Institute of Molecular Physics
Polish Academy of Sciences

Mariana Smoluchowskiego 17, 60-179 Poznań, Poland
www.ifmpan.poznan.pl
tel. 61 8695 100, fax 61 8684 524

Director of the Institute of Molecular Physics, Polish Academy of Sciences
announces a recruitment for the position of assistant professor
at the Department of Theory of Nanostructures and Quantum Materials

Institution: Institute of Molecular Physics, Polish Academy of Sciences (IMP PAS)

(PL: Instytut Fizyki Molekularnej Polskiej Akademii Nauk /IFM PAN/)

City: Poznań, Poland

Position: assistant professor

Scientific discipline: physical sciences

Opening date: 17 November 2026

Application deadline: 01 December 2026, 3:00 p.m. CET

Website: http://www.ifmpan.poznan.pl

Keywords: solid-state physics, condensed matter properties, computer physics

I. Offer description:

Title of the scientific task: Theoretical research and numerical modeling of magnetocrystalline anisotropy and magnetic properties of quantum materials and nanostructures using density functional theory (DFT) methods.

Scope of duties:
- conducting advanced quantum-mechanical calculations using density functional theory (DFT) methods in order to determine magnetocrystalline anisotropy (MAE) in the studied systems;

- modeling and calculations of microscopic magnetic parameters, including magnetic moments, and determination of Curie temperatures;

- independent operation, configuration, and optimization of computational processes on high-performance computing clusters;

- working with specialized software for DFT calculations (e.g., FPLO, VASP, Quantum ESPRESSO, WIEN2k or related) and tools for processing and visualization of structural and electronic data;

- critical analysis, interpretation of the obtained theoretical results, and their confrontation with available experimental data;

- active publishing of scientific results, preparing manuscripts of research papers, presentation and dissemination of results at international scientific conferences, documented by a prior high-quality scientific record;

- participation in obtaining research funding (preparing grant applications to institutions such as NCN, NAWA, etc.) and ongoing development of the programming and methodological facilities of the Department.

II. Requirements for candidates:

1. Research career stage:
R2: Recognized Researcher (PhD holders or equivalent who are not yet fully independent),
More information on career stages: https://www.more3.eu/indicator-tool/career-stages-r1-to-r4

2. Required education:
- in the discipline of physical sciences or materials engineering
- academic degree of doctor.

3. Required qualifications and skills:
- Documented scientific record (publications in international journals from the JCR list, conference presentations, scientific internships, or awards);
- Knowledge of solid-state physics and the theory of magnetism, with particular emphasis on the physics of nanostructures, quantum materials, and the theoretical description of magnetocrystalline anisotropy;
- Experience in operating software necessary for scientific work, text editing, and manuscript typesetting (LaTeX).

4. Special requirements:
- Excellent knowledge of software for electronic structure calculations using methods based on density functional theory (DFT), in particular packages commonly used in solid-state physics (e.g., FPLO, VASP, Quantum ESPRESSO, WIEN2k or related);
- Experience working in a Linux environment and the ability to efficiently manage computational tasks and processes on high-performance computing clusters;
- Experience in modeling and numerical determination of microscopic magnetic parameters, including magnetic moments and Curie temperatures;
- Ability to use tools for post-processing, analysis, and visualization of structural and electronic data (e.g., XCrySDen, VESTA, Gnuplot, Python).

5. Knowledge of English: very good: to the extent that it allows for free communication and preparation of scientific publications

6. Scientific experience required:
- in the discipline: physical sciences, materials engineering;
- in the topic of: solid-state physics, in particular magnetism and magnetic materials;
- in computational methods: FPLO, VASP, Quantum ESPRESSO, WIEN2k, etc.

