

Postdoctoral Research Associate in Experimental Nuclear/Particle Physics

The Department of Physics and Astronomy at Stony Brook University

(<http://www.physics.sunysb.edu/Physics/>) seeks to hire a postdoctoral researcher in the area of experimental nuclear/particle physics. The successful applicant will work in the new group of Professor Krishna Kumar on the search for neutrinoless double-beta decay. Specifically, the group plans to participate in the ongoing EXO-200 experiment, with 200 kg of enriched Xenon-136, which is collecting low background data at the Waste Isolation Pilot Plant (WIPP) near Carlsbad, NM. The group is also launching R&D efforts in the development of nEXO, a next generation 5 tonne detector concept. The research activities will involve both data analysis and hardware development, some of which will be carried out in newly renovated laboratory space in the department. Some of the activities will be carried out in collaborative R&D efforts at neighboring Brookhaven National Laboratory. Participation in data collection and detector maintenance on site at WIPP will also be part of the activities.

The successful candidate will conduct:

- Analysis of cosmogenic data from EXO-200.
- Development of thermofluid simulations of the nEXO cryogenic system.
- Development of photocathodes that can monitor xenon purity in nEXO.
- Analysis of R&D topics from EXO-200 and nEXO selected by the candidate.

Required Qualifications: Ph.D in Experimental Physics. Experience with Monte Carlo simulations data analysis and hardware development in accelerated beam or underground nuclear/particle physics experiments. Prior training that provides the necessary background knowledge to analyze cosmologically-induced neutron capture data, thermodynamic simulation of complex cryofluid systems, and the development of novel photocathodes.

Preferred Qualifications: Previous experience in any or all of the broad areas of detector development, data analysis, Monte Carlo simulation, low background techniques, lasers and photodetectors in accelerator-based or underground nuclear or particle physics experiments.

The position is available starting September 1, 2014. Initial appointment is for one year, with the possibility of extension for a second and third year upon satisfactory performance and available funding. For more information, contact Prof. Krishna S. Kumar at krishna.kumar@stonybrook.edu. Applicants should submit a cover letter, curriculum vitae, and the names, institutions, email addresses of three references who will submit their letters electronically (*highly preferred*) at: <https://academicjobsonline.org/ajo/StonyBrook/PhysicsandAstronomy/4070> and follow the links and instructions for uploading all application materials to a secure website. The letters of references should be submitted electronically on the same website.

Alternatively, submit the applications materials listed above to:

Nathan Leoce-Schappin, Department Administrator, Department of Physics and Astronomy, P-104,
Physics Building, Stony Brook University, Stony Brook, NY 11794-3800