



Institute of Physics of the Polish Academy of Sciences

Scholarship for a PhD Student



Job ID: #JOB47/2020

Job Description

Job Title: Undergraduate student: polariton neural networks

Job Summary:

The polariton physics group invites to participate in an internship as part of a project financed by the National Science Center.

The duties of the scholarship holder will include conducting theoretical research, including modeling of optical systems and neural networks based on excitons. The research will include analytical and numerical calculations.

Job Description:

The aim of the internship is theoretical research on a new system of optical neural networks based on the physics of semiconductor systems. One of the main challenges of the modern world is to develop effective methods of processing information contained in big data. Artificial neural networks are one of the most important approaches to machine learning and artificial intelligence. However, current electronic technologies have significant limitations, as evidenced by the end of Moore's Law. Photonic systems are natural candidates for successors to electronic systems because, according to fundamental estimates, they can achieve much higher speed and energy efficiency. The ideal systems for this purpose are semiconductor exciton polaritons in which the excitations of light and matter coexist in a quantum superposition, similar to that of the Schrödinger cat.

Requirements:

1. Student in physics, preferably at the Master level,
2. Basic numerical modeling or programming skills,
3. Ability to work in a team,
4. Interest in the research project topic.

Main research field: Physics

Sub Research Field: Solid state physics

Career Stage: Early stage researcher

Research Profile ([details](#)): First stage researcher (R1)

Type of Contract: Temporary 12 months

Status: Part-time

Salary: 1000 PLN per month (untaxed scholarship).

Contact

More information can be obtained from
dr hab. Michał Matuszewski (e-mail: mmatu@ifpan.edu.pl).

Application details

Application deadline: October 22, 2020 Later applications will not be considered.

Required materials:

- Curriculum Vitae
- List of publications
- Consent to process your personal data
- Contact details of research supervisor or other collaborators.

All materials should be submitted in electronic form to the address: 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
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
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