



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



Job ID: #JOB41/2017

Job Description

Job Title: PhD student in theory of topological materials

Job Summary:

Participation in a scientific project focused on theoretical studies of nontrivial properties of topological crystalline insulators. Modelling of nanostructures and crystalline surfaces as well as investigation of topology of their electronic band structures.

Job Description:

PhD student will participate in the realization of National Science Center project (OPUS 2016/23/B/ST3/03725). The project builds on a recent discovery of a new class of quantum materials - topological crystalline insulators. In this class of materials specific crystal symmetries and inverted band ordering brought about by strong relativistic effects warrant the existence of metallic, topological surface states with Dirac-like energy dispersion and spin-momentum locking. The key research objective of this proposal is to study the impact of internal fields and defects on topological properties of these materials. The PhD student will be involved in:

- (1) theoretical studies of the electronic band structure of topological crystalline insulators in the presence of structural defects on the surface of bulk crystals as well as on the surfaces and interfaces of quantum nanostructures,
- (2) studies of possible topological phases.

Profile of the candidate

- Master's degree in physics (or last year of master studies) or related fields
- good English
- ability to work in a team,
- basic knowledge of solid state physics,
- an additional advantage are programming skills

The successful candidate will participate in International PhD Studies at IP PAS http://info.ifpan.edu.pl/msdifpan/Studium/index_en.htm. The scholarship may be awarded to the next candidate on the ranking list if the winner of the competition resigns from signing the scholarship agreement.

Main research field: Physics

Sub Research Field: Solid state physics

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

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

Type of Contract: Temporary 36 months

Status: Full-time

Salary: Depends on qualifications

From 3000 to 3000 PLN per month (before taxes). Untaxed scholarship

Contact

More information can be obtained from Ryszard Buczko (e-mail: buczko@ifpan.edu.pl).
(Add additional information if needed. Otherwise leave empty.)

Application details

Application deadline: December 11, 2017. Later applications may also be considered.

Required materials:

- Curriculum Vitae
- List of publications
(including conference presentations and other achievements, if any)
- Letter of motivation
- Transcript of record from undergraduate studies
- References: at least one reference with contact information (phone number(s) and e-mail address(es))

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