

Postdoctoral fellowship in the field of functional magnetic nanomaterials

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 Materials Science and Engineering and is located at Ångström laboratory in Uppsala. At the division, we perform both basic and application-oriented research related to energy and environmental aspects in different research areas. We investigate physical and chemical properties of nanomaterials and compounds, whether it be for smart windows, gas sensors, photocatalytic coatings, spintronics and biomagnetic applications or to create new magnetic materials for environmental applications.

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

Information about the project: The project deals with the synthesis of novel nanostructured materials and the study of their magnetic and dielectric properties. Chemical synthesis methods such as sol-gel synthesis will be employed to synthesize nanoparticle systems and nanocomposites. Crystal structures and morphology will be investigated using X-ray diffraction and electron microscopy. Magnetic properties will be evaluated using SQUID and VSM-based magnetometry, while dielectric properties will be recorded using LCR meter and electrometer and a custom probe permitting their collection in applied magnetic fields.

The research will be performed at the Solid State Physics Division, Department of Materials Science and Engineering, Uppsala University, in collaboration with the Nanostructured Magnetic Materials Laboratory (nM2-Lab, website: <http://www.nm2lab.com>) headed by Prof. Davide Peddis, University of Genova, Italy, and other local and international partners.

Major responsibilities: The postdoctoral fellow will be responsible for the synthesis and characterization (structural, magnetic, dielectric) properties of the nanosystems. This includes the collection of data, as well as its analysis, and dissemination in scientific articles.

Position summary: Experimental research in the field of functional magnetic nanoparticle systems and nanocomposites. Full-time, tax-free scholarship. The position is for a period of 1+1 years.

Qualifications: This position requires highly motivated candidates with a doctoral degree in physics or a related field. Demonstrated experience in chemical synthesis, magnetic and dielectric measurements is a must. Experience in X-ray diffraction and Raman spectroscopy are also required. Expertise in programming for analysis and/or instrumentation and presentation of scientific results should be outlined in the application. We require very good written and oral skills in English as well as very good skills in writing scientific publications.

When assessing the applications, special emphasis will be placed on the applicant's documented experience in chemical synthesis and magnetic and dielectric measurements.

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 roland.mathieu@angstrom.uu.se no later than July 15, 2023.

Starting date: October 01, 2023, or as mutually agreed upon.

For further information about the position and scientific aspects of the application, please contact Dr. Roland Mathieu, Division of Solid State Physics, Department of Materials Science and Engineering, Uppsala University, Sweden (email: roland.mathieu@angstrom.uu.se; website: <https://www.materialvetenskap.uu.se/solid-state-physics+/research-groups/roland-mathieu-group/>).