About the job

Innovative Scientific Solutions, Inc. (ISSI) is an advanced technology company specializing in leading-edge research for the U.S. Air Force Research Laboratory (AFRL). ISSI combustion research teams specialize in fundamental and applied research efforts which focus on propulsion and power for both manned and unmanned aerial systems.

ISSI is currently seeking candidates for a Combustion Research Engineer position at Wright-Patterson Air Force Base in Dayton, OH, supporting the AFRL Combustion Research Complex (CRC), the AFRL High-Pressure Combustion Research Facility (HPCRF), and/or the AFRL Detonation Engine Research Facility (DERF).

The engineer in this position will be responsible for leading experimental research campaigns in the CRC, HPCRF, and/or DERF facilities. This responsibility will require comprehensive knowledge of the combustion research test article (such as, but not limited to: experimental premixed and non-premixed flame-holding devices, single-element and multi-element combustors, inter-turbine burners, thrust augmentors, full-annular gas turbine engines, and advanced combustor concepts such as pulse detonation combustors and rotating detonation combustors. The engineer will also be required learn and maintain comprehensive systems knowledge of the associated experimental test facilities—intuition of gaseous and liquid flow systems, electronic feedback and control systems, custom data acquisition and control software, proper data handling practices, and safety protocols.

Each experimental test campaign requires research engineers to team with (1) project managers to develop and execute experimental test plans, (2) technicians and scientists to accomplish the design, fabrication, and implementation/integration of test articles and facility systems, and (3) neighboring research groups to maintain an appropriate facility schedule without conflict. Following each campaign, research engineers analyze test data, report findings to the team, and document their work in research publications and/or customer export packages.

Qualified candidates will have experience in thermodynamics, fluid dynamics, propulsion, combustion, and heat & mass transfer; 3-D CAD modeling experience, programming experience, experience in mechanical and thermal design and analysis, and knowledge of standard and advanced manufacturing techniques—computer-numerical-controlled machining (CNC), electric-discharge machining (EDM), and direct metal laser sintering (DMLS) approaches.

Primary Responsibilities:

• Design experiments/test campaigns to fulfill research objectives

• Design test articles and oversee hardware fabrication

• Design facility infrastructure (hardware and software) systems and oversee construction & integration

• Select, install, and utilize state-of-the-art instrumentation for experimental measurements

• Plan and prepare experiment execution according to schedule

• Lead and conduct experiments, operating the test facility with technicians

• Use software to reduce, analyze, and archive experimental data according to data handling standards

• Author technical papers and attend technical conferences to present research

Skills & Experience Desired:

• Hands-on experience in the application of engineering theory and practice through technical projects

• Demonstrated ability to work strongly with a team, as well as individually as a self-starter

• Experience with data acquisition equipment, software programming (LabVIEW), and instrumentation

• Competency in data processing (MATLAB, Python, Tecplot, Origin, Excel, etc) and 3-D CAD (SolidWorks, Unigraphics/Siemens NX, AutoCAD, etc) software packages

• Familiarity with hand tools, machine tools, metal fabrication, and manufacturing techniques (CNC, EDM, DMLS, etc)

• Ability to troubleshoot digital and analog electronic circuits

• Proficiency in communicating technical content in writing as well as in oral briefings

Required Education:

BS, MEng, MS, or PhD in Mechanical or Aerospace Engineering

Compensation:

Commensurate according to years of relevant experience

Benefits:

• Excellent consumer-driven medical and dental insurance

• Life insurance and disability insurance

• Generous vacation and holiday pay

• Assistance with moving expenses

• 401k matching

• Yearly performance reviews

Additional Requirements:

• U.S. Citizenship is mandatory (Green Cards and work visas are not accepted)

• This position is full-time, on-location, and in-person at Wright-Patterson Air Force Base

• All ISSI positions are subject to background investigations and random drug testing