

Postdoctoral fellowship in nanoscale multiferroics



Uppsala University (UU) is an international research university focused on the development of science and education. The most important assets of the University are all the individuals who, with their curiosity and their dedication, make Uppsala University one of Sweden's most exciting work places.

The **Division of Solid State Physics** is part of the **Department of Engineering Sciences** and is located at Ångström laboratory in Uppsala. At the Division of Solid State Physics, we conduct both basic and application-oriented research. We are working on different research topics that involve the built environment energy systems, magnetic materials, and materials for energy, efficiency and environmental applications. As part of our research, several companies have been started.

Webpage: <https://www.teknik.uu.se/solid-state-physics+/>

Information about the project: The project will focus on the design and investigation of new low-dimensional multiferroic nanostructures for achieving high magneto-electric coupling. The materials of interest are emerging multiferroic composites. The candidate will synthesize multiferroic nanostructures and characterize them using basic and advanced tools. S/he will test their applicability for practical purposes through magnetic and dielectric measurements and other complementary techniques available across several research groups at UU.

The work will be performed at the Solid State Physics Division, Department of Engineering Sciences, Uppsala University.

Major responsibilities: The postdoctoral scholar will be mainly involved in the experimental work. S/he will be responsible for the synthesis of the composite nanostructures using template-assisted sol-gel synthesis as well as nanofabrication tools. Furthermore, magnetic and dielectric studies are also included in the project. There will be many opportunities for collaboration with other groups within the University, and the candidate will be expected to take active part in all such collaborations.

Position summary: Experimental research in the field of nanoscale multiferroics. Full-time scholarship. The position is initially for a period of 2 years (1+1), with possibility of further extension.

Qualifications: Highly motivated candidates with a doctoral degree in a relevant field. Demonstrated experience in one or more of the following synthesis skills is a must – synthesis of nanosystems via sol-gel technique, template-assisted growth and/or nanofabrication. Emphasis will also be given to knowledge of characterization techniques such as X-ray diffraction and electron microscopy, and ability to perform magnetic and dielectric experiments at low temperature and high magnetic fields. Experience in multiferroic systems, especially on the nanoscale, is a merit. The candidate should be willing to learn new techniques and develop new methods during the course of the project. Expertise in programming for analysis and/or instrumentation and presentation of scientific results should be outlined in the application. Adequate knowledge of English is a requirement.

The application should be written in English and include:

1. A letter of motivation with a short description of your research interests, and why you feel you are a good match for the project (maximum two pages, ideally one).
2. CV, including a description of the relevant skills and experiences, as well as a full publication list.
3. A copy of your Ph.D. degree or date of thesis submission.
4. Contact information of a minimum of two (ideally three) individuals, who can provide letters of reference to support your application, with a brief mention of how these individuals are professionally related to you.

Please send your application to tapati.sarkar@angstrom.uu.se.

Starting date: November 01, 2019 or as mutually agreed upon.

For further information about the position and scientific aspects of the application, please contact Dr. Tapati Sarkar, Division of Solid State Physics, Department of Engineering Sciences, Uppsala University, Sweden (email: tapati.sarkar@angstrom.uu.se).