

# BROOKHAVEN NATIONAL LABORATORY

Brookhaven National Laboratory is a multipurpose research institution funded primarily by the U.S. Department of Energy's Office of Science. Located on the center of Long Island, New York, Brookhaven Lab brings world-class facilities and expertise to the most exciting and important questions in basic and applied science—from the birth of our universe to the sustainable energy technology of tomorrow. We operate cutting-edge large-scale facilities for studies in physics, chemistry, biology, medicine, applied science, and a wide range of advanced technologies. The Laboratory's almost 3,000 scientists, engineers, and support staff are joined each year by more than 4,000 visiting researchers from around the world. Our award-winning history, including seven Nobel Prizes, stretches back to 1947, and we continue to unravel mysteries from the nanoscale to the cosmic scale, and everything in between. Brookhaven is operated and managed by Brookhaven Science Associates, which was founded by the Research Foundation for the State University of New York on behalf of Stony Brook University, and Battelle, a nonprofit applied science and technology organization.

## Organizational Overview

The mission of the Materials in a Radiation Environment (MRE) Program Office within the Nuclear Science and Technology Department is to increase access to synchrotron characterization techniques to researchers studying materials for nuclear energy applications. We develop unique experimental infrastructure and support a large user community dedicated to material science for advanced nuclear reactors and extending the life of existing reactors. We use various beamlines at the National Synchrotron Light Source-II to study radioactive materials and radiation effects. We are designing a new facility with multiple high-energy x-ray beamlines capable of handling more highly radioactive materials.

### Job ID # 1189 – Scientific Associate III: Data Analysis Engineer

The Nuclear Science and Technology Department has an opening for a Data Analysis Specialist in the Materials in a Radiation Environment Program Office. The successful candidate will participate in the data analysis of high-energy x-ray techniques, including scattering, spectroscopy and imaging. The data analyst will use commercial software packages, open source software and NSLS-II specific applications to collect, process and analyze data from the NSLS-II for the nuclear energy materials science community. Python programming will be used to develop stand-alone applications, scripts and GUI's for automating the data analysis processes. MRE will be installing an X-ray Diffraction Computed Tomography System that will require development of reconstruction and imaging techniques. High-throughput and in situ experiments require automated analysis techniques. Essential duties and responsibilities would include: (1) assist synchrotron users with data analysis. This work includes participation in experimental planning, assistance with data collection and training users in data analysis; (2) work with controls engineers and physicist for the installation of an x-ray tomography system. Primary responsibility for data acquisition, reconstruction and visualization for the system; (3) automate data analysis through dedicated scripts for commercial software and stand-alone python applications with GUIs; (4) work as primary point of contact for performing tasks associated with data analysis with the NSLS-II operations staff (controls engineers, application developers, and beamline staff); and (5) develop and maintain documentation of data analysis and development of user guides.

#### Required Knowledge, Skills, and Abilities:

- Requires a Bachelor's degree in a closely related field of basic or applied science
- Minimum of three (3) years progressively responsible related work experience including supporting scientific research programs following established methods and standards for investigation and experimentation
- Knowledge of data analysis techniques for X-ray characterization techniques
- Knowledge of python programming
- Able to support data analysis through all experimental phases from acquisition, technique and application development and automating analysis of large data sets
- Strong communication and interpersonal skills for interaction with a diverse group of scientists, engineers and technical staff

Preferred Knowledge, Skills, and Abilities:

- PhD or Master's degree in physics, materials science or engineering
- Experience with large data sets
- Experience in analytical modeling, statistical techniques or machine learning
- Experience in X-ray data analysis, particularly tomography, imaging and data fusion (combining data from separate techniques into one data set and facilitating visualization)
- Experience in application development
- Experience in the collection of synchrotron data and user support

OTHER INFORMATION:

- Occasional travel
- Occasional shift and weekend work for supporting x-ray data collection

ENVIRONMENTAL, HEALTH, AND SAFETY CONSIDERATIONS:

- Must be willing to handle small quantities of radioactive materials

At Brookhaven National Laboratory, we believe that a comprehensive employee benefits program is an important and meaningful part of the compensation employees receive. Our benefits program includes, but is not limited to:

- Medical Plans
- Dental Plans
- Vacation
- Holidays
- Life Insurance
- 401(k) Plan
- Retirement Plan
- Paid Parental Leave
- Swimming Pool, Weight Room, Tennis Courts, and many other employee perks and benefits

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\*VEVRAA Federal Contractor

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<https://jobs.bnl.gov/job/upton/data-analyst/3437/7032137>

**Brookhaven National Laboratory offers an excellent benefits package, tuition reimbursement and a competitive salary.**

**Brookhaven National Laboratory is an Equal Opportunity Employer – Minorities/Women/Disabled/Veterans**