



Institute of Physics of the Polish Academy of Sciences

Scholarship for a PhD Student



Job ID: #JOB 39/2022

Job Description

Job Title: PhD student – scholarship holder

Job Summary:

Properties and structure of bundles of carbon nanotubes filled with magnetic halide phases.

Job Description:

The project is devoted to the advanced molecular scale structures, consisting of bundles, 2D and 3D networks of aligned carbon nanotubes filled with highly crystallographically aligned magnetic halide phases. Due to the pressure of the walls of the nanotubes, the classic limits of thermodynamics of crystals can be exceeded using this type of approach. We assume oriented filled nanotube bundles will create magnetic 2D and 3D superstructures which will have unusual magnetic properties. We propose for Ph.D. candidate, a research program concerning, determination of atomic structure of single walled carbon nanotubes (i.e. SWCNTs) using in particular metal halides of iron and others transition metals, using advance Transmission Electron Microscopy methods coupled with numerical modeling and image simulation. In following, linking this atomic structure with magnetic and optic properties of such nano-structures .

The project will be carried out in the frame of NCN project “In-situ TEM determination of the structure and nanomagnetism of bundles of carbon nanotubes filled with aligned magnetic phases” performed in scientific cooperation with the University of Warwick . More information about NCN project can be found

<https://ncn.gov.pl/sites/default/files/listy-rankowowe/2021-03-15bhga1/streszczenia/523873-en.pdf>

Requirements:

- a master degree in physics, chemistry, nanotechnology, material science or similar domains,
- programming skills in one of the languages: Python, C++, or similar,
- sufficient proficiency in English,
- knowledge of crystal structures of nanomaterials like carbon nanotubes,
- the ability to use the transmission electron microscope is an additional advantage.
- 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: Solis State Physics

Career Stage: Early stage researcher

Research Profile: First Stage Researcher (R1)

Type of Contract: Fixed term (45 months)

Status: Full-time

Salary: Scholarship: grant funding of 5000 PLN per month, before subtracting obligatory employer and employee social security contributions (~15%), for 45 months. Afterwards, standard Polish PhD scholarship (3240 PLN/month net in remaining part of 4th year).

Contact

More information can be obtained from

e-mail: kret@ifpan.edu.pl

Please make contact.

Application details

Application deadline: 10.08.2022. Applications submitted later will not be considered.

Required materials:

- M.Sc. diploma,
- Curriculum Vitae
- Recommendation letter or e-mail to supervisor of M.Sc.,
- List of publications,
- Motivation letter,
- Consent to process your personal data (expressed on the form attached to this announcement).

All materials should be submitted in electronic form by application to the PhD school warsaw4phd.eu, choosing the project: " Synthesis and structural investigation of bundles of carbon nanotubes filled with magnetic halide phases ". The application system will be active from 27 July 2021.

Results regarding the position will be made available by September 19, 2022.