

## JOB OFFER

Position in the project:	<i>Technician</i>
Scientific discipline:	<i>biotechnology, engineering, chemistry</i>
Job type (employment contract/stipend):	<i>employment contract (half-time job)</i>
Number of job offers:	<i>1</i>
Remuneration/stipend amount/month	<i>3444 PLN of half-time job remuneration cost, i.e. expected <u>net salary at around 2 000 PLN</u></i>
Position starts on:	<i>16.03.2022 r.</i>
Maximum period of contract/stipend agreement:	<i>18 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>  <b>Project is carried out within the TEAM-NET programme of the Foundation for Polish Science</b>
Project description:	<p><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></p> <p><i>With this announcement, we are looking for a technician 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 analysed for the following abilities (i) degradation of pesticides and petroleum hydrocarbons, (ii) metabolism of nitric and sulphur oxides, (iii) degradation of volatile organic compounds, and (iv) denitrification of nitrates. Selected strains will then be thoroughly analysed 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&amp;D work should also include experimental verification of the</i></p>

	<i>biopreparations, both ex situ and in pilot bioreactors or directly in industrial tanks.</i>
Key responsibilities include:	<ol style="list-style-type: none"> <li>1. <i>Development of novel and unique droplet microfluidic techniques for high throughput isolation and characterization of environmental bacterial consortia.</i></li> <li>2. <i>Implementation and improvement of various microfluidic modules, such as optically activated droplet sorters and pico-injectors.</i></li> <li>3. <i>Design and fabrication of microfluidic devices via lithography and soft lithography.</i></li> <li>4. <i>Support of other research members in the execution of microfluidic experiments.</i></li> </ol>
Profile of candidates/requirements:	<ol style="list-style-type: none"> <li>1. <i>The candidate must have a Master degree diploma in biotechnology, chemistry, physics, engineering or related field.</i></li> <li>2. <i>Practical experience and knowledge about microfluidics is required.</i></li> <li>3. <i>The candidate must have the skills in using techniques such as drawing in AutoCAD, lithography, soft lithography, operation of microfluidic devices and microscopy.</i></li> <li>4. <i>Experience in programming (e.g. R, Python, LabVIEW, Matlab) is a plus.</i></li> <li>5. <i>The candidate should know English (both speaking and writing) at a level enabling efficient communication.</i></li> </ol>
Required documents:	<ol style="list-style-type: none"> <li>1. <i>Short motivation letter.</i></li> <li>2. <i>Curriculum vitae.</i></li> <li>3. <i>Copy of Master Diploma.</i></li> </ol>
Please submit the following documents to:	<a href="mailto:ts.kaminski2@uw.edu.pl">ts.kaminski2@uw.edu.pl</a> and <a href="mailto:ldrewniak@biol.uw.edu.pl">ldrewniak@biol.uw.edu.pl</a>
Application deadline:	03.03.2022
For more details about the position please visit (website/webpage address):	<a href="https://www.fnp.org.pl/oferta_pracy">https://www.fnp.org.pl/oferta_pracy</a> <a href="http://wbia.pollub.pl/pl/praca">http://wbia.pollub.pl/pl/praca</a> <a href="http://www.wggios.agh.edu.pl/pracownicy">http://www.wggios.agh.edu.pl/pracownicy</a> <a href="https://www.biol.uw.edu.pl/ogloszenia-praca/">https://www.biol.uw.edu.pl/ogloszenia-praca/</a>
Appeal	<i>Possible appeals against the decision should be sent to prof. Wojciech Franus (project coordinator, <a href="mailto:w.franus@pollub.pl">w.franus@pollub.pl</a>) 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>