

Open PhD student position (2 scholarships) within the National Science Centre project Sheng II at the Institute of Electronics and Academic Center for Materials and Nanotechnology of **AGH University** in Kraków, Poland. Partner of the project is **Tsinghua University** in Beijing, China.

"Quantum materials for control of spin-orbit torques"

"The project seeks to develop extremely low-power spintronic based nonvolatile memory and logic technologies with infinite endurance, through experimental studies of new quantum materials and devices that can greatly increase the efficiency of magnetization switching. With these materials, we will realize physical phenomena and device functionalities that are not possible in traditional polycrystalline metal-based spintronic. Range of hybrid materials will be designed, synthesized, dynamically tuned structurally and electronically, and integrated into the state-of-the-art MRAM devices."

As part of the work, PhD students will conduct experimental and simulation research on new quantum materials for applications in spin electronics. The tasks will include:

- Experimental work in cleanrooms on the preparation of prototype spintronic elements in the micro- and nano-meter scale
- design and implementation of magneto-transport measurements
- creation and modification of measurement software
- analysis of results, preparation of manuscripts for publication

We expect from candidates:

- Master Degree in the field of Electronics, Physics, Materials Engineering or related (finished by September 2023)
- passion for the implementation of an ambitious scientific project
- enrollment to the AGH doctoral school
- programming skills (LabVIEW, python)
- full-time involvement in the project
- previous experience in the field of research on new materials, micro and nano-electronics, microwave electronics is welcome

What we offer:

- attractive scholarships (min. 5,000 PLN + possibly an allowance from the doctoral school)
- work in a ambitious research team using the state-of-the-art technologies
- the possibility of attending international workshops, conferences, short scientific secondments
- opportunity to gain experience in the implementation of world-class research, familiarization with the latest techniques for the production of micro- and nano-electronic systems

The doctoral project should be completed within 3 years from the start of the 2024

Submissions containing:

- curriculum vitae, including information on completed/completed master's thesis
- cover letter containing a description of completed projects
- contact to a person who can certify skills and acquired experience

Please send to the email address:

Prof. Witold Skowroński, e-mail: skowron@agh.edu.pl, home.agh.edu.pl/~skowron