UNIWERSYTET WARSZAWSKI

FACULTY OF PHYSICS
UNIVERSITY OF WARSAW

## COMPETITION ANNOUNCEMENT

The Dean of the Faculty of Physics, with the consent of the Rector of the University of Warsaw, announces a competition for the position of Assistant Professor[1] in the project "Microscale fluid transport by active surfaces".

**About the project:**

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| **Title of project** | **Optically and Electrically Driven Hybrid Memristive Synapses with Short- and Long-Term Plasticity for Next-Generation Neuromorphic Information Processing** |
| **Type of project** | **OPUS 30** |
| Funding institution | National Science Centre of Poland |
| Duration of project | 48 months |
| Head of project | dr Tomasz Stefaniuk |
| Description of project | The project aims to develop a new generation of optoelectronic memristive synapses capable of reproducing both short-term and long-term plasticity observed in biological synapses. The research will combine approaches from nanotechnology, photonics, electronics, and neuromorphic information processing. The main objective is to develop a single device architecture enabling the integration of information processing and memory functions, with the long-term goal of advancing faster and more energy-efficient computing systems. |

**Position details:**

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| **Position title** | **Visiting researcher** |
| Organisational unit | Faculty of Physics |
| **Employment group** | **Research (no teaching duties involved)** |
| Position profile[2] | R2, researcher holding a PhD degree, building their scientific independence |
| Academic discipline[3] | Physical sciences |
| Number of positions | 1 |
| Form of employment and length of working time (proportionally to full-time employment) | Employment contract, full-time employment |
| Expected date of commencement of work and employment period | 18 months, with the possibility of extension up to a maximum of 36 months following a positive performance evaluation, starting from 1 January 2027 or later. |
| Remuneration | Basic remuneration 180 000 PLN gross gross/year (including the employer's costs, additional annual remuneration, allowance for years of service, etc.). |

[1] The nouns used in the announcement apply to people of all genders.
[2] Complete only in the case of competition for the position in the research employment group or the research and teaching employment group.
[3] Complete only in the case of competition for the position in the research employment group or the research and teaching employment group.

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| | More information: link |
| Other working conditions | Workplace: Faculty of Physics, University of Warsaw, Pasteura 5, 02-093 Warsaw, Poland<br><br>The person employed as a visiting researcher (post-doc) will have the opportunity to conduct independent experimental research in the areas of nanofabrication, optoelectronics, nanophotonics, and memristive neuromorphic systems. Work within the project will enable the development of expertise in the fabrication and processing of thin-film structures, PVD and lithographic techniques, nanostructuring, as well as the electrical and optical characterization of devices.<br><br>The postdoctoral researcher will have access to the advanced research infrastructure of the University of Warsaw and the opportunity to collaborate with specialists in nanofabrication, photonics, and advanced laser techniques. The project will also provide opportunities to develop skills in independent research planning, data analysis, preparation of scientific publications, coordination of experimental work, and supervision of junior researchers.<br><br>Participation in international conferences is envisaged, together with opportunities to develop scientific collaborations and establish new research directions at the intersection of nanotechnology, photonics, and neuromorphic information processing.<br><br>More information: link |
| **Basic responsibilities and obligations** | – conducting technological work related to the fabrication of thin films using PVD methods and nanostructured layers, as well as the preparation, processing, and optimization of memristive structures and test devices;<br><br>– assembly and integration of fabricated structures and memristive devices intended for further electrical, optical, and electro-optical studies, including their preliminary characterization and analysis of the obtained results;<br><br>– ensuring continuity of technological work and providing periodic support to the PhD student involved in the project, particularly in the fabrication of structures and preparation of samples;<br><br>– close collaboration with the principal investigator, project collaborators, and other team members in integrating technological work with electrical characterization and optical studies, as well as preparing reports, scientific publications, and conference presentations.<br><br>More information: Scope of responsibilities of the academic teacher |
| **Conditions for entering the competition**[4] | – Fulfilment of the requirements set out in Article 113 of the Law on Higher Education and Science (Journal of Laws of 2024, item 1571, consolidated text)<br><br>– the candidate must meet the requirements established by the National Science Centre of Poland (NCN) for persons employed in a post-doc position. At the time of commencing employment, the candidate must hold a PhD degree in physics, chemistry, or a related discipline;<br><br>– the PhD degree must have been awarded by an institution other than the institution in which employment under the project is planned, unless the candidate has completed a continuous and documented research stay of at least 9 months, undertaken during doctoral school, doctoral studies, or after obtaining the PhD degree, at an institution other than the institution implementing the project and in a country other than the country in which the PhD degree was awarded;<br><br>– the candidate must have obtained the PhD degree in the year of employment in the project or within 12 years preceding 1 January of the year of employment in the project. This period may be extended by the duration of documented long-term sick leave or rehabilitation benefits exceeding 90 days due to incapacity for work. It may also be extended by the number of months of parental or childcare leave granted in accordance with the Labour Code. In the case of women, the period may |

[4] Required by the Act, the Law on Higher Education and Science, the Statute of the University of Warsaw, as well as necessary for the position.

