NOTICE OF VACANCY

Research Optical Engineer for the Dynamic Compression Sector at the Advanced Photon Source, Argonne, Illinois

Description of Position
Washington State University (WSU) is seeking to hire a strongly self-motivated talented Optical Engineer (Administrative/Professional Staff Member) to support the research activities at a first-of-a-kind experimental user facility: The Dynamic Compression Sector (DCS) at the Advanced Photon Source (APS), Argonne National Laboratory. The DCS constitutes a new paradigm for understanding the dynamic compression and deformation response of materials on under extreme conditions. Real-time, atomistic-scale investigations of condensed matter phenomena can be undertaken in single event experiments through time-resolved, in-situ measurements utilizing the tunable, high energy X-ray capabilities at the APS.

The position is located at the DCS in Argonne, IL; however, initially, the individual hired in this position will be temporarily located for training in Pullman, WA to obtain hands-on experience on the capabilities used to make measurements under dynamic compression.

We are looking to hire an experimentalist who enjoys hands-on work and problem solving in a fast-paced, research environment. The DCS research activities involve state-of-the-art, dynamic compression experiments that utilize X-ray and optical measurements on nanosecond time-scales to understand the response of materials at high dynamic stresses.

Responsibilities include, but are not limited to:

1. Take the lead in the design, development, and use of optical equipment and systems, for laser-interferometry measurements and other laser-based diagnostics.
2. Participate in the design and development of research methodologies for a broad range of experimental projects.
3. Independently define and complete experimental projects and tasks.
4. Contribute effectively to all aspects of the research projects including assistance to DCS users; maintenance of the experimental facilities; ordering experimental components, equipment and supplies; and working effectively in a team setting.
5. Conduct and analyze research experiments, and prepare reports and publications as appropriate.

Many of the experiments performed at the DCS utilize a wide variety of lasers that are integral to the measurement of the shocked state of materials (e.g. pulsed high energy DPSS lasers,
CW DPSS frequency doubled lasers, pulsed and CW high power IR and visible fiber lasers, short pulse low energy lasers, and pulsed and CW laser diodes). A wide array of optical detection and analysis apparatus are also utilized, including biased and amplified photodiodes, APD’s, image intensifiers, fast framing cameras, ICCD’s, streak cameras, and other state-of-the-art electro-optic instrumentation. The successful candidate will learn to operate and maintain these systems, as well as design new systems, and select appropriate components to advance the capabilities of the DCS.

Qualifications

Only applicants who are currently in the U.S. and meet the following minimum qualifications will be considered for the position.

Background in dynamic compression research is not required for this position. However, strong, hands-on experimental background and skills are essential. The required professional qualifications and personal attributes are:

- A Ph.D. degree in Physics or a related field with a strong experimental background in optical physics, optics, lasers or optoelectronics.
- Strong hands-on ability with design and fabrication of instruments and experimental components.
- Good familiarity with hardware and software required for photonic based experiments.
- Good computer skills, including experience with technical/design programs, such as LabView and SolidWorks, and working knowledge of data analysis software.
- Excellent communication skills, both oral and written.
- Personal attributes should include critical thinking, good judgment, clear sense of purpose, attention to detail, ability to work effectively in a team, and accountability.
- Must be able to obtain a badge at U.S. Department of Energy National Laboratories to gain access to restricted areas.

The salary structure is both attractive and nationally competitive. Other benefits include health/dental insurance, vacation/sick leave, and retirement plans.

Applications

To apply, please submit application materials via email to ispjobs@wsu.edu. Applicants should submit a cover letter addressing the required qualifications for this position, detailed resume, and the names and contact information for three professional references.

Questions may be submitted to Sheila Heyns, Senior Manager, Institute for Shock Physics, 509-335-1861, ispjobs@wsu.edu.

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 (shock.wsu.edu)
- **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 (dcs-aps.wsu.edu)
- **Applied Sciences Laboratory - Spokane, WA**: Transforming science into practical solutions (asl.wsu.edu)

**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 RU/VH: Research Universities (very high research activity). Current enrollment is approximately 29,686 undergraduate, graduate, and professional students. The University offers more than 200 fields of study, with 90 majors for undergraduates, 76 master’s degree programs, 64 doctoral degree programs, and 3 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; Medical Sciences, Nursing; Pharmacy; Veterinary Medicine) and a Graduate School. WSU has established a medical school with preliminary accreditation received in Fall 2016. For more information, please visit www.wsu.edu.

*WSU is an EO/AA Educator and Employer.*