Postdoctoral Position at SLAC National Accelerator Laboratory

Position: Postdoctoral Researcher
Location: High Energy Density Science Division, SLAC National Accelerator Laboratory
Start Date: Feb.1, 2025
Duration: 2 years

Overview:
The High Energy Density Science Division at SLAC National Accelerator Laboratory invites applications for a postdoctoral researcher to join a pioneering research team studying how radiation-induced effects impact the phonon properties of W-Re alloys. These alloys are featured by unique transport and mechanical properties, making them attractive for use as the first-wall materials for nuclear fusion reactors. Our goal is to validate fundamental modeling of these materials under extreme fusion environments. This research will conduct a new class of pump-probe experiments capable of characterizing materials' behavior with atomic-scale temporal and spatial resolutions. These pump-probe experiments will utilize the state-of-the-art time-resolved scattering techniques based on ultrafast electrons and high-brightness X-rays from the Linac Coherent Light Source at SLAC. Details of our measurement techniques can be found in *Science Advances 10, eadk9051(2024)*. This position offers a unique opportunity to lead innovative research at the forefront of materials science and fusion energy.

Key Responsibilities:

- **Lead Experimental Efforts:** Design, execute, and analyze experiments using ultrafast electron diffraction (UED) and X-ray Free Electron Laser (XFEL) to investigate the ultrafast materials behavior of W-Re alloys implanted with radiation effects.
- **Collaborative Research:** Work closely with a multidisciplinary team of scientists at SLAC and Stanford University to advance the understanding of fusion materials.
- **Data Analysis:** Utilize advanced computational tools for data interpretation and contribute to the development of new methodologies.
- **Publication and Communication:** Prepare research findings for publication in peer-reviewed journals and present results at conferences and workshops.

Qualifications:

- Recent Ph.D. in materials science, ultrafast science, condensed matter physics, or a related discipline
- Prior experience with irradiation damage and nanofab-relevant techniques (e.g. TEM, SEM, FIB) is a strong plus
- Proficient written and verbal communication skills, with the ability to author scientific reports and publications, and deliver scientific presentations
- Effective interpersonal skills necessary to collaborate in a team environment
- Ability to perform independent research

Application Instructions:
Interested candidates should submit the following materials:

1. **A cover letter** outlining your research experience and how it aligns with the goals of this project.
2. **Curriculum vitae (CV)** including a list of publications.
3. **Contact information for one to two references.**

Application Deadline: Open until filled
Contact Information: PI: Dr. Mianzhen Mo, Email mmo09@slac.stanford.edu
Google scholar of the PI: https://scholar.google.com/citations?user=VTTKyIoAAAAJ&hl=en&oi=ao