Open PhD Position
AG Nanomagnetism and Magnonics

Reference number: 10744

The “Nanomagnetism and Magnonics” Research Group under the direction of Prof. Dr. Andrii Chumak at the Faculty of Physics, University of Vienna is a young and ambitious team that conducts internationally leading research in the fields of spintronics and magnonics. The research scope of the group encompasses magnonics, magnon spintronics, quantum magnonics at low temperatures, magnon-based data processing, and nonlinear spin-wave phenomena in nanoscale hybrid systems. We are looking for a motivated praedoc assistant (PhD student) to extend our team. The overall aim of the position is to perform cut-edge experimental studies of spin-orbit-based magnon data processing at the nanoscale. A typical example of such investigations is a recently developed nano-scaled magnonic half-adder [https://arxiv.org/abs/1905.12353]. The aim of the position assumes the prolongation of the research direction of a magnon beyond-CMOS operations with binary data [Nature Physics 11, 453 (2015)].

For further information please contact Andrii Chumak andrii.chumak@univie.ac.at

Duration of employment: 4 years
Extent of Employment: 30.0 hours/week
Job grading in accordance with collective bargaining agreement: §48 VwGr. B1 Grundstufe (praedoc) with relevant work experience determining the assignment to a particular salary grade.

Job Description:
- Mastering of modern techniques for the fabrication of magnetic nano-structures with lateral sizes below 100 nm using e-beam lithography techniques.
- Investigations of the developed structures using microwave technique and modern micro-focused Brillouin Light Scattering (BLS) spectroscopy.
- Fabrication of nano-structures, performing experimental measurements, collection and analysis of new data.
- Publication and presentation of scientific results in peer-reviewed journals and at international conferences and workshops.
- Participation in research, teaching and administration.
- Participation in teaching and independent teaching of courses as defined by the collective agreement.

Profile:
- Master or Diploma in Physics. Listened lecture course on solid-state physics, magnetism or spintronics is desirable.
- Master topic in the field of magnonics or spintronics (ideally in the field of spin-orbit torque phenomena) or experimental quantum physics is desirable.
- General experience with approaches of numerical simulations is desirable.
- Affinity for practical work and cooperation in a multidisciplinary team.
- Initiative in finding solutions for scientific problems.
- Knowledge of principles of teaching.
- Excellent command of written and spoken English.

Applications including a letter of motivation, academic curriculum vitae, list of publications, evidence of teaching experience (if available), short doctoral project proposal, degree certificates (German or English) should be submitted via the Job Center to the University of Vienna (http://jobcenter.univie.ac.at) no later than 01.06.2020, mentioning the reference number 10744.