



# Institute of Physics of the Polish Academy of Sciences

## Scholarship for a PhD Student



Job ID: #JOB 52/2021

### Job Description

**Job Title:** PhD student – scholarship holder

**Job Summary:**

**Rocksalt (MgZn)O alloys and (MgZn)O/MgO quantum structure and their application in deep-ultraviolet light-emitters**

**Job Description:**

ZnO-based materials have important potential industrial and medical applications due to their biocompatibility and biodegradability properties. The main goal of the project is to perform a systematic study of the  $Mg_xZn_{1-x}O$  alloys and quantum structures in RS phase: this study will include their epitaxial growth, the experimental determination of their fundamental physical properties (bandgap nature, energy bandgaps, bandgap offsets, etc.), which will be supported by theoretical simulations of their electronic and optical properties. In a second stage, we will exploit the grown quantum structures for demonstrating oxide-based emitters at wavelengths smaller than 300nm. The main outcome of the project will be a set of new oxide materials, enabling the fabrication of deep-UV emitting devices, and a proof-of-principle working device.

Requirements:

- 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](http://warsaw4phd.eu).

**Main research field:** Physics

**Sub Research Field:** Physics of semiconductors

**Career Stage:** Early stage researcher

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

**Type of Contract:** Fixed term (36 months)

**Status:** Full-time

**Salary:** grant funding of **5000** PLN per month, before subtracting obligatory employer and employee social security contributions (~15%).

### Contact

More information can be obtained from Henryk Teisserye

e-mail: [teiss@ifpan.edu.pl](mailto:teiss@ifpan.edu.pl)

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: "***Rocksalt (MgZn)O alloys and (MgZn)O/MgO quantum structure and their application in deep-ultraviolet light-emitters***"

(The application system will be active from 21 December 2021).

Results regarding the position will be made available by 3 February 2022.