Institute of Physics of the Polish Academy of Sciences

OPEN POSITION

Job ID: #JOB 108/2023

Job Description

Job Title: Postdoc in theory of dynamics of topological defects in quantum environments

Job Summary:

The Institute of Physics, Polish Academy of Sciences calls for applications for an open Postdoc position in the OPUS 21 research project funded by the National Science Centre (NCN).

The Postdoc will be involved in the development of theoretical understanding of the dynamics of topological defects, such as Majorana fermions in nanowires and quantum spin chains in the presence of quantum environments, such as photons and magnons.

Job Description:

Topology has found a route from purely mathematical concepts to physics applications. The discovery of the quantum spin Hall effect and topological insulators more than a decade ago has revolutionised modern condensed matter physics. One of the most exciting application is topological quantum computation with topological qubits such as the Majorana fermions emerging as excitations in topological superconductors. It is thus of great importance to investigate the dynamics of these excitations in the presence of the surrounding environments, such as photons or magnons. In the project, the postdoc will investigate theoretically the interplay between the geometry and/or topology of the braiding trajectories and the environmental degrees of freedom. The postdoc will also exploit such effects to construct long-range quantum gates between topological qubits and/or conventional qubits, and possibly simulating them on the IBM Quantum devices.

Profile of candidates for the Postdoc position:

1. A Ph.D. in physics (or PhD thesis submitted), obtained no earlier than 7 years before the beginning of the contract (calculated according to the official rules of NCN, resolution of NCN 26/2015 from 12 march 2015.)
2. Theoretical background in a related field, preferably in condensed matter theory and quantum information science, demonstrated by publications
3. Experience in analytical and numerical modelling
4. Ability to work in a team as well as independently
5. Fluent spoken and written English.

Main research field: Physics

Sub Research Field: Condensed matter physics

Career Stage: 0-7 years after PhD (Post-Doc)

Research Profile (details): Recognised Researcher (R2)

Type of Contract: Temporary 13 months

Status: Full-time

Salary: Approximately 8300 PLN per month (before ~ 30% taxes, exact amount depends slightly on applicable social security contributions).

Contact

All queries should be submitted to: open_positions@MagTop.ifpan.edu.pl or to Dr. Mircea Trif mtrif@magtop.ifpan.edu.pl. Please mention the Job ID in the subject.

Application details

Application deadline: 28 December , 2023. **Applications after deadline will not be considered.**

Required materials:

- Curriculum Vitae
- List of publications
- Motivation letter
- Scan of PhD diploma
- Contact data (e-mail) to at least two potential referees.
- Consent to process your personal data (expressed on the form attached to this announcement)

All materials should be submitted in electronic form to the **three** addresses: rekrutacja@ifpan.edu.pl, mtrif@magtop.ifpan.edu.pl and open_positions@MagTop.ifpan.edu.pl

Please mention the Job ID in the subject

DATA PROCESSING UNDER CONSENT FOR THE PURPOSES OF RECRUITMENT

Under Art. 13 sections 1 and 2 of the Regulation of the European Parliament and of the Council (EU) 2016/679 of 27 April 2016 on the protection of natural persons 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 Resolution), EU OJ L 119 of 04.05.2016, page 1, as amended, hereinafter referred to as "GDPR", we hereby inform as follows:

1. The Data Controller of the provided personal data is the Institute of Physics of the Polish Academy of Sciences, Al. Lotników 32/46, 02-668 Warsaw, phone (22) 116-2111, e-mail director@ifpan.edu.pl.
2. Contact details to the Data Protection Officer are as follows: e-mail iodo@ifpan.edu.pl
3. Your personal data shall be processed for the purpose of carrying out the recruitment process for the position of ……POSTDOC.....
4. Processing of your personal data in scope of: full name, date of birth, correspondence address, information about education and course of past employment shall take place under Art. 22^1 § 1 of the Act of 26 June 1974 - Labour Code. In the scope in which you sent to us more personal data than indicated above, we process your data under the consent granted by you.
5. Your personal data shall be stored for 1 month from completion of the recruitment process. If you grant consent for processing of personal data for future recruitments, we shall process your data until withdrawal of the consent by you, however, no longer than for the period of 6 months from the day of submittal of the application by you.
6. Provision of the abovementioned data in the scope indicated above is a statutory requirement resulting from Art. 22^1 § 1 of the Act of 26 June 1974 - Labour Code, in the remaining scope it is voluntary. Failure to provide the data referred to in Art. 22^1 § 1 of the Act of 26 June 1974 - Labour Code precludes consideration of your candidacy for the offered position.
7. You have the right to access your personal data, to rectify them, erase them, restrict their processing.
8. You may submit a complaint to the Inspector General for the Protection of Personal Data.
9. You have the right to withdraw the consent to process your personal data in the scope in which they were provided at any time. Withdrawing the consent does not affect the lawfulness of processing carried out on the basis of consent before its withdrawal.

Consent content:

☐ *I grant my consent to the Institute of Physics of the Polish Academy of Sciences to process my personal data contained in the sent recruitment documents for the purpose of carrying out the recruitment process for the position of ……POSTDOC……. .*

If you want us to consider your candidacy also in the future recruitment processes, please grant the additional consent:

☐ *I grant my consent to the Institute of Physics of the Polish Academy of Sciences to process my personal data contained in the sent recruitment documents in future recruitment processes taking place during 6 months from the day of appearance of this job*