

NOTICE OF VACANCY
Senior Engineer (Manufacturing)
for the ISP/Applied Sciences Laboratory



Description of Position

The Spokane-based Applied Sciences Laboratory (ASL) of the Institute for Shock Physics (ISP) at Washington State University has an immediate opening for a Senior Engineer. The successful candidate will have a scientific and technical background in mechanical engineering, materials science, industrial engineering, or metallurgy. Representative responsibilities include process development with a primary focus on casting and manufacturing novel metallic alloys and

composites utilizing specialized equipment such as an induction or plasma melting furnace. Tasks may consist of metal casting, titanium casting, vacuum melting, and vacuum die-casting as well as designing and installation of casting equipment and vacuum processing systems.

This position is a full-time, 12-month (renewable year after year), Administrative/Professional position. The salary range is \$7,917 - \$10,000 per month, commensurate with the candidate's experience and qualifications. Other benefits include health/dental insurance, vacation/sick leave, and retirement plans.

Representative responsibilities:

Primary responsibilities include leading the hands-on design and execution of a broad range of experimental projects including processing, casting, and characterization of metallic alloys. Ensuring high quality, thoroughness, and efficiency in all professional activities, while following environmental, health and safety procedures, are essential responsibilities. Further, the individual will:



1. Create, develop, and maintain process documentation, process flow diagrams, and detailed drawings for complex equipment and proprietary hardware/equipment.
2. Design, construction, and maintenance of process equipment and testing systems.
3. Lead the installation of equipment, tooling, and advanced technologies related to casting and manufacturing novel alloys and composites.
4. Oversee the operation of process equipment for vacuum melting and casting of metallic alloys.
5. Analyze data, identify and solve key issues, and optimize processes using Design of Experiment (DOE) and related statistical tools.
6. Conduct scientific analysis related to the experimental process and production defects.
7. Maintain, troubleshoot, and calibrate experimental facilities; order components, equipment, and supplies; interact with machine shops and suppliers; work effectively in a team setting.
8. Lead cross-functional teams to integrate the activities of multiple engineering disciplines.
9. Prepare reports and presentations in a professional manner.

Required qualifications:

A Master's degree in an appropriate related scientific or engineering discipline and four (4) years of progressively responsible related professional research experience. A PhD in a relevant scientific or engineering discipline may be substituted for up to two (2) years of the required work experience. Any combination of relevant education and experience may be substituted for the educational requirement on a year-for-year basis.

- As a substitution for the Master's degree and four (4) years of progressively responsible professional research experience a B.S. Degree in Engineering (or related field) AND 7-12 years of experience in the process engineering and/or manufacturing metallic alloys or related industrial experience with demonstrated project management experience in process equipment design, tooling, and secondary post processing.
- Knowledge of process controls; experience with industrial control systems and programmable logic controllers (PLCs).
- Academic background relevant to mechanical engineering with expertise in topics such as heat transfer and mechanics.
- Hands-on experience with laboratory equipment (e.g. vacuum systems, melting furnaces, and temperature controls).
- Personal attributes should include critical thinking, good judgment, attention to detail, ability to work effectively in a team, and excellent communication skills, both oral and written.
- Ability to lift up to 50 lbs. because of the need to move and assemble various experimental components and equipment. Must have good motor skills, ability to maneuver stairs, and move equipment as necessary. Must have ability to stand or sit for long hours.
- Must be able to obtain a badge at U.S. Department of Energy and/or Department of Defense National Laboratories to gain access to restricted areas.

