

JOB OFFER

Position in the project:	<i>PhD student</i>
Scientific discipline:	<i>biotechnology, bioengineering, microbiology, bioremediation,</i>
Job type (employment contract/stipend):	<i>scholarship</i>
Number of job offers:	<i>1</i>
Remuneration/stipend amount/month:	<i>3 800 PLN of full remuneration cost (scholarship)</i>
Position starts on:	<i>01.05.2020</i>
Maximum period of contract/stipend agreement:	<i>36 months</i>
Institution:	<i>University of Warsaw, Faculty of Biology / Warsaw</i>
Project leader:	<i>Prof. Wojciech Franus</i>
Project title:	<i>Fly ashes as the precursors of functionalized materials for applications in environmental engineering, civil engineering and agriculture</i> <i>Project is carried out within the TEAM-NET programme of the Foundation for Polish Science</i>
Project description:	<i>This TEAM-NET joint project assumes using fly ashes as a precursor for the synthesis of novel functionalized materials with the structure of not only zeolites, but also mesoporous silica materials and metal-organic frameworks (MOFs). Then produced materials will be tested for possible applications in agriculture, civil and environmental engineering. With the implementation of new technologies of coal combustion and flue gas treatment, new types of fly ashes with increased content of unburned carbon (up to 30%) have been produced. Such byproducts will be used in this project for the synthesis of novel zeolite-carbon composites. Previous work related to the use of this type of fly ashes was focused on the separate production of zeolites or activated carbons, which did not fully exploit the potential of the above-mentioned byproducts. Their use as a precursor to the synthesis of a zeolite-carbon-vermiculite composite in this project will also pave the way for developing a novel material to replace vermiculite raw materials in agricultural applications.</i> <i>With this announcement we are looking for a PhD student for the work-package #5 entitled "Biopreparations for pollutant removal from water, soil and air". The aim of WP #5 is to develop a series of biopreparations (bacteria immobilized on carriers derived from functionalized materials) to enhance the process of bioremediation of contaminated waters, soils and gases. Selected bacterial strains (proposed by the group leader) need to be analyzed for the following abilities (i) degradation of pesticides and petroleum hydrocarbons, (ii) metabolism of nitric and sulfur oxides, (iii) degradation of volatile organic compounds, and (iv) denitrification of nitrates. Selected strains will then be thoroughly analyzed for their metabolic potential, ability to survive under extreme environmental conditions (e.g. the presence of heavy metals in high concentrations), ability to form biofilms and biological safety. In the next stage, conditions for effective immobilization of the selected strains on the functionalized materials and on natural carriers (e.g. zeolites) will be worked out. The planned R&D work should also include experimental verification of the biopreparations, both ex situ and in pilot bioreactors or directly in industrial tanks.</i>

Key responsibilities include:	1. Development of novel and unique droplet microfluidic techniques for high throughput isolation and characterization of environmental bacterial consortia. Those methods will include microfluidic sorting and cultivation of single bacterium and microbial consortia towards better understating of bioremediation processes. 2. Development of novel methods of single cell genomics and transcriptomics for characterization of the structure of microbial population. For more information please refer to the following publications: Ku C, Seb�-Pedr�s A. 2019, Phil. Trans. R. Soc. B 374:20190098; Kuchina A. et al bioRxiv 869248; TS. Kaminski et al. Lab Chip, 2016, 16, 2168-2187) 3. Selection followed by genetic and phenotypic characterization of microorganisms (bacteria and fungi) capable of transforming inorganic and organic compounds 4. Preparing and writing scientific articles for international journals. 5. Tracking current research trends in the scientific literature.
Profile of candidates/requirements:	1. The candidate must be experienced in the general microbiology and/or molecular biology methods. 2. The candidate must be fluent in English (both speaking and writing). 3. Preferentially, the candidate should know and have an experience in molecular biology methods, especially associated with Next Generation Sequencing (NGS) such as PCR, library preparation, design of primers, basic analysis of sequencing data 4. Experience in microfluidics and programming (e.g. R, Python, LabVIEW, Matlab) is a plus, but it is not required. However, the candidate is expected to learn and use some of these programming skills during the PhD studies.
Required documents:	1. Written application for the competition 2. Curriculum vitae including: 2.1. A detailed description of the academic degrees and titles, titles of theses (bachelor and master, along with short description of main achievements in each thesis – up to 300 characters including spaces), years of receiving the degree/academic title, names and affiliation of supervisors and reviewers of each thesis. 2.2. The academic career – chronological indication of places of employment with the indication of posts and contact details of the direct supervisor. 2.3. List of scientific publications/monographs/books/chapters – including the full list of authors, an indication whether the candidate was the corresponding author of the given publication, title, full title of the journal and 5-year IF. 2.4. Participation in conferences (list of conferences in which the candidate took an active part, stating whether it was a lecture or a poster), internships abroad (research stays), and most important trainings. 2.5. List of awards and distinctions, including their range (international/national) 3. Recommendation letter and address details of the last employer or direct supervisor/ scientists who may recommend the given candidate. 4. Copies of obtained diplomas. 5. Documented information about completed courses and trainings. 6. Other activities (scientific clubs/circles, student conferences). All documents must be prepared in the English language
Please submit the following documents to:	tkaminski@biol.uw.edu.pl and ldrewniak@biol.uw.edu.pl
Application deadline:	11.04.2020

For more details about the position please visit (website/webpage address):	https://www.fnp.org.pl/oferta_pracy http://wbia.pollub.pl/pl/praca http://www.wggios.agh.edu.pl/pracownicy https://www.biol.uw.edu.pl/pl/index.php?option=com_content&view=category&layout=blog&id=148&Itemid=317
Euraxess job/stipend offer (in case of PhD and postdoc positions):	https://euraxess.ec.europa.eu/jobs/502683
Appeal	<i>Possible appeals against the decision should be sent to prof. Wojciech Franus (project coordinator, w.franus@pollub.pl) no later than 7 days after receiving the decision, i.e. the date of results announcement. In the protest an explicit justification have to be included.</i>