UNIVERSITÄT DUISBURG ESSEN

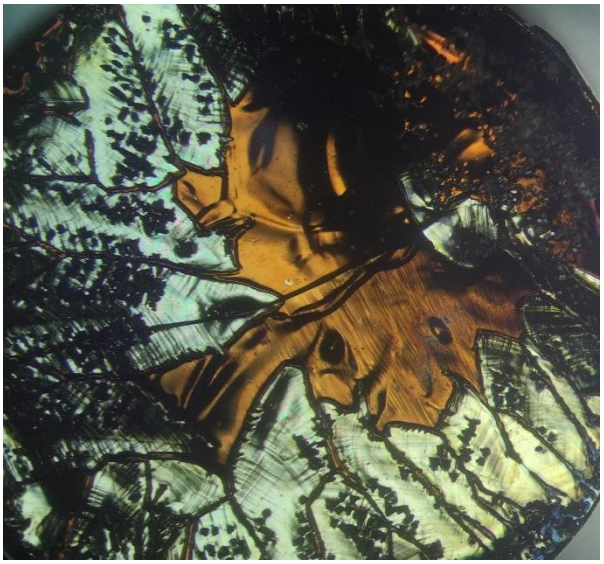
*Offen im Denken*

EMPI Institut für Energie- und Material-Prozesse

# Bachelor thesis/Master thesis

## Growth of single crystals using the Bridgman method and investigation of growth parameters

Iron-nickel alloys are currently being investigated as important structural materials in hydrogen technology because they are not prone to embrittlement, both in terms of their structural properties and their electronic transport properties. However, some methods such as neutron diffraction or orientation-dependent electronic measurements require large and high-quality single crystals. The synthesis of such single crystals poses a particular challenge. The aim of this work is to investigate the influence of the pulling speed on the growth of iron-nickel single crystals in the Bridgman process.



**Tasks**

- Growth of iron-nickel single crystals using the Bridgman process with different growth parameters
- Preparation of metallographic samples (sawing, grinding, polishing, etching) and evaluation under a light microscope

**Requirements**

- Degree in engineering or physics
- Careful and thorough way of working
- Enjoy experimental work

**Contact us**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**Start**

- Immediately or by arrangement