Preferred qualifications:

- Demonstrated knowledge of foundry processes and ability to apply casting concepts in a manufacturing environment.
- Effective and functional knowledge of titanium chemistry, heat treatments, and metallurgical processes.
- Hands-on experience with high vacuum systems; electro-mechanical systems and controls; optical microscopy and metallographic sample preparation; or mechanical testing.
- Advanced scientific/technical knowledge in heat transfer, fluid flow, metal casting, or die-casting processes.
- Research background related to metal casting or electromechanical systems.
- Hands-on experience with material processing and characterization, or electro-mechanical systems
- Strong quantitative and analytical skills, including the ability to perform statistical analyses and apply statistical calculations.
- Experience in data mining, machine learning using systems such as Python/Minitab.
- Effective or functional knowledge of MoldFlow, Flow 3D, CFD, or similar simulation software.
- Proficiency in CAD software (e.g., SolidWorks, AutoCAD) and laboratory software (e.g., LabVIEW, MatLab).
- Demonstrated project management experience in machine design, process equipment, tooling, and secondary post processing.

Applications:

Applicants should submit the following information to [WSU Jobs \(Posting R-10354\)](#). **As part of the application process, please include a cover letter addressing the required and preferred qualifications for this position, a detailed resume, and the names and contact information (phone number and email) for three professional references to the attention of Dr. Atakan Peker.**

To ensure consideration, please specify the position (**Senior Engineer**) for which you are applying. We will begin reviewing applications immediately. Please contact Ms. Sheila Heyns with inquiries regarding this position (ispjobs@wsu.edu, 509-335-1861). For more information, please visit <https://asl.wsu.edu/>.

Please note that we will contact only those selected for next steps.



The ASL is a contract research organization that emphasizes multidisciplinary research activities in the physical sciences, engineering, and biomedical applications to undertake a broad range of applied science and technology projects for government agencies and corporations, including technology transfer for commercial applications. The scientific underpinnings to address the multidisciplinary challenges involve physics, mechanics of materials, materials science, chemistry, and computational modeling and simulations.

Additional information about the Institute for Shock Physics and Washington State University follows:

The Institute has ongoing research activities at the following three locations:

- [Institute for Shock Physics](#) - Pullman, WA: Combining research innovations and rigorous education
- [Dynamic Compression Sector](#) - Argonne, IL: Frontier of dynamic compression science (first-of-a-kind worldwide user facility) located at the Advanced Photon Source, Argonne National Laboratory
- [Applied Sciences Laboratory](#) - Spokane, WA: Transforming science into practical solutions

Washington State University

Washington State University, one of the two research universities in the state, was founded in 1890 as the state's land-grant institution and is located in Pullman with regional campuses in Spokane, Vancouver, and the Tri-Cities. Due to its strong emphasis on excellence in research and education, the Carnegie Classification™ has designated WSU as R1: Doctoral University – Highest Research Activity. Current enrollment is approximately 27,500 undergraduate, graduate, and professional students. The University offers more than 200 fields of study, with 95 majors for undergraduates, 79 master's degree programs, 63 doctoral degree programs, and 4 professional degree programs. Academically, the University is organized into 11 colleges (Agriculture, Human, and Natural Resource Sciences; Arts and Sciences; Business; Communication; Education; Engineering and Architecture; Honors; Medicine; Nursing; Pharmacy; and Veterinary Medicine) and a Graduate School. The Colleges of Medicine, Nursing, and Pharmacy are



located on the WSU Health Sciences Spokane campus. For more information, please visit www.wsu.edu.

WASHINGTON STATE UNIVERSITY IS AN EQUAL OPPORTUNITY/AFFIRMATIVE ACTION EDUCATOR AND EMPLOYER. Members of ethnic minorities, women, special disabled veterans, veterans of the Vietnam-era, recently separated veterans, and other protected veteran, persons of disability and/or persons age 40 and over are encouraged to apply.

WSU employs only U.S. citizens and lawfully authorized non-U.S. citizens. All new employees must show employment eligibility verification as required by the U.S. Citizenship and Immigration Services.

WSU is committed to providing access and reasonable accommodation in its services, programs, activities, education and employment for individuals with disabilities. To request disability accommodation in the application process, contact Human Resource Services: 509-335-4521 (v), Washington State TDD Relay Service: Voice Callers: 1-800-833-6384; TDD Callers: 1-800-833-6388, 509-335-1259(f), or hrs@wsu.edu.