SANDIA NATIONAL LABORATORIES

Low Temperature Plasma Modeling Postdoctoral Position
Thermal, Fluid and Aero Sciences Group

Sandia National Laboratories is the nation's premier science and engineering lab for national security and technology innovation. We are a world-class team of scientists, engineers, technologists, postdocs, and visiting researchers all focused on cutting-edge technology, ranging from homeland defense, global security, biotechnology, and environmental preservation to energy and combustion research, computer security, and nuclear defense.

The hosting organization, Nanoscale and Reactive Processes, includes work in plasma device modeling, vacuum arc physics, energetic materials, and nanoscale fluid modeling. The work consists primarily of theoretical studies, model and code development, application of models to real systems, and comparison of simulation results to experimental data for purposes of discovery and code predictivity validation. Specific projects support a diversity of both internal and external customers including other federal entities and US industry.

Job duties:

The postdoc will interface with Sandia researchers and internal partners working with low temperature plasma devices. Specific technical areas of interest include vacuum arc discharge, plasma chemistry, surface chemistry, and algorithm design and enhancement to manage large transient variations in density and reactivity in a high performance computing environment. The primary simulation tool is based on a kinetic plasma description using Particle-In-Cell (PIC) and Direct Simulation Monte Carlo (DSMC) methodologies, although extensive excursions away from basic methods are expected and encouraged. The postdoc will be performing a combination of model development, code development, testing, and application of new models. They will have access to world-leading computational resources.

Job requirements:

A doctoral degree in Engineering, Physics, Science or other technical discipline. Strong communication, organizational and problem-solving skills. The ability to work in a dynamic environment. The ability to work in a team environment.

Desired skills:

Background in computational plasma modeling. Experience in one or more of the above technical areas. Experience working in a massively parallel high performance computing environment. Experience working within highly multidisciplinary dynamic teams.

<u>The ability to obtain a Department of Energy security clearance is required for these positions, which requires United States Citizenship.</u>

Please apply to posting #637352 at www.sandia.gov/careers

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