



Job ID: #JOBS30/2017

Job Description

Job Title: PhD student in MBE growth and TEM studies of nitride semiconductor nanowires

Job Summary:

Studies of nitride semiconductor nanowires by transmission electron microscopy

Job Description:

The PhD student will participate in the NCN OPUS project "Mechanism of growth and application of GaN nanowires in new designs of optoelectronic devices and sensors". The project is focused on deepening our understanding of mechanisms of catalyst-free nucleation and plasma-assisted MBE (PAMBE) growth of nanowires (NWs) made of nitride semiconductors. The main goal is to use the knowledge and experience gained for preparation of specific nitride NW structures for new designs of optoelectronic devices and correlation of their characteristics with the steps used for their fabrication. Understanding of growth mechanisms as well as elaborated ways of their control will be used for studies of growth of spatially organized NW structures by selective area epitaxy, core-shell structures and for developing growth technology of ternary nitride NWs as needed in new devices to be elaborated within the project.

The student will be involved in MBE growth of nitride semiconductors nanowires and their post-growth characterization with the use transmission electron microscopy (TEM), scanning transmission electron microscopy (STEM), convergent electron beam diffraction (CEBD), energy dispersive X-ray spectroscopy (EDS), electron energy loss spectroscopy (EELS), focused ion beam (FIB) and scanning electron microscopy (SEM).

The PhD studies will be conducted according to the rules at IP PAS:

http://info.ifpan.edu.pl/msdifpan/Studium/index_en.html

Profile of a candidate for the PhD position:

1. MSc university degree in one of the following disciplines: physics, chemistry, electron technology or related
2. Ability to work in a team
3. High motivation for scientific work (publications, conference presentations or other achievements are highly welcome)
4. Experience in laboratory work in a clean-room environment
5. Analytical thinking, diligence in work
6. Good spoken and written English skills

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 for three years

Salary: 2500 PLN per month (tax-free scholarship)

Contact

More information can be obtained from Prof. dr hab. Piotr Dłużewski (e-mail: dluzew@ifpan.edu.pl) and Prof. Z.R. Zytkeiwicz (zytkie@ifpan.edu.pl)

Application details

Application deadline: 30 October 2017 Later applications may also be considered.

Required materials:

- Curriculum Vitae
- List of publications, conference presentations and other achievements
- Letter of motivation
- Transcript of record from undergraduate studies
- Reference contact person(s) (with 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.