

Faculty of Mechanical Engineering, Silesian University of Technology announces a competition for a research scholarship in the OPUS-26 (LAP) project entitled: *Experimental and numerical explanation of solidification behavior, hot deformability and brittleness phenomena in lightweight high-Mn and medium-Mn ferrous alloys*, project no. 2023/51/I/ST11/01499; principal investigator: Prof. Ph.D. Eng. Adam Grajcar.

Name of the institution: Silesian University of Technology, Faculty of Mechanical Engineering

Position: scholarship holder; student / PhD student

Requirements:

1. Status of a third (PhD) or second-degree (MSc) student with a materials engineering or related profile
2. Strong motivation for research, reliability, meticulousness, diligence and responsibility for the assigned work
3. Knowledge of issues regarding:
 - Advanced high-strength multi-phase steels for the automotive industry
 - Phase transformations in steels, including the TRIP effect
 - Thermodynamic calculations of phase equilibrium and microstructure evolution,
 - Microsegregation and solidification behavior in metallic alloys.
4. Good skills of operating laboratory equipment / software, including:
 - thermodynamic calculations (ThermoCalc or JMatPro or similar),
 - preparing samples for observations using a light microscope and SEM,
 - analysis of non-metallic inclusions and microsegregation in cast alloys.
5. Ability to work independently and in a research team
6. Very good knowledge of English, spoken and written
7. Research experience confirmed:
 - Completed research internship or training in research techniques,
 - Authorship/co-authorship of publications in scientific journals or conference materials or presentation of research results at conferences.

Description of tasks:

The duties of the scholarship holder will include:

- Experimental work (preparation of metallographic samples for testing, structural identification using LM and SEM),
- Thermodynamic calculations using ThermoCalc and JMatPro,
- Performing the analyses of microsegregation issues and non-metallic inclusions,
- Analysis of research results,
- Preparing publications in English,
- Presenting research results during national or international scientific conferences.

NCN competition type: OPUS-26 (LAP) – ST11

Deadline for submitting application: February 21st, 2025, 23:59 p.m

Competition decision deadline: February 24th, 2025

Form of submission: e-mail

Conditions of employment:

Scholarship: PLN 5000 / month

Commitment period: 12 months

Start date: March 2025

Additional information:

It is possible to conduct an interview with selected candidates. Candidates will be notified electronically about the possible date of the interview.

The work is related to the implementation of a research project titled: *Experimental and numerical explanation of solidification behavior, hot deformability and brittleness phenomena in lightweight high-Mn and medium-Mn ferrous alloys*, project no.: 2023/51/I/ST11/01499, principal investigator: Prof. Ph.D. Eng. Adam Grajcar.

The application should include:

- A cover letter containing a reference to the tasks presented in the advertisement,
- CV with a list of scientific achievements (participation in conferences, training, scientific publications, distinctions, awards, etc.),
- A copy of the diploma or diplomas confirming education.

The CV must be accompanied by consent to the processing of personal data: "I consent to processing of my personal data included in recruitment documents by Silesian University of Technology headquartered in Gliwice for the purposes necessary to carry out the current recruitment process".

The documents should be delivered by email (in one PDF file) to the principal investigator's email address: adam.grajcar@polsl.pl. In the subject of the email, enter: scholarship holder 1 in the NCN OPUS-26 project (LAP).

Candidates will be selected and involved in the implementation of the project in accordance with the Regulations for awarding research scholarships in research projects financed by the National Science Center specified in the annex to the resolution of the NCN Council no. 25/2019 of March 14, 2019. The scholarship holder will be selected by a competition committee chaired by the principal investigator, Prof. Ph.D. Eng. Adam Grajcar.