apparatus SITA t60 for measurements of dynamic surface tensions on liquids.
- Tensiometer K10T from Krüss with both De Noüy and Wilhelmy plate

### Chemical techniques:

- Several types of spot tests can be done using different reagents for identification of species on surfaces.

### Example of available techniques in collaboration with other laboratories:

- ESCA (XPS) (analysis depth 3-5 nm)
- ToF-SIMS (analysis depth ca 1 nm)