# Recruitment announcement no. 1/2026 for a special position at the doctoral school of the Hirszfeld Institute for a PhD student-fellow in the NCN Research Project under NSC SHENG 4 Grant

Recruitment is conducted in accordance with the Act on Higher Education and Science of 20 July 2018, the Regulations of the Doctoral School of the Institute of Immunology and Experimental Therapy of the Polish Academy of Sciences, and the Rules of Recruitment to the Doctoral School of the HIIET PAS.

## Recruitment information

Date of announcement: 21.01.2026

Application deadline: 17.02.2026

Interview: 24-25.02.2026

Start date of education: 1st March 2026

Scientific discipline: biological sciences

Number of vacancies: 1

HIIET PAS website: hirszfeld.pl

Doctoral School website: szkoladoktorska.hirszfeld.pl

If no formally correct application is received within the stipulated time, the deadline for accepting applications may be extended.

## Research project description

Grant title: **Chemical synthesis, immunological evaluation and epitope analysis of carbohydrate antigens of *Pseudomonas aeruginosa* (NSC grant)**

Short description: *Pseudomonas aeruginosa* is an opportunistic pathogen that causes serious hospital-acquired infections in people with cystic fibrosis and severe burns. The World Health Organisation (WHO) has identified drug-resistant strains of this bacterium as a high-priority pathogen requiring the development of new bactericidal compounds. Although several vaccine candidates have entered clinical trials, the efficacy results of these preparations are insufficient and there is currently no approved vaccine against *P. aeruginosa* available. Lipopolysaccharide (LPS, O antigen) is one of the main surface antigens and virulence factors of this bacterium. To date, 20 major O serotypes (O1-O20) of *P.*

*aeruginosa* have been identified. When designing vaccines based on O antigens, naturally isolated or synthetic polysaccharides can be used. In both cases, the antigen is selected based on its immunogenicity, and in the latter case, based on access to developed and efficient chemical synthesis procedures.
The project is based on Polish-Chinese cooperation. The Chinese partners will develop methods for synthesising new O antigens of defined length, while the Polish researchers will describe, as part of this doctoral project, how selected oligosaccharides in the form of glycoconjugates are processed and presented by antigen-presenting cells (APCs) of the immune system. Further exploration of these processes will contribute to the design of effective glycoconjugate vaccines.
We offer work in a dynamic, interdisciplinary and friendly team conducting research in the field of immunochemistry of bacterial sugar antigens.
LINK TO THE WEBSITE: https://hirszfeld.pl/en/structure/laboratories/laboratory-of-microbial-immunochemistry-and-vaccines/
Principal Investigator: Prof. Jolanta Łukasiewicz, the head of the Laboratory of Microbial Immunochemistry and Vaccines, jolanta.lukasiewicz@hirszfeld.pl (ORCID: 0000-0001-8081-7261)

## PhD project description

Title: "Antigen processing and presentation studies of *Pseudomonas aeruginosa* selected O antigens"

Supervisor: Marta Kaszowska, PhD, Laboratory of Microbial Immunochemistry and Vaccines, marta.kaszowska@hirszfeld.pl (ORCID: 0000-0003-4469-5660).

A brief description of the work planned to be carried out as a part of PhD student research:

(i) preparation and structural characterisation of several defined glycoconjugates and their fluorescently labelled counterparts, including the natural O antigen and several selected fragments of *P. aeruginosa* O antigens with immunogenic peptides,
(ii) imaging of antigen presentation and processing *in vitro* using confocal microscopy,
(iii) characterisation of antigen-presenting cell differentiation using flow cytometry,
(iv) characterisation of CD4+ cells induced by the above-mentioned glycoconjugates.