7. Professional experience required: 1-4 years

III. Duration of the employment: to be determined individually based on the current regulations.

IV. Type of contract: full-time job

V. Expected date of employment start: January 2027

VI. Employment type: employment contract

VII. Salary: in accordance with the current Law

VIII. Number of positions offered: 1 (one)

IX. Job benefits: excellent working conditions, modern technical facilities, international cooperation

X. Required documents:

1. an application containing concise information about the candidate's scientific interests and previous achievements (length not exceeding 3500 characters including spaces);
2. a curriculum vitae containing information about education and scientific career path, information about completed scientific internships and training, conference presentations and delivered semi-

nars, awards and distinctions, participation in research projects, obtained funding, organizational achievements, etc.;
3. a list of scientific publications;
4. a scan or photocopy of a document confirming the level of English language proficiency, if English is not the candidate's native language;
5. a scan or photocopy of a document confirming the possession of a doctoral degree;
6. an opinion of the doctoral dissertation supervisor and/or recommendations from senior academic staff;
7. consent to the processing of personal data for recruitment purposes (Appendix No. 1);
8. statement that if the contest is won, the Institute of Molecular Physics, Polish Academy of Sciences, will be the primary place of work within the meaning of the Act of 20 July 2018 Law on Higher Education and Science (Journal of Laws of 2018, item 1668, as amended) - Appendix No. 2;

Documents in languages other than Polish or English should be translated into Polish or English.

XI. Method of submitting offers:
Applications with the annotation **Competition for the assistant professor - ZN2 - no. 07/2026** should be delivered to the Institute's address or sent to the e-mail address director@ifmpan.poznan.pl

Contact person:
Head of the Department of Theory of Nanostructures and Quantum Materials
Dr. hab. Mirosław Werwiński, Prof. IMP PAS
E-mail: werwinski@ifmpan.poznan.pl
Phone: +48 61 8695150

XII. Qualification criteria:
- Scientific achievements in the field of theoretical modeling of the electronic and magnetic structure of solids, including nanostructures and quantum materials (publications from the JCR list, conference presentations);
- Knowledge and experience in conducting DFT calculations, with particular emphasis on magnetocrystalline anisotropy, magnetic moments, and Curie temperatures;
- Competence to carry out research tasks, including experience in working on HPC clusters and proficiency in using DFT software and data analysis tools;
- Additional achievements, including distinctions, scholarships, awards, as well as completed training and workshops in the field of computational physics;
- Scientific mobility and project activity, including participation in research projects as well as internships or scientific cooperation completed outside the home institution.

XIII. Qualification process:

1. Job application competition,
2. The possibility of conducting a complementary interview with the best candidates in the form of a video conference.

Candidate ratings will be done by the Competition Commission appointed by the Director. A candidate with a negative opinion may appeal against the results of the evaluation to the Director within 7 days from the date of receipt of the Competition Committee's opinion.

XIV. Expected date of the results announcement: December 2026

XV. Additional information: IPM PAS does not provide accommodation.

/signed by: Prof. dr hab. Tomasz Toliński
Director IFM PAN/

DISCLAIMER:

According to art. 13 1 and 2 of Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of individuals with regard to the processing of personal data and on the free movement of such data and repealing Directive 95/46/EC (Journal of Laws UE L 119/1 of 4.5.2016), hereinafter referred to as RODO, we inform that:

1. The administrator of your personal data is the Institute of Molecular Physics, Polish Academy of Sciences, in Poznań, ul. Mariana Smoluchowskiego 17.
2. Your personal data will be processed for the duration of the recruitment process.
3. You have the right to request from the administrator access to personal data, the right to correct them, delete or limit processing, the right to object to the processing of personal data, as well as the right to transfer data.
4. You have the right to withdraw your consent at any time. The above does not affect compliance with the law, which was made on the basis of your consent before it was withdrawn.
5. It is possible to lodge a complaint with the supervisory body - the President of the Office for Personal Data Protection.
6. Providing personal data is voluntary.
7. Your data will not be shared with entities other than entities authorized on the basis of applicable law.
8. The administrator will not transfer your personal data to recipients in third countries and international organizations.

Appendix 1

Consent for the processing of personal data for recruitment purposes

I agree to the processing of personal data provided in this document for realising the recruitment process pursuant to the Personal Data Protection Act of 10 May 2018 (Journal of Laws 2018, item 1000) and in agreement with Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation).

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Name

.....
Date and signature

Appendix 2

DECLARATION

I declare that if I win the Contest, the Institute of Molecular Physics of the Polish Academy of Sciences will become my primary place of work within the meaning of the Act of 20 July 2018, Law on Higher Education and Science (Journal of Laws of 2018, item 1668, as amended).

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Name

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Date and signature