

Plasma Physics Computational - Postdoctoral Appointee
Sandia National Laboratories
Albuquerque, NM

What Your Job Will Be Like

Are you passionate about your work and dream of utilizing state-of-the-art facilities to explore solutions? If you want to join a diverse team that solves significant issues for our nation's security, check us out!

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'll validate computational models and develop new models to enable predictive design and to investigate fundamental phenomena.

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

- Establishing new scientific insight on the physical mechanisms underlying low temperature plasma phenomena
- Publication of scientific results and participation in the scientific community
- Using existing plasma simulation tools for new applications
- Developing physical models for new and existing simulation capabilities
- Collaborating with partners through Sandia's Low Temperature Plasma Research Facility
- Validation and verification of plasma simulation tools in collaboration with experimentalists

Qualifications We Require

- You have, or are pursuing, a PhD in Physics, Electrical Engineering, Nuclear Engineering, Mathematics, or closely related field
- 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, plasma-surface interactions, laser-surface interactions, or solid-state physics
- Able to acquire and maintain a DOE L-level security clearance

Qualifications We Desire

- Good communication and interpersonal skills
 - The motivation and ability to handle technical problems independently
 - Experience working with experimental results for model validation
 - Proficiency in scientific programming in some language (e.g., C++, Python)
 - Background in atomic and molecular physics
 - Experience developing plasma chemistry models
 - Experience in model and algorithm development for computational simulation
 - Experience working with HPC platforms
 - Experience in experimental work in low temperature plasmas
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About Our Team

Our department is a multidisciplinary group of specialists 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 chemistry, plasma-surface interactions, arc discharges (from vacuum to high pressure), high energy electron beams, 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 include fully kinetic, hybrid, and fluid models. 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. There may be an opportunity for this position to perform experimental work directly, in addition to the primary modeling work.

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 a 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.

Position Information

This postdoctoral position is a temporary position for up to one year, which may be renewed at Sandia's discretion up to five additional years. The 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.

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.

Security Clearance

Sandia is required by DOE to conduct a pre-employment drug test and background review that includes checks of personal references, credit, law enforcement records, and employment/education verifications. Applicants for employment need to be able to obtain and maintain a DOE L-level security clearance, which requires U.S. citizenship. 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.

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, resulting in the inability to perform the duties assigned and subsequent termination of employment.

EEO

All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age, disability, or veteran status and any other protected class under state or federal law.

Application Process:

1. Select the link to access our careers site.
2. Sign In to access your account or if you are not an existing user select the New User link to create one.
3. Review the job description and select the Apply button to begin your application.

https://cg.sandia.gov/psp/applicant/EMPLOYEE/HRMS/c/HRS_HRAM_FL.HRS_CG_SEARCH_FL.GBL?Page=HRS_APP_JBPST_FL&Action=U&FOCUS=Applicant&SiteId=1&JobOpeningId=674043&PostingSeq=1&SiteId=1

For more information:

Shane M. Sickafoose, Ph.D.
Manager, 1865
Applied Optical and Plasma Sciences
Sandia National Laboratories
smsicka@sandia.gov