

SUNCAT Postdoctoral Position for Synchrotron X-ray Science

A postdoctoral research position is available at SUNCAT at SLAC National Accelerator Laboratory. The position is available immediately to work on a project developing and optimizing data processing techniques, together with guiding students and postdocs through the analysis from synchrotron based x-ray techniques. These techniques will primarily comprise grazing incidence scattering and spectroscopy, with the goal of elucidating the composition and structure of catalysts (thin films and nanostructures) under working conditions.

The SUNCAT Center for Interface Science and Catalysis is a partnership between SLAC National Accelerator Laboratory and the School of Engineering at Stanford University. SLAC is a multi-program laboratory owned by the U.S. Department of Energy's Office of Science and operated by Stanford University. At SUNCAT, we focus on interface science and the atomic-scale design of catalysts for the sustainable production of fuels, chemicals, and materials. A key strength of the efforts at SUNCAT is the ability to link theory and experiment, which requires a detailed understanding of the electrocatalyst surface under reaction conditions. A focus is placed on probing the electronic, structural and chemical properties of electrocatalyst systems under *operando* conditions by using the unique X-ray facilities available at SSRL and other National Laboratories. The postdoctoral fellow will play an integral role in all aspects of these X-ray characterization efforts.

The position will report to Prof. Thomas F. Jaramillo (Stanford University) and Simon R Bare (SLAC National Accelerator Lab).

Specific responsibilities include:

Work with SSRL and SUNCAT scientists to conduct data processing and analysis. This will involve developing and optimizing data processing techniques, and guiding students and postdocs through the analysis.

Work with a team to plan and design synchrotron based experiments, including the design and modification of *in situ* electrochemical cell(s) and establishing measurement protocols.

Co-ordinate pre-experiment activities with colleagues (students and postdocs) and beamline scientists to setup the beamline, along with conducting data collection for in-situ surface electrocatalysis and related experiments.

Interface with theoreticians at SUNCAT and Stanford to interpret the experimental results in terms of changes to the electronic and lattice structures of the surface of the active electrocatalyst under *operando* conditions.

The position is highly collaborative and will involve interacting with students, postdocs and staff scientists from SUNCAT on all aspects of the synchrotron-mediated research. The candidate will also maintain a safe working environment in the laboratory.

Qualifications:

- Ph.D. in physics, chemistry, materials sciences, chemical engineering, or related fields.
- Demonstrated experience in synchrotron X-ray characterization techniques, in particular hard x-ray scattering and spectroscopy.
- Proficiency in Python and/or Matlab, with a strong knowledge of data acquisition methodology.
- Familiarity with theoretical analysis of x-ray absorption spectroscopy (e.g.FEFF9, MXAN, DFT, etc) and/or knowledge of ab initio DFT methods a plus.
- Experience with electrochemical techniques and catalysis is a plus.
- Willingness to learn and bridge knowledge/experience gaps.
- Ability to work both independently and in a team environment.
- Ability to work and communicate effectively with a diverse population; good interpersonal skills are essential.
- Leadership, including the ability to coordinate efforts at SSRL, and to guide students and postdocs throughout all stages of the experiments.
- Effective written and verbal communication skills.

Applicants should include a cover letter, a brief summary of accomplishments/interests, a curriculum vitae, a list of publications, and names of 2-3 references for future letters of recommendation. Please send applications to Olayinka Popoola at opopoola@stanford.edu.