Postdoctoral Position at SSRL for *in-situ*/*operando* Catalyst Characterization for Catalyst Degradation

The Stanford Synchrotron Radiation Lightsource (SSRL), a Directorate of the SLAC National Accelerator Laboratory, Stanford University, and a national user facility, seeks a Ph.D. Postdoctoral Scholar with research interests and experience in synchrotron x-ray scattering and spectroscopy, with an emphasis on *in-situ*/*operando* characterization including methods for processing and interpreting large data sets.

The goal of the project is to develop machine learning (ML) models to predict the degradation/sintering of nanoparticle catalysts for the reverse water gas shift reaction, by combining experimental and computational training and target data. The project involves designing and conducting *in-situ*/*operando* X-ray absorption spectroscopy and X-ray scattering experiments to identify relevant descriptors to use as input for ML models. The project is highly collaborative and involves research groups at several US national labs and leading universities. The research is funded through US Department of Energy through the Accelerate Innovations grant, and the position is initially for 1 year, with the possibility of continuation based on a yearly evaluation.

The candidate will join a group at SSRL, under the guidance of Christopher J. Tassone, whose mission is to develop the next evolution of *in-situ* and *operando* methods which combine synchrotron characterization, lab-like capabilities at the beamline, and machine learning in order to predict the synthesis and evolution of materials and chemistry.

Qualifications:

- Ph.D. in physics, chemistry, materials sciences, or related fields.
- Background in *in-situ* and *operando* synchrotron x-ray methods, including development and deployment of complex sample environments, and python scripting for analysis of large data sets.
- Experience with X-ray absorption spectroscopy (XAS), including demonstrated ability in data analysis and modeling of XAFS data. Use of Athena/Artemis and/or Larch strongly preferred.
- Experience with X-ray scattering, including demonstrated ability in analyzing small and wide angle x-ray scattering data.
- Experience with heterogeneous catalysis preferred.
- Willingness to learn and bridge knowledge/experience gaps.
- Ability to work independently and in a team environment.
- Strong organizational skills a must.
- Ability to work and communicate effectively with a diverse population; good interpersonal skills are essential.
- Effective written and verbal communication skills.

Preview of applications begins immediately. Applications are accepted until the position is filled.
Please include a letter of motivation, C.V. with list of publications, and the contact information for two to three academic references.

**CONTACTS:** Please send application to Christopher J. Tassone, email: tassonea@slac.stanford.edu or contact for further details on the position.