

## LABORATORY OF SPECTROSCOPY AND THERMAL ANALYSIS

### Description of main activities:

Diagnostic and analytical methods for material research, optical spectroscopic methods, resonance spectroscopies – EPR, NMR, X-ray analysis, thermal analysis. Research is focused on the behavior of the redox active metals in biological systems, particularly on the metal induced oxidation stress leading to biomolecular damage. Additionally, synthesis, structure and physicochemical properties of coordination compounds with biologically active ligands will be studied using spectroscopic methods (EPR, NMR, UV-VIS, IR, Raman), X-ray analysis and theoretical ab initio calculations.

### Equipment available:

- EPR spectrometers EMX (X-band) and EMX-Plus (X- and Q-band) from Bruker,

- Raman spectrometer MultiRAM with microscope RamScope III (Bruker),
- Diffractometer STOE STADIVARI with 4-ring goniometer,
- Diffractometer Gemini R (Oxford Diffraction),
- Potentiostats/galvanostats HEKA PG284 and PG390 (HEKA Elektronik),
- UV-Vis-NIR spectrophotometer AvaSpec-2048x14-USB2 (Avantes),
- NMR spectrometer VNMR5 600 MHz (Varian),
- UV-Vis-NIR spectrophotometer UV3600 (Shimadzu),
- DSC calorimeters DSC 8500 and DSC 7 (PerkinElmer), DSC 60 (Shimadzu),
- DTA/TG calorimeter Exstar Seiko 6300,
- FT-IR spectrometer NICOLET NEXUS 470 (Thermo-Nicolet).

### CONTACT

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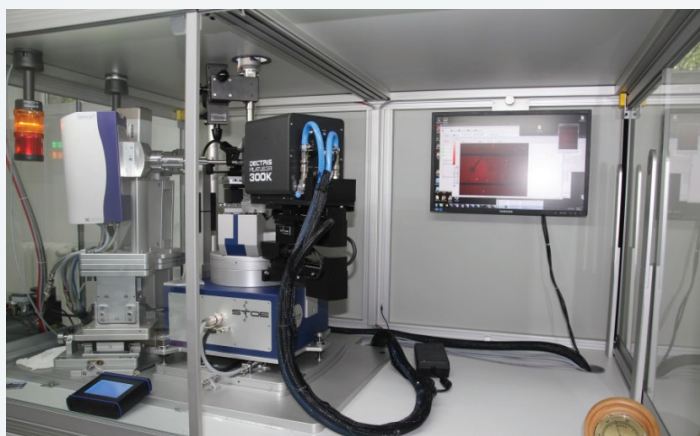
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EPR spectrometer EMX-Plus, X- and Q-band



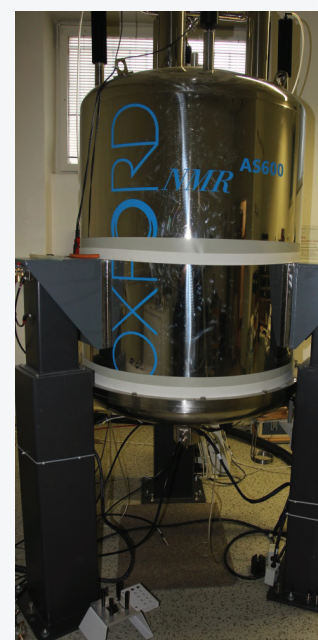
Raman spectrometer MultiRAM with microscope RamScope III



Diffractometer STOE STADIVARI with 4-ring goniometer



DSC calorimeter  
DSC 8500



NMR spectrometer  
VNMR5 600 MHz