

**Advanced Electroanalytical Methods II**  
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**Electrochemistry of Surface Confined Species**

- The ideal case (Langmuir isotherm) and deviations
- Diffusion-reaction processes
- Bio-electrochemistry

**Local Electrochemistry**

- Electrochemistry at microelectrodes
- Scanning electrochemical microscopy
- Beyond classic scanning electrochemical microscopy

**Electrochemistry at the Nanoscale**

- Mass transport & kinetics at heterogeneous electrodes
- Applications of nanoparticle-modified electrodes
- Single-Nanoparticle Electrochemistry

**Electrocatalysis – Theory and Application**

- Electrocatalysis - theory and practice
- Methods in electrocatalysis research (DEMS, ICP-MS, FTIR, Raman, etc)
- Applications (Electrochemistry and Electrocatalysis of CO<sub>2</sub>, O<sub>2</sub> and H<sub>2</sub>)

**Spectro-electrochemistry**

- Coupling EPR, UV-Vis, IR, Raman spectroscopy with electrochemistry
- Electropolymerization/Conducting polymers
- Correlation between optical properties, energy levels and redox potentials

**Time: Thursday 10:00 - 12:00 - First lecture: Thursday, 12.04.2018, 10 a.m.**

**Room: ND 5/99**

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