



Open MSc position: “Development of advanced Nd–Fe–B magnets for energy-efficient e-mobility”

Topic description: E-mobility is emerging as a key pillar of green technologies that will facilitate the transition toward a sustainable society with a reduced carbon footprint and an increased emphasis on circular-economy principles. Nd–Fe–B permanent magnets constitute critical components of high-efficiency electric motors and generators, including those employed in wind-energy systems. The energy efficiency of such devices is governed by the chemical composition and microstructure of the magnets, while their optimization is strongly influenced by the processing route. The proposed research will focus on the development of a novel rapid consolidation technique for optimized magnetic powders, with the objective of tailoring the microstructure and thereby enhancing the magnetic performance. In the longer term, this approach is expected to reduce the consumption of critical raw materials and to provide improved control over diffusion processes during sintering, as well as over the resulting phase composition of the magnets.

Requirements for candidates:

- Bachelor’s degree in Natural Sciences
- Enrolment in master’s study course in Natural Sciences
- Knowledge of English

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