Postdoctoral Research Associate – Modeling of Electronic and Quantum Materials
University of Illinois Urbana-Champaign
University of Illinois Materials Research Laboratory (MRL)
Illinois Quantum and Microelectronics Park (IQMP)

Applications are invited for a *Postdoctoral Research Associate* position in the **research group of Professor Harley Johnson**, working on NSF- and AFOSR-funded sponsored research projects at UIUC and collaborating with the Illinois Quantum and Microelectronics Park (IQMP). The position is expected to begin on or shortly after **January 16, 2027** and will be based in Urbana, IL, with occasional work in Chicago.

This position will focus on the **modeling and simulation of the mechanics of electronic and quantum materials**, with the goal of advancing fundamental understanding and applications in emerging quantum and nanoelectronic technologies. The research will involve multiscale modeling of strain, defects, and mechanical-electronic coupling in quantum materials such as 2D materials, strongly correlated systems, and topological insulators.

In addition, the successful candidate will have the opportunity to work on **collaborative projects related to quantum computing applications** with the National Quantum Algorithm Center at IQMP, leveraging an interdisciplinary research ecosystem with a mission to accelerate innovation in quantum computing.

Required Qualifications:

- Ph.D. in Materials Science, Mechanical Engineering, Physics, or a related discipline by the start date.
- Strong background in computational materials science, solid mechanics, or condensed matter theory.
- Proficiency with modeling tools such as DFT, molecular dynamics, finite element methods, or data-driven approaches.

Preferred Qualifications:

- Experience with quantum materials or device modeling.
- Interest in and familiarity with tools for quantum computing algorithm development.
- Demonstrated ability to publish high-quality research and work collaboratively.

This position offers a unique opportunity to work at the **intersection of mechanics, materials science, and quantum technologies** within a dynamic and interdisciplinary research ecosystem. The Johnson Group is part of a network of research excellence at Illinois, including research collaborations in the Materials Research Laboratory, and industry partnerships through IQMP.

To Apply:
Applicants should submit a cover letter, curriculum vitae, a brief statement of research interests, and the names and contact information of three references to htj@illinois.edu. Review of applications will begin immediately and continue until the position is filled.