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| | alternatively be extended by 18 months for each child born or adopted, if this method of accounting for career breaks is more favourable;<br>– during the period of receiving remuneration from the project, the person employed in the project may not receive any other remuneration from funds awarded as direct costs under research projects funded through NCN calls. The person may also not receive remuneration from another employer under an employment contract, including an employer based outside Poland, and may not receive pension benefits or equivalent benefits in Poland or abroad.<br><br>The candidate should have:<br>– a significant scientific track record, including publications and conference presentations, as well as international research experience, such as research stays or scientific collaboration;<br>– practical experience in nanofabrication, processing of thin-film structures, or fabrication of micro- or nanoscale devices, including the use of PVD, lithographic, or related techniques;<br>– experience in the electrical, optical, or electro-optical characterization of thin films, nanophotonic structures, or micro- and nanostructured devices;<br>– the ability to independently plan and carry out multi-stage experimental work related to the fabrication and characterization of structures;<br>– excellent command of written and spoken English, including the ability to prepare scientific publications. |
| In addition, we expect[5] | – experience in research on micro- or nanoscale optoelectronic devices; experience with memristive structures or advanced nanoscale devices will be considered an additional asset;<br>– experience in supervising or mentoring PhD students or undergraduate/master's students will be an advantage.<br><br>If hired, we expect the University of Warsaw to be the primary workplace for the successful candidate. |
| **Criteria for the assessment of candidates in a competition** | **1. Scientific achievements (publications, projects, presentations)** – The number and quality of scientific publications (including those in JCR-listed journals), assessed in the context of the length of the candidate's academic career – Participation in research projects (national and international) – Presentations at scientific conferences.<br><br>**2. Research experience and competencies** – Relevance of the candidate's experience to the scope of the project – Knowledge of tools, methods, and techniques relevant to nanofabrication, thin-film processing, and the study of micro- and nanoscale optoelectronic devices – Experience in the electrical, optical, or materials characterization of memristive structures and advanced nanoscale devices.<br><br>**3. Soft and organizational skills** – Communication skills and ability to work in a team – Independence in planning and conducting research – Ability to present results (both orally and in writing). |
| Position ~~related~~/not related[6] to activities covered by the protection of minors. | |

**Competition rules:**

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| **Announcement reference number** | **WF-1210-19/2026** |

[5] Additional conditions to be met; however, not meeting them will not lead to a negative formal assessment.
[6] Delete as appropriate.

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| Keywords | **memristors, memristive synapses, optoelectronics, nanophotonics, nanofabrication, neuromorphic devices, synaptic plasticity, thin-film structures, nanoelectronics, neuromorphic information processing, electro-optical characterization, functional materials.** |
| **Deadline for submitting applications**[7] | **30 November 2026** |
| **Method of submitting an application** | **Applications should be sent to the email address: tomasz.stefaniuk@fuw.edu.pl** |
| **Required documents** | – Candidate's questionnaire link<br>– Copy of the diploma confirming the required degree;<br>– If applicable, information on the expected date of obtaining the PhD degree (the PhD degree must be obtained before submitting the documents required for employment);<br>– Cover letter in English;<br>– two letters of recommendation from academic researchers.<br><br>Please ensure that your application is complete and submitted by the deadline indicated! |
| The competition is the first stage of the recruitment process, please read the Policy of Open, Transparent and Merit-Based Recruitment at the University of Warsaw link | |
| Stages of competiton | The competition consists of the following stages:<br>– Stage I - formal evaluation of documents,<br>– Stage II - substantive evaluation on the basis of submitted documents,<br>– Stage III - interview with selected candidates ,<br>– Stage IV - final evaluation of competence, experience and scientific achievements,<br>– Stage V - adjudication of the competition and announcement of results. |
| Anticipated date and method of notification of the competition outcomes | Candidates will be informed individually of the results of the selection process by email by 31 December 2026. |
| Contact for any questions relating to the competition | By email to: tomasz.stefaniuk@fuw.edu.pl, quoting the reference number of the announcement.<br><br>Accessibility needs should be indicated on the Candidate's Questionnaire, in: Other relevant information from a candidate |

**Employing faculty/unit:**

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| Research profile of faculty /unit | https://www.fuw.edu.pl/ |
| Teaching profile of faculty/ unit | https://www.fuw.edu.pl/informacje-ogolne.html |
| Other information | Principal Investigator's website: https://www.igf.fuw.edu.pl/pl/projects/research-groups/materialy-funkcjonalne/ |

The University of Warsaw has implemented the procedure for whistleblowers reporting cases of law violation and for undertaking follow-up actions. For **more information** about this topic and the processing of candidates' personal data please follow the link

The University of Warsaw is a winner of the HR Excellence in Research award granted by the European Commission to institutions adhering to the European Charter for Researchers.

HR EXCELLENCE IN RESEARCH

[7] Not sooner than 30 days from the date of publication of the announcement.