

## SOUTHWEST RESEARCH INSTITUTE - JOB OPENING

### RESEARCH ENGINEER - SR. RESEARCH ENGINEER - COMBUSTION RESEARCH/PROPULSION & ENERGY

Job Code: 18-01260

## Who We Are:

Join the Propulsion and Energy Section to conduct contract engineering for applied research and development in the industries of oil & gas, air-breathing propulsion, power generation, and liquid propulsion.

## Objectives of this Role:

- Conduct applied combustion research to develop and demonstrate new technologies to support both government and commercial customers.
- Adapt your skill set to new problems and application areas.
- Each project has a new challenge and something to learn.
- Rely on engineering fundamentals, literature, modeling tools, and team experience to overcome challenges and be successful.
- Conduct combustion design and analysis studies using low-fidelity chemical kinetic computations as well as highly detailed CFD simulations.
- Support combustion test development and operations for current test rigs at SwRI as well as future prototype combustion testing.
- Act as a primary technical focal point for combustion R&D.
- Be a solution-oriented problem solver that exercises creativity and independent judgement in determining approaches to solve a wide range of technical problems with minor supervision.
- Write technical reports, papers, and prepare technical presentations for client meetings and conferences.
- Attend and present at conferences or other events to actively promote SwRI business.

## Daily and Monthly Responsibilities:

- Provide analytical or experimental support to more than one project in a team environment, which can include literature reviews, testing, design, and simulation development.
- Use commercial engineering software for design and analysis, such as computational fluid dynamics (CFD).
- Contribute technical development of experimental test programs, including developing/operating a new test rig.
- Direct testing & modification of a test rig to meet new project objectives.
- Advise the technical work of other engineers/technicians to combustion testing/simulations.
- Conduct applied combustion research in a variety of applications including power generation, propulsion, direct-fired oxy-combustion, alternative fuels (hydrogen, ammonia, etc.).
- Work across the Institute to draw on the experience from thousands of engineers and technicians.
- Assess best approach to solve problems and interrogate results for reliability and provide troubleshooting support for tests and simulations with a firm understanding of theories/concepts using a first-principles approach.
- Learn new technical skills to complete project work.

## Requirements:

- Requires a Bachelor's with a 3.20 GPA in Mechanical Engineering or related engineering degree
- MS degrees in engineering will require 4 years, PhD in engineering will require 3 years
- 5 years: Conducting combustion, fluid, or thermal systems analyses or testing with a firm understanding of the underlying physics
- Test experience with combustion systems with turbomachinery applications, such as lean pre-mix combustion or other developing combustion technologies, such as oxy-fuel combustion or hydrogen combustion
- Experience working as a primary technical contributor to large experimental test and development programs
- A valid/clear driver's license is required

## Special Requirements:

Must be a U.S. citizen or Permanent Resident due to ITAR work in section.

## Job Locations: San Antonio, Texas

### To apply:

[https://resapp.swri.org/ResApp/Job\\_Details.aspx?JOB\\_CD=18-01260](https://resapp.swri.org/ResApp/Job_Details.aspx?JOB_CD=18-01260)

For more information about this division, visit the [Mechanical Engineering](#) home page.

For benefits information at our San Antonio location, click [here](#).

For benefits information at all other locations, click [here](#).

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