

## Open MSc position: “Optimization of strip casting for Nd–Fe–B magnets with reduced rare-earth content”

Nd–Fe–B magnets are key components in energy-efficient technologies, but their high rare-earth (RE) content presents sustainability challenges. Reducing RE content while maintaining performance is therefore an important research goal. Strip casting is a critical step in magnet production, as it controls the microstructure of the flakes and thus the final magnetic properties. For Nd-lean compositions (RE  $\approx$  30%), precise control of processing parameters is essential.

The proposed research will focus on optimizing strip casting parameters such as wheel speed, melt temperature, tundish geometry and inclination, and cooling conditions. The student will study how these parameters influence flake microstructure and quality. The work includes experimental trials, microstructural analysis, and establishing processing–structure relationships for improved Nd–Fe–B materials.

### **Requirements for candidates:**

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

For more information please contact: [benjamin.podmiljsak@ijs.si](mailto:benjamin.podmiljsak@ijs.si)

Ljubljana, 2.4.2026