 

# **ADAM MICKIEWICZ UNIVERSITY, POZNAN**

**ANNOUNCES**

**A COMPETITION**

**for the position of Postdoctoral Researcher**

**at the Faculty of Physics**

**Basic information**

1. **Research discipline (research field):**

Physics

1. **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.

1. **Type of an employment contract and expected duration of employment,**

Fixed-term contract for **2 years 6 months** with possible extension for **next 6 months** (max. total 3 years).

1. **Anticipated job starting date:**

15.02.2023.

1. **Salary:**

Gros including the employer’s cost: 10 000 PLN/month (approx. 7 800 PLN/month).

1. **Workplace location:**

Faculty of Physics, Uniwersytetu Poznanskiego 2, 61-614 Poznan.

1. **Application deadline and process:**

Electronic submission to [mkozak@amu.edu.pl](mailto:mkozak@amu.edu.pl). Application deadline: 01.02.2023. Please note that the job reference number should be quoted in the application.

1. **Required documents**

* Application form/letter of the candidate (email);
* *Curriculum Vitae* (max. 5 pages A4);
* 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 2022, item 574 i.e. as amended; Polish: Diennik Ustaw 2022 poz. 574 z późn. zmianami);
* Candidates who do not yet have a doctoral degree may apply if they plan to obtain it by the date of signing the employment contract.
* Information on the Applicant's research (publication record and list of conferences attended), teaching and organizational achievements,
* Two reference letters (not older than 3 months).
* 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**

1. **Determination of qualifications: (researcher profile) according to the Euraxess guidelines**

**(R2)** **Recognised Researcher** (PhD holders or equivalent who are not yet fully independent)

(definition of qualification level and professional experience according to Euraxess guidelines https://euraxess.ec.europa.eu/europe/career-development/training-researchers/research-profiles-descriptors)

1. **Job Offer description**

The job offer refers to the position in the NCN (National Science Centre) OPUS research grant entitled *Molecular basis of neurodegenerative diseases - the influence of selected metallic nanoparticles* (grant number: 2021/41/B/ST4/03807).

The aim of this project is to determine the effect of metallic nanoparticles based on zinc and copper and their oxides on the induction of amyloidogenesis processes of selected proteins or peptides (e.g. amyloid beta peptides or human cystatin C) associated with the emergence and development of neurodegenerative diseases (Alzheimer's disease or Icelandic type of amyloidosis). The manifestation of pathological processes occurring during the development of these diseases is the formation of amyloid deposits.

The research planned in the project covers three main areas. In the first stage, both peptides and proteins intended for research as well as nanoparticles of copper nanoparticles, copper oxides (Cu2O and CuO) as well as zinc and zinc oxide (ZnO) will be obtained, purified and characterized. In the next stages of the research, we want to characterize, using a combination of complementary spectroscopic, scattering and microscopic methods and using synchrotron radiation, the interactions of these nanoparticles with model beta amyloid peptides (e.g. 1-40, 1-42, 3-28 or 1-16) and human cystatin C. The impact of nanoparticles on the ability to create neurotoxic oligomers and fibrillar structures of the human cystatin C and A peptide, as well as their structure and kinetics of this process, will be investigated. The final stage of the research will be to determine the neurotoxicity of the tested nanoparticles against selected neuronal cell models, and in particular to characterize the morphological changes induced in the presence of nanoparticles.

In particular, the postdoctoral researcher will be responsible for:

* Preparation of samples of human cystatin C and/or metallic nanoparticles for planned research.
* Participation in spectroscopic research (FTIR infrared spectroscopy, CD dichroism, spectrofluorimetry).
* Conducting SAXS studies of systems planned in the project.
* Participation in the imaging of samples using AFM (atomic force microscopy).
* Reporting of research progress, preparation of publications, public presentation of results.
* Cooperation with project partners, including also short-term experiments in European synchrotrons.

1. **Requirments 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 2021, item 478, i.e. Article 113 as amended) and who meet the following requirements:

1. PhD in physical sciences, chemistry, biophysics, biology or related fields.

2. Fulfilled formal requirements regarding the date of obtaining the doctoral degree in accordance with the regulations of the National Science Centre (Poland) https://www.ncn.gov.pl/sites/default/files/pliki/uchwaly-rady/2021/uchwala81\_2021-zal1.pdf. Persons who do not have yet a doctoral degree may apply, provided they plan their defense no later than the date of signing the employment contract.

3. Experience in writing of scientific papers.

1. **Required languages**

4. Language: English

5. Level: fluent or native

1. **Required research, teaching or mixed experience**

- Work experience using FTIR and/or CD spectroscopy and/or spectroflurimetry and/or SAXS.

- Independent in laboratory work, ability to work in a project team, good organization of work.

- Availability: the project provides for research in European synchrotrons.

- Experience in writing of scientific publications and preparation of conference presentations.

- Good knowledge of data processing software such as: Mathematica or Matlab, OriginLab, CorelDraw or ATSAS.

- Knowledge of methods of synthesis of metallic and metal oxide nanoparticles or expression and purification of proteins in bacterial systems will be an additional advantage.

1. **Benefits**

* financial bonuses for high impact publications
* 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

1. **Eligibility criteria**

1. Matching of the candidate's scientific profile with the advertisement.

2. Number, scientific level of the candidate's scientific publications.

3. Number, scientific level and of the candidate's scientific conference presentations.

4. Grade on the diploma.

5. Internships and participation in research projects.

1. **The selection process**
2. Competition committee begins working no later than 14 days after the deadline for submission of documents.
3. Formal evaluation of submitted proposals.
4. Call to provide additional or missing documents if necessary.
5. Selection of candidates for the interview stage.
6. Interviews for candidates who meet the formal requirements.
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.
8. **Prospects for professional development**

- assistance in creating your own recognizable scientific profile through publication in reputable scientific journals,

- assistance in preparing own grant applications in domestic and foreign competitions,

- participation in research in European synchrotron centres,

- cooperation with renowned research centers.

**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.