UPPSALA UNIVERSITET

Postdoctoral fellowship in magnetic nanocomposites for environmental applications

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 will focus on the synthesis and characterization of magnetic nanocomposites and investigation of their potential as nano-adsorbents for heavy metal ion removal from water. The materials of interest are nanocomposites based on perovskite and spinel oxides. The candidate will synthesize the nanocomposites using solution-based synthesis techniques and characterize them using basic and advanced tools. S/he will test their applicability for practical purposes through adsorption and magnetic separation tests.

The work will be performed at the Solid State Physics Division, Department of Materials Science and Engineering, Uppsala University, in collaboration with University of Genova, Italy (Prof. Davide Peddis). The position will, therefore, necessarily involve regular travels between Uppsala and Genova, Italy.

Major responsibilities: The postdoctoral scholar will be involved in the experimental work. S/he will be responsible for sample synthesis and in-depth characterization of the samples.

Position summary: Experimental research in the field of magnetic nanocomposites. 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 synthesis of nanoparticles using chemical methods is a must. Knowledge of perovskite and spinel systems and experience in characterization tools like X-ray diffraction, scanning and transmission electron microscopy, adsorption analyzer, and basic magnetometry will be considered 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 no later than **February 28, 2023**.

Starting date: As soon as possible.

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