

**Postdoctoral Research Associates in
Beam Instrumentation**

**Research Accelerator Division
Neutron Sciences Directorate
Oak Ridge National Laboratory
Oak Ridge, Tennessee**

ORNL08-97-NSD

Project Description:

Participates in the SNS Beam Instrumentation design, modeling, prototyping, commissioning and operations. Operate laser based instruments, provide optical design modeling for the preparation laser based H- double electron stripping. Position is temporary for 12 month with possible renewal for one to two more years.

Major Duties/Responsibilities:

- Develops and implements optical design models for various laser transport lines.
- Participates in Beam Instrumentation non-intrusive diagnostics based on YAG laser, mode-lock laser and high power lasers.
- Performs calculations and simulations of H- beam and laser beam interactions.
- Performs calculations and simulations to analyze various emittance systems being designed for SNS.
- Checks design and hardware implementation of beam imaging for the target view-screen, data acquisition and software in beam imaging experiment using Optical Transition Radiation (OTR).
- Collects, maintains and verifies documentation of the above instruments and layouts.
- Summarizes work in publications, conferences proceedings and laboratory reports.
- Ensures individual compliance with environment, safety, health and quality program requirements including ISMS.
- Maintains a strong commitment to the implementation and perpetuation of values and ethics.

Qualifications:

This position requires a Ph.D. degree in physics or electrical engineering with research experience in one of the following areas required: numerical simulations of charged particle beams, design of emittance system, or measurement and analysis of accelerator beam parameters. Ability to collaborate in a team setting with a group of physicist and engineers in the commissioning of an accelerator highly desirable. Some travel to partner laboratories required. Excellent written and oral communication skills are necessary. The initial appointment would be for up to one year, with possible renewal for one or two years. 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.

Work Direction/Interfaces:

Reports to the SNS Beam Instrumentation group leader. Will work closely with other members of the Beam Instrumentation Team within the Accelerator Physics Group. Will interface with physicist, postdocs, engineers, students, technicians, and operators in the various technical groups within the Research Accelerator Division and the other SNS divisions. Maintains communication with the partner laboratories.

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.

This appointment is offered through the ORNL Postgraduate Research Participation Program and is administered by the Oak Ridge Institute for Science and Education (ORISE). The position is open to citizens or legal permanent residents of the US or Canada without regard to race, color, age, religion, sex, national origin, physical or mental disability, or status as a Vietnam-era veteran or disabled veteran.