



HR EXCELLENCE IN RESEARCH



ADAM MICKIEWICZ UNIVERSITY POZNAŃ

ANNOUNCES

A COMPETITION

for the position of **ADIUNKT POST-DOC**

**NCN DAINA 3 Advanced MXene-based Nanocomposites: Multiplex and Multimodal
Biosensing Platforms for Health and Environmental Applications
UMO-2024/52/L/ST11/00040**

at the NanoBioMedical Center

Basic information

- 1. Competition reference number:**
Konkurs_Post-doc_DAINA_CNBM
- 2. Research discipline (research field):**
Physical sciences (electronics, biophysics)
- 3. Number of work hours per week including a task-based work schedule (if applicable):**
Full-time: 40 hours per week in a task-based work time system. Salary per month: around 8.987 PLN brutto.
- 4. Type of an employment contract and expected duration of employment, i.e.: permanent/temporary/fixed-term contract for year/...years**
01 May 2025 - 30 April 2027 (24 months)
- 5. Anticipated job starting date:**
01.05.2025
- 6. Workplace location:**
NanoBioMedical Center UAM w Poznaniu, ul. Wszechnicy Piastowskiej 3, Poznań
- 7. Application deadline and process:**

Electronic submission to: igoyat@amu.edu.pl

Deadline 15.04.2025. Please note that the job reference number should be quoted in the application.

8. Required documents

- Application form/letter of the candidate addressed to the Vice-Rector announcing the competition;
- *Curriculum Vitae*;
- Diplomas or certificates issued by colleges and universities attesting to education and degrees or titles held (in case of academic degrees obtained abroad - the documents must meet the equivalence criteria set out in Article 328 of the Act of 20 July 2018 Law on Higher Education and Science (Journal of Laws of 2024, item 1571 Polish: Dziennik Ustaw 2024 poz. 1571 t.j.);
- Other documents as determined by the competition committee.
- Consent to the processing of personal data as follows : *In accordance with Article 6 (1) (a) of the General Data Protection Regulation of 27 April 2016. (OJ EU L 119/1 of 4 May 2016) I consent to the processing of personal data other than: first name, (first names) and surname; parents' first names; date of birth; place of residence (mailing address); education; previous employment history, included in my job offer for the purpose of the current recruitment."*

Conditions of the competition determined by the competition committee

I) Determination of qualifications: (researcher profile) according to the Euraxess guidelines

- (R1) First Stage Researcher (up to the point of PhD)
- (R2) Recognised Researcher (PhD holders or equivalent who are not yet fully independent)
- (R3) Established Researcher (researchers who have developed a level of independence)
- (R4) Leading Researcher (researchers leading their research area or field)

<https://euraxess.ec.europa.eu/europe/career-development/training-researchers/research-profiles-descriptors>

II) Job Offer description

The research represents a pioneering project aimed at revolutionizing the field of biosensing. The MXNANO project seeks to address a critical challenge—enhancing the sensitivity and selectivity of biosensors, which currently struggle with limited detection capabilities in complex environments. The research aims to harness the unique properties of MXene-based nanocomposites (a two-dimensional material known for its electrical conductivity and surface properties, making it highly promising for biosensing applications), such as MXene/polypyrrole (Ppy), MXene/polydopamine (PDA), and MXene/gold (Au), to develop advanced biosensors for health diagnostics and environmental monitoring.

The project focuses on several key research questions. Firstly, it aims to understand how MXene-based nanocomposites can effectively enhance biosensor performance. This includes analyzing the electrical and chemical properties of MXenes (Ti_3C_2 , Ti_2C , and Nb_4C_3) and their impact on biosensor functionality. Secondly, the project seeks to determine the optimal configurations of these nanocomposites in immunosensors to achieve the highest precision and efficiency.

The hypotheses driving this project assume that MXene nanocomposites will significantly improve biosensor performance due to their exceptional electrical conductivity and high surface area. Furthermore, integrating MXene with specific polymers and bioreceptors is expected to lead to the development of biosensors with enhanced selectivity for target biomolecules.

