



The Combustion Institute

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Research Staff in Exascale Simulation of Reacting Flow Systems

We seek to hire a staff researcher (R&D Mechanical Engineer) with experience in high-performance numerical simulations of reacting flows as well as programming methods for effectively using DOE Leadership Class Supercomputers.

Location: Livermore, CA

On any given day, you will:

- Work as part of a multi-disciplinary team to develop software for parallel direct numerical simulation and hybrid direct numerical simulation and large-eddy simulation of turbulent reacting flows coupled with fuel spray, soot formation and oxidation, and thermal radiation over nontrivial geometry on exascale computing platforms.
- Collaborate with other researchers across Sandia, at other national labs, and in academia.

The team's research will result in influential publications in major scientific journals and widespread recognition within the international scientific research community, as well as important contributions to the long-term energy and environmental mission objectives of the U.S. Department of Energy.

Department Description:

Experimental and computational modeling studies of reacting flow phenomena relevant to combustion processes.

About Sandia:

Sandia National Laboratories is the nation's premier science and engineering lab for national security and technology innovation, with teams of specialists focused on cutting-edge work in a broad array of areas. Some of the main reasons we love our jobs:

- Challenging work with amazing impact that contributes to security, peace, and freedom worldwide
- Extraordinary co-workers
- Some of the best tools, equipment, and research facilities in the world

- Career advancement and enrichment opportunities
- Flexible schedules, generous vacations, strong medical and other benefits, competitive 401k, learning opportunities, relocation assistance and amenities aimed at creating a solid work/life balance*

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*These benefits vary by job classification.

Essential Requirements

To be successful in this role, you have excellent interpersonal skills along with enthusiasm for working as part of a collaborative, interdisciplinary research team.

You have the following:

- PhD in engineering, computational sciences, physical sciences, or mathematics, with expertise in high-performance scientific computing, including parallel programming.
- Expertise and research interests in one or more scientific research fields.

Desired:

- You have prior research expertise in GPU programming and machine learning as well as a deep understanding of hardware architecture and C++/Python.
- You have research experience in direct numerical simulation, turbulence, combustion, sprays, chemical kinetics, quantum chemistry, and/or uncertainty quantification.
- You have a robust publication record as well as experience with proposal development and research leadership.

Security Clearance:

This position does not currently require a Department of Energy (DOE) security clearance.

Sandia will conduct a pre-employment drug test and background review that includes checks of personal references, credit, law enforcement records, and employment/education verifications. Furthermore, employees in New Mexico must pass a U.S. Air Force background screen for access to Kirtland Air Force Base. Substance abuse or illegal drug use, falsification of information, criminal activity, serious misconduct or other indicators of untrustworthiness can cause access to be denied or terminated, resulting in the inability to perform the duties assigned and subsequent termination of employment.

If hired without a clearance and it subsequently becomes necessary to obtain and maintain one for the position, or you bid on positions that require a DOE security clearance, a pre-processing background review that includes checks of personal references, credit, law enforcement records, and employment/education verifications may be conducted prior to a required federal

background investigation. Applicants for a DOE security clearance must be U.S. citizens. If you hold more than one citizenship (i.e., of the U.S. and another country), your ability to obtain a security clearance may be impacted.

How to Apply

Apply here: https://sandia.jobs/livermore-ca/research-staff-in-exascale-simulation-of-reacting-flow-systems/F8A067E67B114BB4927611A5C53A3289/job/?utm_campaign=DE-Pilot&utm_source=CombustionInstitute&utm_medium=JOBS

EEO Statement:

All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, disability, or veteran status.

This Limited Term Employee (LTE) position is a temporary position for one year term, which may be renewed at Sandia's discretion up to a maximum of seven years.

Individuals in LTE positions may bid on regular Sandia positions as internal candidates, and in some cases may be converted to regular career positions during their term if warranted by ongoing operational needs, continuing availability of funds, and satisfactory job performance.

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