Sandia National Laboratories

LIVERMORE, CALIFORNIA

POSITION: Postdoctoral Appointee – Computational Plasticity **JOB ID:** 61112

MANAGER: Mike Chiesa

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. To learn more, visit http://public.ca.sandia.gov/casite/.

DEPARTMENT DESCRIPTION

The Mechanics of Materials Department performs experimental and analytical studies to understand the mechanical behavior of materials. Our experimental work covers the entire discovery–characterization–validation spectrum. Motivated by observations, we develop models to simulate material responses under various loading and environmental conditions. The fidelity of our models and simulations varies from atomic to continuum scales corresponding to the requirements of Sandia applications. The accuracy of models for specific applications is validated by experimental data. Numerical codes are developed to allow the implementation of material models in high-performance computing simulations.

JOB DESCRIPTION

A postdoctoral position is available for an applied mechanics engineer with a strong background in computational constitutive model development. The work will support our current projects in the areas of continuum plasticity and failure modeling. The applicant will also be expected to implement models into Sandia computer codes for high-performance computing simulations. In addition, the candidate will collaborate with structural analysts to apply these advanced models to Sandia applications.

QUALIFICATIONS

This position requires a recent Ph.D. (conferred within the last five years) in applied mechanics or a related field. Other required qualifications include (1) significant experience in constitutive model development, including large-deformation plasticity and damage mechanics; (2) strong communication skills; (3) the ability to function in a team environment with other developers, analysts, and our customers; (4) a demonstrated ability to publish in technical journals; and (5) proficient programming skills (either C++ or FORTRAN).

Desired qualifications for this position include (1) knowledge of materials science; (2) knowledge of parallel computing; (3) experience with large, general-purpose computer codes; and (4) a background in anisotropic plasticity.

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ABOUT SANDIA

Located in Livermore, Sandia/California enjoys close proximity to San Francisco, Silicon Valley, several world-class educational institutions, and diverse cultural and year-round recreational opportunities. Sandia provides employees with a comprehensive benefits package that includes medical, dental, vision, and a 401(k) savings plan. Our culture values work-life balance; we offer programs such as flexible work schedules with alternate Fridays off, on-site fitness facilities, three weeks of vacation, and more.