

Job description:

The Spitz, Jovanovic, and Sun groups in the Departments of Physics, Nuclear Engineering, and Materials Science and Engineering, respectively, at the University of Michigan (Ann Arbor) are searching for a postdoc to work on the study of dark matter and astrophysical neutrino detection in mineral-based detectors as part of an NSF Growing Convergence Research project. The “paleo-detector” particle detection technique relies on rare-event-induced signature damage to the crystalline structure of natural minerals excavated from deep underground. The advantage of this method is that the minerals in question have been collecting data deep beneath the Earth’s surface for 100s of million or even billions of years.

The postdoc hire, based in Ann Arbor, will contribute to the overall experiment through design, hardware, simulation, reconstruction, and data analysis. In particular, the hire will work towards establishing the detailed imaging and pattern recognition strategy for characterizing sub-micrometer-scale rare events in crystals using soft X-ray micro-CT and electron microscopy (SEM, TEM) techniques. Towards developing the imaging strategy, the hire will also work to create characteristic samples via irradiation using ion accelerator-, neutron generator-, and reactor-based sources.

The position is set initially for one year, with the possibility of extension up to five years total.

To Apply

Newly graduated PhDs with research backgrounds in experimental physics, nuclear engineering, materials science, mineralogy, or solid-state chemistry are welcome to apply. In particular, candidates with materials characterization expertise using X-ray, light, and electron beam based techniques are encouraged.

To apply, please send a CV and research statement to spitzj@umich.edu. Also, please arrange for at least 3 reference letters to be sent to the same email address by the 1/15/2025.

Additional information

Application review begins immediately. The position will remain open until filled.

Legal information

The candidate must successfully complete background screening. The candidate must be eligible for employment in the United States at the time of the start date. Continued employment is contingent on maintaining valid immigration status. The University of Michigan is an equal opportunity/affirmative action employer. We encourage applications from people holding any identity(ies) that have been traditionally underrepresented in physics.

Contact: Prof. Joshua Spitz, Prof. Igor Jovanovic, Dr. Kai Sun

Application materials should be sent to: spitzj@umich.edu