



Institute of Physics of the Polish Academy of Sciences

Scholarship for a PhD Student



Job ID: #JOB 63/2021

Job Description

Job Title: PhD student – scholarship holder

Job Summary:

Properties and interactions of group IV-VI semiconductor multiferroics

Job Description:

PhD student will study the coupling between the ferromagnetic and ferroelectric properties of tunable multiferroic (Ge,Sn,Mn)Te system. Multiferroics, such as (Ge,Mn)Te, combine interplay between spin and orbital degrees of freedom, with fundamental breaking of symmetries. The combination of the above effects in a single material can be utilized in spin-torque manipulation of magnetic domains. The use of Rashba splitting for spin manipulation is important in view of recent outstanding discoveries of new quantum phases such as topological insulators, Weyl semimetals, and Majorana fermions. Acquired knowledge will be used to understand the spin-texture and domain wall dynamics of (Ge,Sn,Mn)Te multiferroics in view of possible applications in spintronics.

Requirements:

- High grades in core subjects at the master's level studies.
- Passing courses in physics at academic level.
- Knowledge of experimental techniques in condensed matter physics.
- Experience in laboratory work with ferromagnetic semiconductors.
- Interest in condensed matter physics, ability to work in an interdisciplinary team and learning new subjects.
- Analytical thinking, diligence in work.
- Computer programming skills at advanced level.
- Good spoken and written English skills.
- Ability to work under a pressure of time.
- High motivation for scientific work (publications, conference presentations or other achievements are highly welcome).
- Master's degree in physics (or an equivalent that qualifies one for PhD studies in physics in the country of issue).
- To be employed, the candidate must be accepted into the PhD school in which the Institute of Physics participates. Applications for the position are through recruitment to the School, online at warsaw4phd.eu.

Main research field: Physics

Sub Research Field: Semiconductor spintronics

Career Stage: Early stage researcher or 0-4 yrs (Post-graduate)

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

Type of Contract: Fixed term (36 months)

Status: Full-time

Salary: grant funding of **4500** PLN per month, before subtracting obligatory employer and employee social security contributions (~15%).

Contact

More information can be obtained from

Lukasz Kilanski (e-mail: kilan@ifpan.edu.pl)

<http://info.ifpan.edu.pl/ON->

[1/on13_pliki/LKilanski_Homepage/LKilanski_HomePage.html](http://on13_pliki/LKilanski_Homepage/LKilanski_HomePage.html)

Please make contact.

Application details

Application deadline: 4.1.2022 Later applications will not be considered.

Required materials:

- Scientific CV
- Cover letter
- Scan of MsC diploma or equivalent (or an explanation of when one is expected)
- Academic record (for finalized semesters)
- Recommended: A recommendation letter by an academic, or their contact email.

All materials should be submitted in electronic form by application to the PhD school warsaw4phd.eu, choosing the project: " Properties and interactions of group IV-VI semiconductor multiferroics ". (The application system will be active from 22 December 2021).

Results regarding the position will be made available by 10 February 2022.