Jerzy Haber Institute
of Catalysis and Surface Chemistry
Polish Academy of Sciences

HR EXCELLENCE IN RESEARCH

KSN 8/2026 Krakow, 2026-11-03

Assistant (post-doc)
in the group Soft Matter Nanostructures

- **Place of work:** Jerzy Haber Institute of Catalysis and Surface Chemistry Polish Academy of Sciences in Krakow
- **Research scope:**
  - Microbiology, Biotechnology, Biomaterials, and Nanomaterials
- **Research profile:** R2
- **Application deadline:** 2026-12-03 03:00 pm GMT+1
- **Location:** Poland, Krakow
- **Contract type:** fixed-term contract
- **Employment mode:** Full-time
- **Weekly working hours:** 40
- **Employment start date:** 2027-01-04
- **Keywords:** Microbiology, bacterial biofilms, bacterial adhesion, antimicrobial and antibiofilm activity, biomaterials, functional surface coatings, nanomaterials, polymeric nanocapsules, polyelectrolyte multilayers (LbL), controlled drug release.

The Jerzy Haber Institute of Catalysis and Surface Chemistry of the Polish Academy of Sciences in Krakow announces a competition for the position of Assistant (post-doc) in the group Soft Matter Nanostructures for the implementation of the project OPUS 30 P. WARSZYŃSKI (2025/59/B/ST5/02760) "Nanoengineered multilayer polyelectrolyte coatings for targeted and programmable local delivery of therapeutics".

The competition is open to persons who meet the conditions set out in the Act on the Polish Academy of Sciences of 30 April 2010 (Journal of Laws 2020, item 1796, as amended), Article 89, Section 4.

In particular, the candidate's responsibilities will include:

• Planning and conducting microbiological studies to evaluate the antibacterial and antibiofilm activity of functional surface coatings and nanocarriers for therapeutic agents.

• Cultivation of microorganisms and development and optimization of methods for evaluating bacterial adhesion, viability, and biofilm formation on biomaterial surfaces.

• Assessment of the antimicrobial efficacy of developed materials using microbiological and microscopic techniques, including colony-forming unit (CFU) assays, viability tests, and fluorescence and confocal laser scanning microscopy (CLSM).

• Investigation of relationships between the physicochemical properties and structure of coatings and nanocarriers and their biological activity, particularly bacterial adhesion and biofilm formation.

• Participation in the design and optimization of polyelectrolyte multilayer coatings (LbL) incorporating functional nanocarriers, in collaboration with researchers responsible for their synthesis and physicochemical characterization.

• Evaluation of the biological efficacy of therapeutic agents released from nanocarriers and polyelectrolyte multilayer coatings.

• Analysis and interpretation of experimental results, preparation of project reports and scientific publications, and presentation of research findings at national and international scientific conferences.

Required education level:

PhD degree in microbiology, biotechnology, chemistry, biology, or related fields.

Skills / qualifications:

Required Qualifications:

- Documented research experience in microbiology, biotechnology, biomaterials, or related fields, including experience gained during doctoral research.
- Practical laboratory experience working with microorganisms, particularly bacterial cultivation and assessment of the antimicrobial activity of active compounds and materials.
- Experience in investigating bacterial adhesion to surfaces, bacterial biofilm formation, and antibiofilm properties.
- Practical knowledge of microbiological techniques, particularly bacterial viability assays, colony-forming unit (CFU) determination, antibacterial activity testing, and quantitative and qualitative biofilm analysis.
- Basic knowledge of nanomaterials and nanotechnology, particularly nanoparticles and polymeric nanocapsules and their applications in drug delivery.
- Ability to independently design and conduct experiments, perform statistical data analysis, and interpret research results.
- Documented scientific achievements demonstrated by publications in international peer-reviewed journals and presentations at scientific conferences.
- Very good command of written and spoken English, enabling the preparation of scientific publications and effective communication in an international research environment.
- Strong motivation for scientific research, independence, and the ability to work effectively in an interdisciplinary research team.

