



FACULTY OF
SCIENCE
Charles University

Department of Physical and Macromolecular chemistry

www.natur.cuni.cz/chemie/fyzchem

Department of Physical and Macromolecular Chemistry
invites you to a seminar and a lecture

Paramagnetic NMR - the glimpse into the toolbox for material and catalyst characterization

Lecture hall CH3, Faculty of Science, Hlavova 8, Praha 2
on February 28th, 2024 at 14:00

speaker: RNDr. Jan Blahut, Ph.D.

(Institute of Organic Chemistry and Biochemistry, Czech Academy of Sciences)

Nuclear Magnetic Resonance (NMR) has evolved into a widely applicable characterization technique across for organic chemistry, materials science, and structural biology. However, its utility faces challenges when applied to paramagnetic systems, such as organometallic catalysis or functional materials like Metal-Organic Frameworks (MOFs). Presence of the open-shell metal center introduces complexities that complicate the application of conventional NMR techniques, manifesting as paramagnetic line broadening and anomalous NMR shifts, which can be discouraging for regular users.

In this instructional lecture, I aim to present methodologies designed to mitigate or entirely eliminate undesirable paramagnetic effects encountered in NMR spectroscopy of paramagnetic systems. Special emphasis will be placed on solid-state samples, particularly focusing on Ni(II)-based MOFs, as well as catalytic systems employing Fe(II) and Cu(II) studied under magic-angle spinning conditions.



Organizers: Prof. Tomáš Obšil, Dr. Ondřej Sedláček

Department of Physical
and Macromolecular Chemistry
Faculty of Science, Charles University,
Albertov 6, Prague 2
128 44, Czech Republic

Head of Department:
Prof. RNDr. Tomáš Obšil, Ph.D.
obsil@natur.cuni.cz
T: +420 221 951 289

IČO: 00216208
DIČ: CZ00216208