



# Institute of Physics of the Polish Academy of Sciences Scholarship for a PhD Student



**Job ID: #JOB 57/2020**

## Job Description

**Job Title:** PhD student

### Job Summary:

Key responsibilities include:

1. Fabrication of samples with e-beam lithography
2. Electrical measurements in dilution refrigerator (~10mK) and He3 sorption fridge (~250mK)
3. Design and installation of sample holders, CAD programs, filters
4. Data acquisition and analysis (LabView, Origin, Mathematica)
5. Simulation of heat flow in nanostructures (Matlab)

Profile of candidates:

Mandatory:

1. RESPONSIBILITY for the specific tasks in the project
2. Strong interest in the proposed research
3. Good soft skills: candidate should work in harmony with the rest of researchers

Optional:

4. Background in Experimental Solid State Physics, Nanoscience, Nanotechnology or Electronics
5. Good technical skills,
6. Low-noise transport measurements experience will be of an advantage,
7. capable of using programming languages i.e. LabView, Mathematica, Matlab

### Job Description:

The project will take an extensive use of a superconducting Josephson junction (JJ) as a temperature-sensing element delivering nanosecond resolution. Successful implementation of a JJ-based thermometer should lead to establishing a new approach to calorimetry and bolometry at the nanoscale. It will make it possible to dynamically test thermodynamical properties of nanostructures, involving measurements of heat capacity and thermal conductivity as well as mechanisms of heat exchange at low temperatures (hot electron diffusion, electron-phonon coupling, photon radiation). Fast thermometry will provide direct access to the temporal evolution of effective temperatures under nonequilibrium conditions and the energy relaxation rates, thus contributing to a complete understanding of the thermodynamics of mesoscopic systems.

**Main research field:** Physics

**Sub Research Field:** Solid State Physics

**Career Stage:** finished master studies

**Research Profile** ([details](#)): First Stage Researcher (R1)

**Type of Contract: stipend**

**Status: Full-time**

Salary: 5000 PLN per month (grant funding, before obligatory employer and employee social security contributions).

## **Application details**

**Application deadline: 24/12/2020** Later applications will be not considered.

**Required materials:**

1. CV
2. List of publications
3. Email addresses (and, if possible, phone numbers) of the two academic/professional referees who may be contacted by the recruiting committee
4. Consent to process your personal data
5. Scan of MSc diploma or equivalent
6. Confirmed status of a PhD student

All materials should be submitted in electronic form to the address: [jobs@ifpan.edu.pl](mailto:jobs@ifpan.edu.pl) with Job ID in the subject.

### **Information clause – scholarship competition**

Pursuant to Article 13 paragraphs 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 (General Data Protection Regulation) Official Journal of the European Union, L 119, 4 May 2016, page 1, as amended, hereinafter referred to as “GDPR”, we hereby inform as follows:

1. The Institute of Physics of the Polish Academy of Sciences with its registered office in Warsaw, Al. Lotników 32/46, represented by its Director, is the Controller, i.e. an entity deciding about how your personal data will be used. You may contact the Controller using one of the contact forms available on the website: tel. (22) 116-2111, e-mail: [director@ifpan.edu.pl](mailto:director@ifpan.edu.pl)
2. The Director of the Institute of Physics of the Polish Academy of Sciences has appointed the Data Protection Officer (DPO), whom you may contact in matters relating to your personal data, by sending an email to the following address: [iodo@ifpan.edu.pl](mailto:iodo@ifpan.edu.pl)
3. Your personal data will be processed in connection with your participation in the scholarship competition and if you win the competition, in connection with receiving the scholarship – on the basis of your consent – Article 6 paragraph 1 item a GDPR.
4. Your personal data will be processed for a period of 6 months after the end of the scholarship competition and in the case of receiving the scholarship – for a period resulting from legal and tax regulations;
5. Your personal data will be made available to other entities that can finance and settle the scholarship granted and entities authorized under provisions of law. Your data will only be accessed by people authorized by the Controller;
6. Provision of your personal data is mandatory; in the event of failure to do so, you will not be able to participate in the scholarship competition;
7. You have the right to access your data, the right to rectify it and limit processing thereof;
8. You have the right to lodge a complaint to the President of the Office for Personal Data Protection, if you consider that the processing of your personal data violates provisions of the General Data Protection Regulation.

#### **Consent to processing:**

I hereby consent to the processing of my personal data contained in the application/request form by the Institute of Physics of the Polish Academy of Sciences to conduct the scholarship competition and in the case of being granted the scholarship, to pay and settle it. I provide my personal data voluntarily and I declare that it is accurate. I have read the content of the information clause.

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Date and signature