Additional Assets:

- At least four years of research experience in fields relevant to the project.
- Experience in evaluating the antibacterial and antibiofilm activity of biomaterials or functional surface coatings.
- Experience in biomaterial cytocompatibility testing and mammalian cell culture.
- Knowledge of the synthesis, functionalization, and characterization of nanomaterials, particularly polymeric or polyelectrolyte nanocapsules.
- Familiarity with the Layer-by-Layer (LbL) technique and physicochemical characterization methods for nanomaterials (e.g., DLS, QCM-D, SEM, AFM, UV-Vis).
- Authorship of at least two scientific publications in journals listed in Journal Citation Reports (JCR), in which the candidate is the first author or corresponding author.
- Experience in national or international research projects as a team member or principal investigator, as well as completion of a research internship at a foreign research institution.

Formal NCN Eligibility Requirements:

- Candidates must meet the eligibility criteria for employment in a postdoctoral position specified in the regulations of the Polish National Science Centre (NCN) for the OPUS 30 call, in particular:
- PhD degree: The candidate must have obtained a PhD degree in the year of employment in the project or within 12 years before 1 January of the year of employment. This period may be extended to account for documented career breaks related to long-term incapacity for work or childcare, in accordance with NCN regulations.
- Research mobility: The candidate must have obtained a PhD degree from an institution other than the prospective employing institution or completed a continuous, documented research stay of at least 9 months at an institution other than the institution implementing the project, in a country different from the country where the PhD degree was awarded. The research stay may have been completed during doctoral studies, doctoral school training, or after obtaining the PhD degree.
- NCN funding: During the period of receiving remuneration as a postdoctoral researcher, the candidate must not receive any other remuneration from the direct costs of research projects funded under NCN calls.
- Employment: During the period of receiving remuneration as a postdoctoral researcher, the candidate must not receive remuneration under an employment contract with another employer, including an employer based outside Poland.
- Pension benefits: During the period of receiving remuneration as a postdoctoral researcher, the candidate must not receive pension benefits or equivalent benefits in Poland or abroad.

Detailed requirements

The candidate's application should include:

1. cover letter
2. copy of the diploma conferring the doctoral degree
3. full curriculum vitae
4. at least one opinion about the candidate from the previous supervisor
5. list of scientific achievements
6. self-report - maximum 1 A4 page
7. Certificate of proficiency in the required languages

Required languages

- English (C1)

Required research experience

- 4-10 years.

Additional information

Salary:
Gross salary will amount to 8 300,00 - 9 300,00 PLN per month depending on the candidate's experience.

Qualification criteria

Criterion	Points from	Points to	Minimum
Microbiological research experience	0	10	6
Studies of biofilms, adhesion, and antimicrobial activity	0	10	6
Knowledge of Nanomaterials and Nanocarriers	0	10	6
Research achievements, publications, and projects	0	5	2
Very good command of spoken and written English, as evidenced by a C1 certificate	0	1	1

Maximum number of points: 36.

Selection process

Applications for the competition should be submitted electronically via the platform https://praca.ikifp.edu.pl.

The deadline for submitting documents is **2026-12-03 03:00 pm GMT+1**. The competition will be concluded by **2026-12-21**. Candidates will be informed about the outcome.

Employment will be offered for a period of **36 months** in accordance with applicable regulations.

In the case of candidates with equivalent qualifications or if clarification of submitted information is needed, selected candidates may be invited to an online interview.

Additional information

The Institute has been adapted to the needs of persons with disabilities. The Institute does not provide accommodation.

The Jerzy Haber Institute of Catalysis and Surface Chemistry of the Polish Academy of Sciences, awarded the HR Excellence in Research Award by the European Commission, fully supports and applies the principles of open, transparent and merit-based recruitment (OTM-R). The Institute fully endorses and follows the OTM-R policy as one of the pillars of the European Charter for Researchers and Code of Conduct for the Recruitment of Researchers, as well as a key element of the HR Strategy (HRS4R).

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