 

#  ADAM MICKIEWICZ UNIVERSITY, POZNAN

ANNOUNCES A COMPETITION

for the position of **PhD Student (scholarship)**

at the Faculty of Physics and Astronomy

**Basic information**

1. Research discipline (research field): **PHYSICS/MATERIAL ENGINEERING**
2. Type of an employment contract and expected duration of employment: **Scholarship (4 years)**
3. Anticipated job starting date: **01.10.2025.**
4. Salary/Scholarship: **5000 PLN/month (24 months) and after the mid-term evaluation 6500 PLN/month (months)**
5. Application deadline: **15.08.2025. Electronic submission to** **bartlomiej.graczykowski@amu.edu.pl****.**
6. **Required documents:**
* **A copy of a master's degree in physical sciences or materials engineering** issued by authorized institutions recognized in the Republic of Poland (Kwalifikator NAWA, <https://kwalifikator.nawa.gov.pl/> ).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: Dziennik Ustaw 2021 poz.478);

* **Curriculum Vitae**(max. 4 pages A4);
* The application procedure will be carried via the AMU Doctoral School: <https://usosirk.amu.edu.pl/en-gb/offer/SD-2025/programme/SD-NFiz-G15/?from=field:DS010605N>;
* 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. **Job Offer description**

In 2011, a viral tweet about graphene's strength highlighted the excitement around 2D materials, particularly van der Waals (vdW) structures like graphene. These materials are expected to revolutionize technology, but their mechanical fragility remains a major challenge for widespread, durable applications.

Despite claims of superior elasticity, experimental understanding—especially of bulk vdW materials—is limited, with most studies focused on 2D forms. Standard measurement tools, such as AFM, are contact-based and interfere with the materials, producing inconsistent results. There's a strong need for a predictive framework combining experiments, simulations, and AI to understand and scale the mechanical behavior of 2D materials.

This project aims to address these gaps by studying nanomechanical properties of Transition Metal Dichalcogenides (TMDCs) from bulk down to single layers. It will develop a new, contactless experimental platform using all-optical techniques, specifically inelastic light scattering (e.g., Brillouin scattering), to assess intrinsic elastic features. This method will allow precise, nondestructive mechanical evaluation and help establish the foundation for reliable fabrication of robust 2D vdW heterostructures.

**In particular, the PhD Student will be responsible for:**

* Sample preparation from vdW single crystals (thin films, membranes, and heterostructures).
* Sample characterization using SEM, TEM, AFM, and ellipsometry.
* Reporting, preparation of manuscripts for publication, and public presentation of results.
* Short-term (approximately 4 weeks per year) foreign assignments dedicated to sample fabrication (Spain, the Netherlands, and Japan).

The job offer refers to the position in the NCN SONATA BIS project (National Science Center) (Contract number: NCN 2024/54/E/ST3/00232).

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 2022, item 574, i.e. Article 113 as amended) and who meet the following requirements:

* + - * MSc title in physical sciences or material engineering issued by authorized institutions recognized in the Republic of Poland (NAWA Qualifier, <https://kwalifikator.nawa.gov.pl/>).
			* Basic knowledge of solid mechanics, polymer physics, heat transfer, and nanofabrication.
			* English language proficiency (C1 level or higher).
			* Independence, good work organization, and teamwork skills.
			* Availability: the project includes research in project partner teams.
			* Knowledge of software such as Mathematica, Matlab (or LabView), OriginLab, COMSOL, CorelDraw, and LaTex.
1. **Eligibility criteria and the selection process:**

Available at AMU Doctoral School website: <https://usosirk.amu.edu.pl/en-gb/offer/SD-2025/programme/SD-NFiz-G15/?from=field:DS010605N>

**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.