

Hypersonic Fluids Diagnostics Postdoctoral Appointee



Location: Albuquerque, NM
Full-Time, Temporary

What Your Job Will Be Like

We are seeking a Postdoctoral Appointee to support the development and use of advanced fluids diagnostics for experiments primarily in Sandia's Hypersonic Wind Tunnel (Mach 5, 8, and 14), with some work involving the Trisonic Wind Tunnel as well (Mach 0.5 – 3.0). Experiments will utilize modern optical diagnostics to obtain high-fidelity data to enable physical discovery and support the development of computational models. Opportunities exist to collaborate on research spanning multiple disciplines, including experimental fluid dynamics, shock/boundary-layer interactions, fluid/structure interactions, signal processing, image processing, and novel diagnostics for hypersonic flows.

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

- Working with the mentorship of Sandia staff to design, conduct, and analyze experiments as part of established research programs
- Assisting in the publication and presentation of results to the scientific community
- Performing all duties in compliance with operational safety, security and quality guidelines

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.

Qualifications We Require

- PhD, conferred within 5 years prior to employment, in Mechanical Engineering, Aerospace Engineering, or other related engineering or natural science field
- Experience with experimental fluid dynamics and wind-tunnel testing
- Experience with the design, development, implementation, and maintenance of unique hardware for wind-tunnel experimentation and optical diagnostic systems
- Experience with laser-based flow diagnostics such as PIV, PLIF, CARS, FLEET, PSP, TSP or similar techniques, or experience with other optical diagnostics such as DIC, BOS, or Schlieren imaging
- Ability to obtain and maintain a DoE Q clearance

Qualifications We Desire

- Experience with instrumentation electronics and Labview, Matlab, Tecplot, Solidworks or equivalent software packages
- Experience with surface measurement sensors for pressure, temperature, etc
- Experience with signal processing or image processing algorithms
- Experience with unsteady hypersonic flow experiments, fluid-structure interactions, or shock-boundary layer interactions
- Thorough knowledge of and applied experience with scientific and engineering methods and with discipline's standards for the ethical conduct of research
- Strong verbal and written communication skills and an ability to interact well with fellow technical workers with diverse technical backgrounds

About Our Team

The Aerosciences Department offers challenging and important work relating to national security in R&D and technology applications in aerodynamics, aerothermodynamics, compressible fluid mechanics, and flight dynamics. Our primary mission supports U.S. Department of Energy Defense Programs, and aerosciences projects funded through the U.S. Department of Defense, DARPA, NASA, and industry.

Our projects span the Mach number range from subsonic through hypersonic and involve systems ranging from aircraft released ordinance to reentry systems and rocket systems. Technical activities include experimental, analytical, and computational efforts plus support of flight test activities, both pre-flight/post-flight analyses and field test operations. The Aerosciences Department maintains a strong balance of research and development activities and works synergistically with other organizations at Sandia to meet current and future customer needs.

To Apply:

Visit:
sandia.gov/careers and search for job number **658089**

About Sandia:

Sandia provides employees with a comprehensive benefits package that includes medical, dental, vision, and a 401(k) with company-match. 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. In addition, Sandia/California enjoys close proximity to San Francisco, the Silicon Valley, first-tier universities, and diverse cultural and year-round recreational opportunities.

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.