Postdoctoral Position at SSRL for in-situ/operando Catalyst Characterization for Deconstruction and Upcycling of Polymers

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 interest and experience in X-ray characterization of catalysts.

Plastics have revolutionized modern life, but our reliance on these petroleum-based materials that persist for centuries is causing a pollution crisis and contributing to anthropogenic greenhouse gas emissions. To develop new technologies to address this problem, SLAC is participating as a partner laboratory within the consortium Bio-Optimized Technologies to keep Thermoplastics out of Landfills and the Environment, or BOTTLE, [www.bottle.org](http://www.bottle.org). The vision for BOTTLE is to deliver selective, scalable technologies to enable cost-effective recycling, upcycling, and increased energy efficiency. The BOTTLE consortium brings together an interdisciplinary team of leading experts to enable consistent comparisons of chemical and biological catalysis for plastics deconstruction and upcycling, innovative new ideas for industrial plastics, and internally consistent analyses for plastics upcycling.

This 2-3 year postdoctoral candidate will work as an integral member of the BOTTLE team at SLAC to study the geometric and electronic structure of homogeneous and heterogeneous catalysts using a combination of in-situ/in-operando hard- and soft-X-ray absorption spectroscopy, EXAFS, X-ray emission spectroscopy, and resonant inelastic X-ray scattering with a focus on identification of the active species.

The candidate will participate with other BOTTLE team members to design in-situ/operando experimental characterization tools and utilize these tools to provide insight that will allow the design of improved, next generation catalysts. The candidate will work on all aspect of the in-situ/operando characterization including designing the experiments, conducting the research, analyzing, interpreting and reporting the results.

Qualifications:

- Ph.D. in chemistry, chemical engineering, physics, materials sciences or related fields.
- Experience with all aspects of synchrotron X-ray scattering, including running synchrotron experiments and quantitative analysis of small and wide angle x-ray scattering data.
- Knowledge in the synthesis of nanostructured materials, ex-situ and in-situ advanced characterization, including synchrotron-based X-ray techniques, and testing of various types catalytic materials and/or polymeric materials.
- 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.
Please send a letter with CV and list of publications, and names of two references, to the address below:

Christopher J. Tassone, email: tassone@slac.stanford.edu