UNIWERSYTET WARSZAWSKI

CeNT CENTRUM NOWYCH TECHNOLOGII

CeNT-19-2025

Director of the Centre of New Technologies of the University of Warsaw, and the Project Leader, announce the opening of the competition for the position of a PhD Student in the Solar Fuels Laboratory – Centre of New Technologies of the University of Warsaw.

JOB OFFER

Position in the project:	Technician (PhD Student)
Laboratory:	Solar Fuels Laboratory
Scientific discipline:	Biological Sciences, Biotechnology, Biological Chemistry, Organic Chemistry
Keywords:	Artificial photosynthesis; photosystem I; enzyme cascades; electron transfer; solar-to-fuel devices
Job type (employment contract/stipend):	Contract of employment
Part-time/full-time:	Part-time (0,9)
Number of job offers:	1
Remuneration/stipend amount/month:	approx. 8 100 PLN per month (gross salary) plus 13th salary bonus
Position starts on:	1 June 2025 or shortly afterwards
Maximum period of contract/stipend agreement:	28 months
Institution:	Centre of New Technologies, University of Warsaw
Project leader:	Joanna Kargul
Project title:	**SUnlight-driven Next Generation Artificial photosynthesis bio-hybrid TEchnology platform for highly efficient carbon neutral production of solar fuels**
Competition type:	HORIZON-CL5-2022-D3-03-03
Financing institution:	European Commission
Project description:	The successful candidate (background in biochemistry, biotechnology, biological chemistry or organic chemistry) will conduct a PhD project on the construction and in-depth characterization of state-of-the-art biomolecular devices to capture solar light and convert CO_2 to methanol and formate, both products being an important platform chemical and fuel. This highly interdisciplinary PhD project will be conducted under the supervision of Prof. Joanna Kargul at the Centre of New Technologies, University of Warsaw, Poland, in close collaboration with the SUNGATE consortium of 12 partners from six EU countries and Turkey. The final device will combine the principles of artificial photosynthesis with photoelectrocatalysis and microfluidics, leading to the first modular full-cell continuous flow microreactor technology that requires only sunlight (as an energy source) plus water and CO_2 (as simple, abundant feedstock) for conversion into solar fuels such as methanol and formate.

	The SUNGATE technology will not use toxic or critical raw materials, and will combine efficient water oxidation catalysts, with biological components such as photosystem I (PSI) and CO_2-reducing enzymes (CRE), novel CO_2 reducing molecular catalysts (CRC) and nanostructured diamond-based cathodes to radically improve the efficiency of solar-to-fuel conversion.
Key responsibilities include:	Purification of the His-tagged PSI biocatalyst and preparation, characterisation of PSI-CRC and PSI-CRE hybrids. Assembly and performance characterisation of the hybrid devices for solar-driven CO_2-to-methanol conversion in close collaboration with all the partners of the SUNGATE consortium.
Profile of candidates/requirements:	The competition is open for persons who meet the conditions specified in the regulations on the allocation of resources for the implementation of tasks financed by the European Commission within the Horizon Europe SUNGATE grant. MSc degree in the field of **biochemistry, biotechnology, biological chemistry, organic chemistry or a related field.** **Exceptionally well qualified candidates with a BSc (Honours) degree will also be considered.** The MSc/BSc degree should be obtained before the date of starting work in the project; - Confirmed status of a PhD student on the day of starting the work on the project. **Important:** The successful candidate should have the status of the PhD student at a Polish university either in a PhD programme or in the Doctoral School of Exact and Natural Sciences of the University of Warsaw.
Required documents:	1. Cover letter 2. Current academic curriculum vitae 3. Copy of MSc/BSc certificate (or, if the MSc/BSc certificate has not been obtained yet, a certificate/document about the date of MSc/BSc viva) 4. Signed information on the personal data processing 5. Two references including at least one from the recent scientific supervisor. 6. A transcript from the last completed cycle of studies (with a cumulative average grade). 7. A list of publications and conference abstracts (if applicable). 5. Signed information on the personal data processing. Before entering the competition, candidates are obliged to familiarise themselves with Internal Reporting Procedure. Fluent command of spoken and written English is essential. Knowledge of Polish is not a requirement.
We offer:	Exciting and highly interdisciplinary project on one of the most pressing challenges of humankind: how to move away from fossil fuels and chemicals to green and sustainable alternatives. We offer the unique opportunity to train in state-of-the-art materials science, biotechnological and electrochemical approaches with the top international experts in the field. Participation in the SUNGATE consortium meetings and international and national conferences is envisaged. Work in the young, dynamic and interdisciplinary team at CeNT UW as well as several short research visits in the collaborating labs of the SUNGATE consortium in Germany, Spain and Belgium (Fraunhofer Labs, ICIQ, and Ghent Uni.).
Please submit the following documents to:	Dr hab. Joanna Kargul (j.kargul@cent.uw.edu.pl), **quoting 'SUNGATE PhD' in the subject line.**
Application deadline:	1 May 2025

Date of announcing the results:	15 May 2025
Method of notification about the results:	Email, CeNT website: https://cent.uw.edu.pl/en/career/