



**The Combustion Institute**

5001 Baum Boulevard, Suite 644  
Pittsburgh, Pennsylvania 15213-1851 USA

Ph: (412) 687-1366

Office@CombustionInstitute.org

Fax: (412) 687-0340

CombustionInstitute.org

---

*The Combustion Institute posts job listings for the convenience of our international combustion community. CI does not endorse this job listing or the employer. Please do not contact CI for job-related information. Refer to the full disclaimer at the end of this document.*

## **Low Temperature Plasma Physics Postdoctoral Appointee with Sandia National Laboratories in Albuquerque, New Mexico, United States**

This postdoctoral position is a temporary position for up to one year, which may be renewed at Sandia's discretion for up to five additional years. The candidate's PhD must have been conferred within five years prior to employment.

Individuals in postdoctoral 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.

Our team is seeking a Postdoctoral Appointee to conduct research on low temperature plasmas for a wide range of applications. You will use state-of-the-art computational tools and clusters to develop new scientific insights and aid Sandia in its mission to serve the nation. In collaboration with experimental team members, you will validate computational models and develop new ones to enable predictive design.

Key functions of this role include, but are not limited to:

- Establishing new scientific insight on the physical mechanisms underlying low temperature plasmas
- Publication of scientific results and participation in the scientific community
- Leveraging existing plasma simulation tools for new applications
- Developing or otherwise supporting the development of new physical models for existing computational tools.
- Validation and verification of plasma simulation tools in collaboration with experimentalists

### **Essential Requirements**

The position requires:

- Ph.D. in Physics, Electrical Engineering, Nuclear Engineering, Mathematics, or closely related discipline

- Experience in using and/or developing computational models of physical phenomena
- Experience in one or more of the following: gas/plasma chemistry, electrical discharge (vacuum to atmospheric pressures, low to high currents), hydrodynamics, dusty plasmas, plasma-surface interactions, laser-surface interactions, or solid-state physics
- Able to obtain and maintain a DOE L-level security clearance

Desired:

- The motivation and ability to tackle technical problems independently
- Good communication and interpersonal skills
- Proficiency in code development with C/C++
- Experience in model and algorithm development for computational simulation
- Background in developing algorithms for HPC platforms

### How to Apply

[Click this link](#) for more details and to apply.

### Department Description:

Our department is a multidisciplinary group of experts in three areas: Low Temperature Plasma Physics, Laser and Optical Diagnostics, and Thermal Characterization of Materials. We work with groups in Sandia and other entities to develop the science that enables engineering solutions. The Low Temperature Plasma Physics thrust has ongoing work in sheath physics, plasma-driven chemistry, plasma-surface interactions, arc discharges (from vacuum to high pressure), charged particle transport, and more. To study this wide array of phenomena, we possess both experimental and computational experts that work together to produce new understanding. The plasma codes we use range from fully kinetic, through hybrid, to fluid models. We also actively use and develops models for surface properties, electromagnetic propagation, and more. Experimentally, we have developed a variety of sources including multipole confinement systems, CCP/ICP RF plasmas, and atmospheric pressure plasma systems. We use a variety of diagnostics to examine these systems and are actively involved in the development or use of advanced laser diagnostics, other spectroscopic techniques, physical probes, RF sensing, and more.

The Laser and Optical Diagnostics thrust conducts innovative research and application development in LIDAR remote sensing, laser sources and characterization, and optical spectroscopy providing unique, real-time, non-contact, in-situ optical diagnostic capabilities. The Thermal Characterization thrust researches the fundamental thermal properties and decomposition products and pathways of a wide variety of materials experiencing an expansive range of environments. This work entails both state-of-the-art diagnostics as well as developing custom diagnostics and techniques to provide information on the underlying science of thermal behaviors of materials.

**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\*

World-changing technologies. Life-changing careers. Learn more about Sandia at:  
<http://www.sandia.gov>

\*These benefits vary by job classification.

**Security Clearance:**

Position requires a Department of Energy (DOE)-granted L-level security clearance.

Sandia is required by DOE directive to conduct a pre-employment drug testing, and a pre-employment background review that includes personal reference checks, law enforcement record and credit checks, and employment and education verifications. Applicants for employment must be able to obtain and maintain a DOE L-level security clearance, which requires U.S. citizenship.

Applicants offered employment with Sandia are subject to a federal background investigation to meet the requirements for access to classified information or matter if the duties of the position require a DOE security clearance. Substance abuse or illegal drug use, falsification of information, criminal activity, serious misconduct or other indicators of untrustworthiness can cause a clearance to be denied or terminated by the DOE, rendering the inability to perform the duties assigned and resulting in termination of employment.

**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.

[Click this link](#) for more details and to apply for the position.

*disclaimer on next page*

***The Combustion Institute Disclaimer***

*The Combustion Institute posts job listings for the convenience of our international combustion community. CI does not endorse or recommend employers, and listed job opportunities do not constitute an endorsement or recommendation. CI explicitly makes no representations or guarantees about job listings or the accuracy of the information provided by the employer. CI is not responsible for safety, wages, working conditions, or any other aspect of employment without limitation. Please do not contact CI for job-related information.*