ANNOUNCMENT OF AN OPEN POSITION OF A DOCTORAL SCHOLARSHIP RECIPIENT UNDER THE NCN DAINA 3 RESEARCH PROJECT „Unraveling the Mechanisms of Functionalized Biochar in the (Im)mobilization and Transformation of Potentially Toxic Metal(loid)s in Soil-Plant Systems for Climate Resilience"

Department: Silesian University of Technology (SUT), Faculty of Energy and Environmental Engineering, Department of Technologies and Installations for Waste Management
Location: Konarskiego Street 18, Gliwice, Poland
Project Title: Unraveling the Mechanisms of Functionalized Biochar in the (Im)mobilization and Transformation of Potentially Toxic Metal(loid)s in Soil-Plant Systems for Climate Resilience
Funding: DAINA, National Science Center (NCN) Poland
Grant Number: UMO-2024/52/L/ST10/00263
Internal Grant Number: 08/030/PMN25/0152
Position: PhD-student intern
Scholarship period: 3 years from 1st March 2025
Scholarship amount: 2500 PLN per month

Position Overview:
We are pleased to announce a fully-funded Ph.D. position in the research project "Unraveling the Mechanisms of Functionalized Biochar in the (Im)mobilization and Transformation of Potentially Toxic Metal(loid)s in Soil-Plant Systems for Climate Resilience." This project explores the cutting-edge intersection of environmental chemistry, soil science, and climate resilience, aiming to develop innovative biochar-based solutions to mitigate the impacts of metal(loid) contamination in soil-plant systems. The successful candidate will investigate the mechanistic pathways through which functionalized biochar interacts with potentially toxic metal(loid)s to achieve (im)mobilization and transformation in contaminated soils. Key objectives include:

- Evaluating the physicochemical interactions between biochar and metal(loid)s under varying soil conditions.
- Assessing the impact of biochar amendments on metal(loid) uptake and toxicity in plants.
- Investigating the role of biochar in enhancing soil health and improving the resilience of soil-plant systems to climate stressors.
- Developing scalable strategies for sustainable agricultural practices and contaminated land management.

Key Responsibilities / tasks description:
As part of the DAINA-funded project under NCN, led by Dr. Balal Yousaf, the Ph.D. student will play a critical role in advancing the research objectives of the project, "Unraveling the Mechanisms of Functionalized Biochar in the (Im)mobilization and Transformation of Potentially Toxic Metal(loid)s in Soil-Plant Systems for Climate Resilience." Key tasks and responsibilities include:

- Design and conduct laboratory and field experiments to study the interactions of functionalized biochar with potentially toxic metal(loid)s in contaminated soils.
- Characterize biochar and soil samples using advanced analytical techniques (e.g., FTIR, SEM-EDS, XRD, XPS, ICP-MS).
- Evaluate the impact of biochar amendments on plant growth, metal(loid) uptake, and toxicity under various soil conditions.
- Assess the potential of biochar to enhance soil health and climate resilience in agricultural systems.
- Analyze experimental data to identify key trends and mechanistic pathways.
- Collaborate with an interdisciplinary research team, including soil scientists, environmental chemists, and agronomists, to achieve project objectives.
- Prepare high-quality manuscripts for publication in peer-reviewed journals and present research findings at national and international conferences.

Position Requirements:

1. PhD-student status
2. A Master's degree in Environmental Science and Engineering, or a related discipline.

Additional Requirements:

1. Strong interest in environmental sustainability, soil remediation, and biochar applications.
2. Experience in analytical techniques (e.g., spectroscopy, chromatography) or soil chemistry is highly desirable.
3. Excellent research, analytical, and communication skills.

Research Facilities:

The selected candidate will have access to state-of-the-art research facilities, including: Pyrolysis unit, FTIR, py-GCMS and other routine use equipments.

Application Process (deadline and how to apply): 10.02.2025 23:59. All the required documents must be sent to the PI at the following email ID: balal.yousaf@polsl.pl in single PDF file. Awarding deadline: 13.02.2025.

Required documents:

- A cover letter explaining research experience, interests, and fit for the project
- A detailed CV (in English) with a list of publications, in CV, please include RODO clause regarding the consent to the processing of personal data for the purposes of the recruitment process in accordance with the Act of 29 August, 1997 on the Protection of Personal Data (Journal of Laws of 2015, item 2135, as amended)
- Two academic references, who should send recommendation letters directly to the PI at balal.yousaf@polsl.pl
- Information about completed internships, courses and certificates
- Confirmation of Ph.D. student status

The PhD student intern will be selected by a competition committee appointed by the Vice Rector for Science and International Cooperation.

Only shortlisted candidates will be contacted for further steps in the selection process.

This is an excellent opportunity to join an innovative and dynamic research group that is addressing critical challenges in waste management and environmental sustainability. If you are passionate about waste-to-energy technologies and want to contribute to net-zero emission solutions, we encourage you to apply. For any inquiries, please contact: balal.yousaf@polsl.pl.

Incomplete or late offers will not be considered.
Please be informed that we will contact only with the candidates that meet formal requirements.

Informative clause

According to art. 13 of the Regulation on Personal Data Protection of 27 April 2016, please be informed:

1. The controller of your personal data is the Silesian University of Technology with its registered office at .Akademicka 2A St, 44-100 Gliwice,
2. The Silesian University of Technology has appointed the Data Protection Officer who can be contacted via the email address: iod@polsl.pl,
3. Your personal data will be processed in order to carry out the recruitment process for work at the Silesian University of Technology,
4. the basis for the processing of your personal data is art. 221 of the Labour Code and, if you agree to use your CV in future recruitments at the Silesian University of Technology, art. 6 clause 1 point a of the GDPR Regulation shall apply,
5. only employees authorized to process personal data to the necessary extent will have access to your personal data within the organizational structure of the Silesian University of Technology,

6. Your personal data shall not be disclosed to other entities, except in cases provided for by law,
7. Your personal data shall be stored for the period necessary to carry out the recruitment process or for the next 9 months from the end of the recruitment process, if you authorize the processing of personal data in future recruitment processes,
8. You have the right to request the access to the content of your data and, to the extent provided for by applicable regulations, the right to: rectify, delete, limit processing, raise objections; if you consent to the processing of data, you have the right to withdraw your consent at any time,
9. You have the right to lodge a complaint with the President of the Office for Personal Data Protection, if you feel that the processing of your personal data violates the provisions of the General Data Protection Regulation,
10. providing data is voluntary, but necessary to achieve the purposes for which they are collected.