



CeNT-28-2024

Director of Centre of New Technologies of the University of Warsaw, with the approval from the Rector of the University of Warsaw, announces opening of the position of *Postdoctoral Researcher (Adjunct) in the group of researchers in the Laboratory of Solar Fuels– Centre of New Technologies of the University of Warsaw.*

JOB OFFER

Position in the project:	Postdoc (Adjunct)
Laboratory:	Solar Fuels Laboratory
Scientific discipline:	Biological sciences (biology)
Keywords:	Artificial photosynthesis, photosystem I, cytochrome c, biohybrid materials, smart matrix, biophotovoltaics, electron transfer
Job type:	Employment contract
Part-time/full-time:	Full time
Number of job offers:	1
Remuneration amount/month	PLN 10 500 gross gross per month, plus '13th salary' annual bonus
Position starts on:	1 January 2025 or as soon as possible after the date
Maximum period of contract/stipend agreement:	18 months with possibility of extension up to 26 months
Institution:	Centre of New Technologies, University of Warsaw
Project leader:	Dr Margot Jacquet
Project title:	Stimuli-responsive 3D covalent organic materials for solar energy conversion and water detoxification
NCN programme:	SONATA 18
Financing institution:	NCN
Project description: <i>(max 800 characters, including spaces)</i>	<p>The intensive use of fossil fuels responsible to a great extent for global warming and for the increasing amount of environmental pollutants are current global challenges that require to be addressed urgently for the safety and prosperity of the biosphere. To this end, this project aims at developing various stimuli-responsive nanomaterials with improved functionalities for exploitation in two areas: solar energy conversion and water detoxification.</p> <p>The successful candidate will focus on the solar energy conversion part of the project by designing novel biohybrid materials encompassing the smart matrix and the robust extremophilic photosystem I (PSI) as natural light-harvester and charge-separator. The combination of the rationally engineered interface and genetically modified His₆-tagged proteins (PSI</p>



	<p>and cytochrome c) will enable the generation of different photoelectrode configurations (biocathode and bioanode) thanks to a precise control of the proteins orientation. Following the obtention of the biohybrid systems, the candidate will evaluate the benefices of the stimuli-responsive matrix on the biophotovoltaic performances with an in-depth characterization of the electron transfer mechanisms.</p>
Key responsibilities include:	<ul style="list-style-type: none">• Culturing of <i>Cyanidioschyzon merolae</i> microalgae, isolation of thylakoids from liquid cultures, purification and biochemical analyses of native and His₆-tagged Photosystem I (PSI) photoenzyme.• Cloning, purification, and spectroscopic/biochemical characterization of His₆-tagged cytochrome c₅₅₃.• Cross-linking PSI with cytochrome c using zero-length cross-linking agent and/or bio-conjugation of PSI with chromophores.• Bio-functionalization of the modified materials and assessment of the power output by photochronoamperometry.• Potentially genetic engineering of different affinity tags within the <i>C. merolae</i> PSI structure.• Preparation of reports and/or scientific publication• Presentation of the results at internal, national and international conferences
Profile of candidates/requirements:	<p>The competition is open to persons who meet the conditions specified in:</p> <ul style="list-style-type: none">- Article 113 of the Act of 20 July 2018 Law on higher education and science (Journal of Laws of 2023, item 742 with amendments) and the Statutes of the University of Warsaw;- Regulations on the allocation of resources for the implementation of tasks financed by the National Centre of Science for SONATA 18 grant¹; <p>Post-doctoral candidates should:</p> <ul style="list-style-type: none">• hold a PhD in biology, molecular biology, biotechnology, or related discipline with strong expertise in protein expression/purification and genetic modification, as well as bio-conjugation with smart materials.• Proven experience in biochemistry and biophysics of photoenzymes - Protein engineering/covalent modification, heterologous gene expression and protein purification – Experience in HPLC/FPLC protein purification methodology - Absorption and fluorescence spectroscopy techniques - Experience in genetic engineering <p>Previous experiences in materials science and electrochemistry would be an advantage. Due to the international character of the research team, fluent command of spoken and written English is essential. The candidate should hold a PhD degree for no longer than 7 years before the date of signing an employment agreement in the project.</p> <p>The PhD degree should be obtained in a country of the EU, EFTA, OECD or nostrified on the date of employment at the latest².</p>
Required documents:	<ol style="list-style-type: none">1. Cover letter2. Current curriculum vitae3. Copy of PhD certificate or a document confirming that the Candidate

¹ Regulations on the mode of granting financial resources for the completion of tasks funded by the National Science Centre as regards research projects, stipulated by resolution of the NCN Council No. 60/2022 of 9 June 2022

² Unless the candidate meets the requirements described in Art. 116 point 2a of the Act dated 20 July 2018 The Law on higher education and science (Journal of Laws of 2023, item 742)



	<p>will obtain the PhD degree prior to the date of employment in the project</p> <ol style="list-style-type: none">4. List of publications and published conference abstracts5. Two reference contacts6. Signed information on the processing of personal data7. Signed declaration confirming that the candidate has read and accepted the rules of conducting competitions, covered in the following documents: Order of the Rector of UW No. 106 Par. 126 of the UW Statutes Resolution No. 443 of 26 June 2019 International Reporting Procedure
We offer:	<ul style="list-style-type: none">• A friendly and motivating working environment in young and international team• Participation in an multidisciplinary and exciting research project to tackle current global challenges• Work in a modern and well-equipped institute• Opportunity to participate in international conferences funded by the project
Please submit the following documents to:	E-mail: careers@cent.uw.edu.pl with the competition number 'CeNT-28-2024' as the e-mail title
Application deadline:	26 November 2024
Date of announcing the results:	no later than 5 December 2024
Method of notification about the results:	Email, website: https://cent.uw.edu.pl/en/career/

The competition is the first stage of the recruitment procedure for the position of academic teacher specified in the Statutes of the University of Warsaw, and its positive result is the basis for further proceedings. Following an initial screening of the applications, selected candidates will be contacted by e-mail for further recruitment steps.