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VABILO NA PREDAVANJE
V OKVIRU DOKTORSKEGA ŠTUDIJA
KEMIJSKE ZNANOSTI

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z naslovom:

**Investigation of the multi-scale dynamics of
complex systems using NMR**

**v sredo, 9. 12. 2020 ob 15. uri,
preko spletnega orodja Zoom**

[https://uni-lj-
si.zoom.us/j/91556389863?pwd=MnNlMmdzSDBBemtFbVp
5OXN2TWV5QT09](https://uni-lj-si.zoom.us/j/91556389863?pwd=MnNlMmdzSDBBemtFbVp5OXN2TWV5QT09)

(Meeting ID: 915 5638 9863, Passcode: 763460)

Vljudno vabljeni!

Abstract:

Complex systems (ionic liquids, proteins, polymer solution and melt, colloidal dispersion, confined liquids, etc.) are subjected to various dynamical processes at different times and space scales. To obtain a deep understanding on these systems, it is important to characterize the different dynamical processes and their relationship. From this perspective, Nuclear Magnetic Resonance (NMR) can bring important insight. Combining the various tools provided by NMR - NMR relaxation, NMR exchange, Pulsed Field Gradient NMR, MRI - it may possible to explore almost ten orders of magnitude in time from the nanosecond up to seconds.

The lecture will present these tools with a deeper focus on Fast Field Cycling (FFC) NMR relaxometry technique. While standard NMR relaxation experiments are performed at one fixed field, the Fast Field Cycling (FFC) method allows one to span the NMR frequency range from 10 kHz to 40 MHz (^1H frequency). The relaxation mechanism being driven by the dynamics of the spin within its environment, varying the magnetic field means tuning the temporal observation window of the dynamical process. The potentiality of this technique will be illustrated with several examples: solution of proteins, tempera paint, cements...