The Post-Doc will be responsible for MXene synthesis, designing, conducting, and validating biosensor-related experiments, analyzing data, and preparing manuscripts.

III) Requirements and qualifications

The competition is open to individuals who meet the requirements specified in Article 113 of the Law on Higher Education and Science of 20 July 2018 (Journal of Laws of 2024, item 1571, Article 113 as amended) and who meet the following requirements:

- a) PhD degree in physics (electronics, biophysics) or similar and fulfilled formal NCN requirements https://ncn.gov.pl/sites/default/files/pliki/uchwaly-rady/2023/uchwala114_2023-zal1.pdf
- b) knowledge of materials science, solid-state and/or semiconductor physics, electronics and electrochemistry.
- c) basic knowledge on biosensors is welcome
- d) industrial experience is welcome
- e) H-index at least 5

IV) Required languages

Language: English

Level: good

Language: Polish

Level: basic

V) Required research, teaching or mixed experience

As in point III

VI) Benefits

- ✓ an atmosphere of respect and cooperation
- ✓ supporting employees with disabilities
- ✓ flexible working hours
- ✓ funding for language learning
- ✓ co-financing of training and courses
- ✓ additional days off for education
- ✓ life insurance
- ✓ pension plan
- ✓ savings and investment fund
- ✓ preferential loans
- ✓ additional social benefits
- ✓ leisure-time funding
- ✓ subsidizing children's vacations
- ✓ "13th" salary

VII) Eligibility criteria

1. Knowledge of materials science, solid-state and/or semiconductor physics, electronics and electrochemistry
2. Ability to conduct physical analyses and experience on experimental techniques, including SEM/TEM, XRD, optical and electrochemical characterization.
3. Number of publications, their impact factor, h-index

VIII) The selection process

1. Competition committee begins working no later than 14 days after the deadline for submission of documents.
2. Formal evaluation of submitted proposals.
3. Call to provide additional or missing documents if necessary.
4. Selection of candidates for the interview stage.
5. Interviews for candidates who meet the formal requirements.
6. The committee has the right to request external reviews of candidates' work or to ask candidates to conduct teaching assignments with an opportunity for student evaluation.
7. The chair of the competition committee announces the results and informs the candidates. This information will include justification with a reference to candidates' strengths and weaknesses. Submitted documents will be sent back to candidates.

IX) Prospects for professional development

As part of the project, the candidate for the Post-Doc position will have the opportunity to develop his/her skills in biosensors, including electrochemical immunosensors. He/she will also gain experience in conducting analyses of data obtained from biosensing experiments planned within the project. Additionally, during the project, trips to national and/or international conferences related to the project's topic are planned.

RODO Information Clause :

Pursuant to Article 13 of the General Data Protection Regulation of 27 April 2016. (Official Journal of the EU L 119 of 04.05.2016) we inform that:

1. The controller of your personal data is Adam Mickiewicz University, Poznań with the official seat: ul. Henryka Wieniawskiego 1, 61 - 712 Poznań.
2. The personal data controller has appointed a Data Protection Officer overseeing the correctness of the processing of personal data, who can be contacted via e-mail: iod@amu.edu.pl.
3. The purpose of processing your personal data is to carry out the recruitment process for the indicated job position.
4. The legal basis for the processing of your personal data is Article 6(1)(a) of the General Data Protection Regulation of 27 April 2016 and the Labour Code of 26 June 1974. (Journal of Laws of 1998 N21, item 94 as amended).
5. Your personal data will be stored for a period of 6 months from the end of the recruitment process.
6. Your personal data will not be made available to other entities, with the exception of entities authorized by law. Access to your data will be given to persons authorized by the Controller to process them in the performance of their duties.
7. You have the right to access your data and, subject to the law, the right to rectification, erasure, restriction of processing, the right to data portability, the right to object to processing, the right to withdraw consent at any time.
8. You have the right to lodge a complaint to the supervisory authority - the Chairman of the Office for Personal Data Protection, ul.Stawki 2, 00 - 193 Warsaw.
9. Providing personal data is mandatory under the law, otherwise it is voluntary.
10. Your personal data will not be processed by automated means and will not be subject to profiling.