

Diploma / Master's thesis

Synthesis and consolidation of W-type ferrites

Synthesis and consolidation of W-type ferrites focuses on the preparation of W-type hexaferrite powders and their densification into bulk magnets with controlled phase composition and microstructure. The thesis would investigate suitable synthesis routes, such as sol-gel synthesis, followed by consolidation techniques to achieve high density while preserving the desired ferrite structure. Special attention will be given to the relationship between processing parameters, grain growth, phase purity, and magnetic properties. The goal is to develop an optimized processing route for W-type ferrites and to understand how synthesis and consolidation influence their structural and functional performance, which is important for applications in permanent magnets, microwave devices, and electromagnetic components.

The work will take place at the Department of Nanostructured Materials at the “Jožef Stefan” Institute under the mentorship of dr. Petra Jenuš Belec.

For the details, send an email to petra.jenus@ijs.si.