Postdoctoral Associate – Total Characterization of Perovskite Films for Enhanced Stability

The Stanford Synchrotron Radiation Lightsource (SSRL), a directorate of the SLAC National Accelerator Laboratory, has an opening for a Postdoctoral Scholar to utilize X-ray scattering and spectroscopy to study lead halide perovskites for photovoltaic applications. This role is part of a large collaborative effort with researchers at the National Renewable Energy Laboratory (NREL) and CubicPV.

This position will involve highly detailed structural characterization of metal halide perovskite thin films and photovoltaic devices, including in situ and operando measurements to study degradation mechanisms. You will be responsible for structural characterization across length scales, from the local and long range atomic structure up to microstructural characterization. Structural characterization will focus on advanced X-ray methods and instrumentation, some of which may need to be developed as part of this project, with a focus on how the details of the structure (i.e. phase partitioning, strain, and crystalline texture) are related to device degradation. In addition to advanced characterization, this role will involve developing machine learning approaches to identify those structural descriptors which are closely tied to material stability which will guide development of more stable solar cell materials.

Qualifications:
- Ph.D. in physics, chemistry, chemical engineering, materials sciences, or related field.
- Experience with X-ray scattering experimentation and analysis is a must, including demonstrated ability in Rietveld refinement.
- Experience with synchrotron X-ray methods development
- Experience with thin film synthesis and/or characterization desired
- Experience with programming, preferably Python
- Good interpersonal skills and strong communication skills
- Ability to work independently and in team
- Experience working within large inter-university collaborations is strongly desired

Interested applicants should submit a cover letter, CV, and names of two potential references to Kevin H. Stone, khstone@slac.stanford.edu