COMPETITION FOR ASSISTANT PROFESSOR (IN POLISH: ADIUNKT) POSITION AT THE ILTSR PAS IN THE DIVISION OF LOW TEMPERATURE AND SUPERCONDUCTIVITY.

Institution: Institute of Low Temperature and Structure Research, PAS

City: Wrocław

Position: assistant professor (in Polish: adiunkt) (F/M)

Discipline: physical sciences

Posted: 03.08.2026

Expires: 02.10.2026

Date of the contest settlement: 16.10.2026

Planned start date of employment: 04.01.2027

Website: https://www.intibs.pl/en/

Keywords: thermal conductivity, thermal Hall effect, phonons, chirality, geometric phases

The Institute of Low Temperature and Structural Research of the Polish Academy of Sciences in Wrocław announces a competition to fill the position of assistant professor (in polish: adiunkt) position at the ILTSR PAS in the Division of Low Temperature and Superconductivity, contractor of the research project entitled “Heat and Geometry: Investigating the Geometric-Phase Origin of the Phonon Thermal Hall Effect” (UMO-2025/59/B/ST3/00232).

The contract will be concluded on a full-time basis for the period of 12 months with the possibility of extension to (total) 42 months. The monthly remuneration under the contract will amount to approx. 13.300,00 PLN gross. Detailed employment conditions will be specified in the employment contract concluded between the employed person and the Director of INTiBS PAN. The person employed will be subject to the provisions of the Institute's applicable Remuneration Regulations and other relevant internal regulations.

Project description

The main objective of the project is to experimentally confirm the occurrence of the phonon thermal Hall effect (PTHE) in non-magnetic insulators and to identify the microscopic mechanisms responsible for its emergence. The thermal Hall effect manifests itself in the generation of a transverse temperature gradient under an applied magnetic field when a longitudinal heat current flows through a material. Although the effect was originally attributed to the Lorentz force acting on charged heat carriers, recent observations have demonstrated that it also occurs in systems in which heat transport is mediated exclusively by electrically neutral quasiparticles. Particularly surprising are reports of a large PTHE in simple non-magnetic

crystals, which cannot be properly described by existing theoretical models. The hypothesis underlying the project is that the PTHE in non-magnetic insulators is a manifestation of a geometric phase acquired by phonons. We assume that its origin depends on the class of material: in ionic insulators, the dominant role is played by Lorentz forces acting on Born effective charges, whereas in covalent insulators, the effect may arise from the lattice Aharonov–Bohm effect. This mechanism, associated with the breakdown of the Born–Oppenheimer approximation, allows the magnetic field to interact with lattice vibrations through the electron cloud, imparting an additional Berry phase to phonons and affecting phonon–phonon scattering processes.

Tasks description

The responsibilities of the successful candidate will include constructing measurement setups, preparing samples, planning and conducting measurements, travelling to experimental facilities for measurement sessions, analysing data, interpreting results, drawing conclusions regarding the underlying physical mechanisms, presenting results at conferences, and preparing scientific publications, supervising interns and students.

Requirements

The candidate must meet the requirements specified in the Regulations on awarding funding for the implementation of tasks financed by the National Science Centre with regard to research projects, Annex 2, Section 2.1.1, and should (uchwala72_2025-zal1.pdf):

- have a doctoral degree in physical sciences
  in accordance with the requirements of the National Science Center, eligible candidates must have obtained their PhD in the year of employment in the project or within the 12 years preceding 1 January of that year. This period may be extended in accordance with the provisions of the aforementioned Regulations. The PhD must have been awarded by an institution other than INTiBS PAN, unless the candidate has completed a research stay of at least nine months at another institution (details are included in the above-mentioned Project Regulations).
  Furthermore, during the period in which the candidate is employed in the project, they must not receive any other remuneration from funds awarded as direct costs under research projects financed through NCN funding schemes. They also must not receive remuneration from another employer under an employment contract, including an employer based outside Poland, nor may they receive pension benefits or equivalent benefits in Poland or abroad. Details are provided in the Regulations.
- have an excellent command of English;
- be ready to start work from 4 January 2027 (formal steps related to residence and work permit in Poland should be taken into account);
- have a background in experimental condensed matter physics, preferably involving thermal transport measurements at low temperatures and in a magnetic field;
- have knowledge of physical phenomena occurring in solids, with particular emphasis on those related to heat transport;
- have programming skills;
- have skills in designing and constructing experimental equipment;
- be capable of performing delicate, highly precise manual operations;
- be able to critically review scientific literature and write scientific publications;
- have a proven research record, documented by publications in peer reviewed journals;

- be able to conduct research independently but also work effectively as part of a research team;

List of documents required from the candidate:

A candidate entering the competition should submit:

1. A diploma or a copy of the diploma in English or Polish (if in another language, an English translation must also be attached) confirming completion of the doctoral degree. If the diploma was obtained abroad, the candidate will be required to provide a legalised or apostilled original of the diploma before starting employment at the Institute (otherwise it will not be possible to conclude an employment contract). In the case of a degree obtained abroad which is not recognised in Poland on the basis of international agreements, the candidate will apply to the Institute for its nostrification. Information on nostrification can be found at the following link: https://nawa.gov.pl/images/users/642/Nostrification-of-academic-degrees_1.pdf
2. An application for employment addressed to the Director of the Institute containing the following clause: " I agree for processing my personal data enclosed in my documents for the needs necessary of the recruitment (in accordance with art. 6 par. 1 lit. A of the General Regulation of the European Parliament and of the Council (EU) 2016/679 of 27 April 2016 on the protection of individuals with regard to the processing of personal data and the repeal of Directive 95/46 / EC and the Act of 10 May 2018 on protection of personal data (Journal of Laws 2018 item 1000)".
3. Scientific Curriculum Vitae, containing information about the scientific career (education and employment), as well as information on participation in conferences, internships, projects, awards and distinctions, skills and knowledge of foreign languages.
4. List of publications.

When signing the contract, the candidate will be required to submit an authorization to be included in the number of employees engaged in the scientific activity at the Institute, as well as to provide declarations that the publications arising from the project are part of the scientific output of the Institute.

Complete documents should be submitted in electronic version via the e-mail address: intibs@intibs.pl, with "Post-doc ONTiN, OPUS-30" in the subject line, by 2 October 2026. Selected candidates may be invited for an interview.

Additional information

For more information, please contact the project manager: Marcin Matusiak, (email: m.matusiak@intibs.pl, tel. +48 71 395 4 197)

The competition will be conducted in accordance with the competition documentation of the National Science Center (NSC) applicable to the project.

Personal information:

Your personal data is collected and processed by the Institute of Low Temperature and Structural Research of the Polish Academy of Sciences in Wroclaw in accordance with the information on personal data processing available at https://bip.intibs.pl/artykuly/rodo-1