

## Seminar Abstracts

April 4<sup>th</sup>  
2023

**Location:**

University of Novi Sad,  
Faculty of Science

Department of chemistry, biochemistry and environmental protection  
14/V

### **Environmental Biodegradation and Biotransformation of Organic Chemicals: applying LC-MS/MS and related analytical approaches**

*Seminar by Ass.-Prof. Dr. Michael Zumstein*

While synthetic chemicals play important roles in numerous aspects of human societies, their release into environmental systems has become a major concern. We apply analytical chemical tools to assess the pathways and kinetics of the biotransformation of organic chemicals in chemical-receiving environments. The overall goal of this research is to improve our understanding of the environmental fate of relevant chemicals and to inform the development of biodegradable – and thus environmentally benign – chemicals. The focus of this seminar will be on the biodegradation of polymers in agricultural soils and on the biotransformation of small-molecule pharmaceuticals in wastewater systems.

### **Fate of DNA & dsRNA in Soils: Interaction with Minerals and Biodegradation**

*Seminar by Dr. Katharina Sodnikar*

Biomolecules, including nucleic acids, may be stabilized in soils through adsorption to mineral surfaces. While adsorption of DNA to minerals has been studied in some detail, adsorption of double-stranded RNA (dsRNA) to minerals is less well understood. However, knowledge on dsRNA adsorption is critical because dsRNA molecules are used as novel insecticides in agriculture and therefore enter soil environments. Within the ecological risk assessment of dsRNA-based insecticides, it is essential to obtain a detailed understanding of their fate in soils, including adsorption to and desorption from soil particle surfaces, as well as biodegradation. In this seminar, laboratory studies on these fate processes will be presented and discussed.