The result of the research will be a correlation between the observed immunogenicity of glycoconjugates *in vivo* and the process of their 'processing' by immune system cells.
The doctoral project will enable the acquisition and development of a wide range of new research skills, including both the use of advanced equipment (NMR, mass spectrometry, SPR, GC-MS, HPLC, flow cytometry, serological methods) and the opportunity to develop one's own research ideas. We provide extensive support for professional development through internal and external training, individual mentoring, opportunities for development through cooperation with national and international centres, and the opportunity to participate in scientific conferences.

Place of PhD project: Poland, Wrocław, HIIET PAS, Laboratory of Microbial Immunochemistry and Vaccines in cooperation with the University of Life Sciences and PORT Polish Centre for Technology Development – Łukasiewicz Research Network.

## Candidate profile

- master's degree in biology, biotechnology, microbiology, or related fields
- strong motivation for research, scientific curiosity, and willingness to collaborate with national and international partners
- experience in laboratory work, including analytical techniques, microbiological and immunoenzymatic methods
- effective communication skills and practical knowledge of English
- teamwork skills, eagerness to teach and supervise students and interns

## Formal regulations regarding the scholarship

The PhD student-fellow will receive a scholarship for 48 months, which includes:

a) Year 1 and 2 (before mid-term evaluation): **PLN 3,466.90 gross/month**,

b) Year 3 and 4 (after mid-term evaluation): **PLN 5,340.90 gross/month**,

**and an additional NSC research scholarship** in the amount of **PLN 1120 gross** per month (for the period of 24 months).

## PhD student responsibilities

1. Conducting scientific work and laboratory experiments covered by the doctoral project programme, including structural characterisation of glycoconjugates using NMR spectroscopy and mass spectrometry methods.
2. Conscientious performance of tasks.
3. Continuous scientific development and expansion of knowledge.
4. Presentation of results at national and international scientific conferences, participation in the preparation of manuscripts for publication and scientific research reports.
5. Implementation of the IITD PAN Doctoral School education programme.

## Required documents

1. The application form (szkoladoktorska.hirszfeld.pl/rekrutacja/)
2. Documents listed in the 'Admission Rules' (szkoladoktorska.hirszfeld.pl/zasady-rekrutacji/), §1, point 8, in particular:

- a copy or certified transcript of a diploma confirming the completion of a master's degree or a certificate of obtaining the degree. For diplomas obtained outside the

European Union, the original diploma and a transcript of grades must be certified with an apostille or legalized at the Polish diplomatic mission in the relevant country. These documents must be submitted no later than before the commencement of studies. Documents without proper authentication will not meet formal requirements;

- a certificate confirming knowledge of English at level B2 or higher (not required for candidates who have passed a course-ending exam at this level during their studies);
- a copy or certified transcript of the index (student record book) from first- and second-cycle studies (or uniform master's studies). Alternatively, a diploma supplement with grades from the entire course of study or student grade sheets confirmed by the dean's office;
- a motivation letter providing a brief description of the candidate's scientific interests and achievements, along with the reasoning for pursuing education at the doctoral school;
- a declaration stating that DS HIIET PAS will be the only doctoral school the candidate will attend;
- CV and a completed personal questionnaire containing a list of scientific publications, scholarships and awards, a list of conferences in which the Candidate participated along with the titles and authors of the presentations
- Contact information for 1–2 referees or 1–2 reference letters from previous employers or academic supervisors.

## How to apply

1. Electronically – to sd.iitd@hirszfeld.pl (preferred method), with the note "Special recruitment 2026"; Originals of selected documents must be delivered before the start of the course.

2. In person – at the Main Secretariat of the Institute of Immunology and Experimental Therapy of the Polish Academy of Sciences, Weigla 12 in Wrocław, between 9:00 a.m. and 3:00 p.m.

## Additional information

The recruitment process and the functioning of the doctoral school – sd.iitd@hirszfeld.pl

The doctoral project – jolanta.lukasiewicz@hirszfeld.pl (principal investigator) and marta.kaszowska@hirszfeld.pl (supervisor)

We reserve the right not to select a candidate for the above position.