

DI Dr. Heiko Groß
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WE ARE SEARCHING FOR A PHD STUDENT (F/M/D)

at the Center for Surface and Nanoanalytics, Johannes Kepler University Linz for the topic

ELECTRON DIFFRACTION FOR NANOSCALE PRECIPITATES IN MODERN STEEL SYSTEMS

Project and role

- Conducted within ZONA's mission to uncover nanoscale principles governing macroscopic material behaviour.
- Addresses practical demands of technical steel samples and multilayer coating systems in close collaboration with voestalpine Stahl GmbH.
- Develop reliable workflows to relate nanoscale structures to properties in steel and steel coating systems, leveraging our correlative electron microscopy and spectroscopy toolbox.
- Optimize experimental methods: SEM-based methods - EBSD, TKD; TEM techniques - HRTEM, NBD, PED, 4DSTEM.
- Apply post-processing via pattern correlation and Python-based analysis/visualization.
- Connect nanoscale observations with mechanical and production-relevant behaviour.

Your profile

- Master's/Diploma in Materials Science, Metallurgy, Physics, Chemistry, or related field.
- Familiarity with microstructures of advanced steels and/or electron microscopy.
- Experience in Python-based data analysis and visualization (e.g., HyperSpy, pyxem).
- Excellent written and spoken English; basic German is an advantage.
- Strong interest in fundamental materials behaviour and its engineering implications.
- Willingness to engage with industrially relevant problems and datasets.
- High personal commitment; ability to work independently and in a team.

What we offer

30 hours/week, 3-year position; minimum salary €2,832 gross/month (14× per year, CA Job Grade: B1). Attractive campus with good public transport, state-of-the-art research infrastructure in a dynamic environment.

Applications

Deadline 26 April 2026. Submit a single PDF via email to heiko.groiss(at)jku.at including: Motivation Letter (max. 2 pages, English); CV (max. 3 pages, English) with contact details of references and previous scientific achievements.

Info and contacts

Heiko Groß, heiko.groiss(at)jku.at and Philipp Kürnsteiner, philipp.kuernsteiner(at)jku.at and see <https://www.jku.at/en/center-for-surface-and-nanoanalytics-zona/cdl-n-phase/>.