

# Postdoctoral Appointee - Fire Science & Technology Optical/Laser Diagnostics

## Location: Albuquerque, NM – Temporary/Full-time

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.

## What Your Job Will Be Like

We are seeking a Postdoctoral Appointee to support the thermal diagnostic programs at the Thermal Test Complex (TTC), a one-of-a-kind national asset! Are you passionate about research? Are you dreaming of an opportunity to thrive in a multidisciplinary team environment that offers access to state-of-the-art testing facilities? If so, you will want to apply for this opportunity.

On any given day, you may be called on to:

- Work with a dynamic team of fire scientists, engineers, technologists, and trades people to design, build, and perform fire and radiant heating experiments supporting a diverse set of missions, including nuclear weapons development and qualification missions
- Collaborate on multiple research projects in the areas of combustion, fire, pyrolysis, and multiphase flows with experiments conducted at lab-scale and in Sandia's world-class large-scale testing facilities
- Conduct independent research and perform analysis of large experimental data sets using computer programming and image processing
- Develop and field diagnostic tools under mentorship of Sandia technical experts
- Augment the body of knowledge through the publication and presentation of research results to the scientific community
- Provide insight into physical phenomena of fires and the fate of objects exposed to abnormal thermal environments, generating data for building and validating heat transfer and thermal response models, and qualifying the safety and performance of nuclear weapons and other systems of relevance to national security

## Qualifications We Require

- PhD, conferred within 5 years prior to employment, in engineering, physics, chemistry or a related field
- Experience performing experimental research utilizing spectroscopic techniques
- Experience in optical diagnostics with background in laser- or x-ray-based techniques
- Experience with computer programming skills/experience in LabVIEW, Matlab, C++, FORTRAN, or similar language
- Outstanding communication skills, as evidenced by a demonstrated record of peer-reviewed journal publications and/or conference presentations
- Ability to obtain and maintain a DOE Security Clearance

## Qualifications We Desire

- Experience in the design, fabrication and/or deployment of small or large optical, mechanical, and/or electrical test systems
- Experience with one or more of the following diagnostic approaches:
  - Laser-induced fluorescence (LIF)
  - Particle-image velocimetry (PIV)
  - Thermographic phosphors
  - Infrared imaging or pyrometry
  - X-ray Fluorescence (XRF)
- Experience in image processing (ex. Fourier analysis, feature tracking) and producing data processing algorithms
- Familiarity with multiple detector architectures (ex. CCD, CMOS, CdTe)
- Ability to independently guide research while working in the context of a larger team
- Ability to obtain and maintain a sigma 15 clearance (subject to random polygraph)

## About Our Team

The Fire Science and Technology Department performs experimental and phenomenological fire research to support Sandia's national security mission. The main focus of the department is to ensure the safety and security needs of nuclear weapons in abnormal thermal environments. The department offers a spectrum of computational and experimental capabilities for addressing fire related challenges throughout the government, civilian, and industrial sectors. Efforts in the computational arena include development of physics-based subgrid models for phenomena important to fire dynamics, detection and suppression. The department maintains and operates unique facilities for radiant heating, open and enclosed large fires. These facilities are used in conjunction with new diagnostics and experimental capabilities developed and employed to provide data for discovery, validation, and system qualification. The group interacts extensively with complementary technical organizations in computational sciences and thermal and fluid sciences within the Center, across the laboratory, and with academia and government.

*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*

Apply online at:

**[sandia.gov/careers](http://sandia.gov/careers)**

**Job #: 687430**

## About Sandia:

Our culture values work-life balance; we offer programs such as flexible work schedules with alternate Fridays off, on-site fitness facilities, and three weeks of vacation. Sandia provides employees with a comprehensive benefits package that includes medical, dental, vision, and a 401(k) with company-match.

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, post docs, 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.

*World-changing technologies.  
Life-changing careers.*

Learn more about Sandia:

**[www.sandia.gov](http://www.sandia.gov)**