

Mechanical Engineering/Experimentalist – Post-Master’s

Neutron Sciences Directorate Neutron Facility Development Division Oak Ridge National Laboratory Oak Ridge, Tennessee

ORNL09-99-NFDD

Project Description:

The SNS mercury target cavitation damage mitigation R&D program requires additional support to conduct experiments that investigate damage mitigation concepts. These typically involve large scale mercury flow systems with gas injection, acoustics, pressure / shock loading; they require data acquisition for pressure, fluid and gas flow, acoustics, video analysis, etc.

The selected applicant will assist with the design, preparation and performance of experiments conducted as part of SNS mercury target cavitation damage mitigation research. Experiments with either small gas bubble injection in mercury, or, gas wall creation in mercury flow systems are being investigated.

Operate data acquisition systems in mercury flow systems (flow, pressure, temperature, etc.). Assist with the development of diagnostics to measure small gas bubble populations in mercury and gas wall coverage.

Operate pressure pulse devices in mercury systems that simulate cavitation phenomena in mercury spallation targets. Measure dynamic pressure and strain from pulse devices and the effectiveness of mitigation concepts.

Provide mechanical, fluid and heat transfer engineering analysis support to experiment design under the direction of staff engineers.

Display ES&H understanding and discipline that leads to outstanding safety performance. Maintain the highest ethical and professional standards of performance and operates in accordance with these standards. Embody ORNL values to be the best in everything we do, guided by shared values that exemplify concern for people and working together to meet challenging goals.

Qualifications:

M.S. in Mechanical Engineering, Engineering Physics or related field with interest in liquid metal systems, acoustics and experimentation. Experimental experience desired with: fluid - gas systems, data acquisition and analysis; MatLab, LabView. Persons working on Master's degree will be considered depending on experience.

Successfully contributes to the advancement of cavitation damage mitigation technology via gas-mercury flows within SNS design constraints.

Effective use of data acquisition tools for capturing relevant parameters of gas-mercury system experiments. Effective data analysis and processing for meaningful data interpretation.

Contributes to the design, planning and operation of experiments that advance program R&D goals.

Clear and effective communication and documentation of experiment activities, both oral and written.

Applicants cannot have received the most recent degree more than five years prior to the date of application and must complete all degree requirements before starting their appointment.

Technical Questions:

For more information about this position please contact: Bernie Riemer at riemberbw@ornl.gov. Please reference the position title and number when corresponding about this position.

How to Apply:

Qualified applicants must apply online at https://www2.ornl.gov/ORNL_POST/. All applicants will need to register before they can begin the online application. For complete instructions, on how to apply, please see the instructions at <http://www.ornl.gov/orise/edu/ornl/ornl-pdpm/application.htm>. When applying for this position, please reference the position title and number.

The postdoctoral position will be offered through the Oak Ridge Institute for Science and Education (ORISE) Oak Ridge National Laboratory Postgraduate Research Associates program <http://www.ornl.gov/orise/edu/ornl/ornl-pd/ornlpdoc.htm>. These positions is open to all qualified candidates without regard to race, color, age, religion, sex, national origin, physical or mental disability, or status as a Vietnam-era veteran or disabled veteran.