

PhD offer in OPUS (NCN)

Poznan University of Technology, Faculty of Chemical Technology, Institute of Chemistry and Technical Electrochemistry – Poznan

Requirements:

1. MSc in Chemical Technology (specialising in electrochemistry).
2. Advanced knowledge of the fundamentals of electrochemistry in the field of electrochemical energy sources and electrochemical corrosion phenomena.
3. At least one patent application or one scientific publication related to the study of the electrochemical corrosion phenomena.
4. Knowledge of Office, AutoCAD® and EC-Lab® (BioLogic) software.
5. Advanced level of English (at least C1).
6. The successful candidate will be required to enrol in the Doctoral School of Poznan University of Technology.
7. Professional attitude and self-motivation.

Task descriptions:

Investigation of the kinetics and thermodynamics of electrochemical corrosion phenomena of hydrogen storage alloys in alkaline electrolytes with ionic liquids. Electrochemical investigation of alloy operating parameters (e.g. capacity). Determination of the conductivity of alloyed materials using electrochemical techniques. Investigation of the kinetics of electrode reactions using a rotating disc electrode. Use of a salt chamber to characterise the anticorrosive properties of hydrogen storage alloy materials in a salt atmosphere and at different temperatures according to ISO 9227. Conducting electrochemical research in a climatic chamber at different temperature ranges. Use of a quartz crystal microbalance. Corrosion tests on hydrogen storage alloy materials modified with palladium nanoparticles. Analysing and processing experimental data. Preparation of scientific reports, scientific publications and doctoral thesis. Participation in scientific conferences.

The scope of duties is part of the research carried out in the project funded by the National Science Centre (OPUS 21 call). Project number: 2021/41/B/ST5/04047 "H-ionic: Ionic liquid-based electrolytes for charging hybrid, hydrogen storage systems".

The project leader is Andrzej Czewiński (University of Warsaw).

The project leader on the Poznan University of Technology side is Grzegorz Lota.

Type of the National Science Centre competition:

OPUS

Deadline for submission of tenders:

13 September 2023

Tender submission form:

Tenders should be sent by post to the following address:

Grzegorz Lota

Poznan University of Technology
Institute of Chemistry and Technical Electrochemistry
Berdychowo 4
60-965 Poznan
Poland

Employment terms and conditions:

Doctoral student receive a scholarship of 3882 PLN gross per month (including the doctoral scholarship and the NCN scholarship) until mid-term evaluation and 4110 PLN gross after the positive mid-term evaluation.

The duration of the grant is currently 28 months, with the possibility of an extension to 36 months (due to the planned extension of the project deadline).

Additional information:

Documents required:

1. Curriculum Vitae;
2. Covering letter;
3. Copy of Master's degree;
4. Letter of recommendation from Master's thesis supervisor;
5. Certificate confirming advanced level of English (at least C1).

Please attach the following statement to your application:

I consent to the processing of my personal data for the purposes of the recruitment process.

Please include the candidate's e-mail address in the CV.

The recruitment process consists of two stages. First, a committee of three academics from Poznan University of Technology and University of Warsaw will select the offers received. In the second stage, candidates who successfully pass the first stage will be invited to an interview where they may be asked to publicly present the results of their previous research. One of the members of the recruitment committee will be the project leader from Poznan University of Technology.

Approximate deadline for recruitment results: 26 September 2023.

Start date: 2 October 2023