

“Postdoctoral Research Associate in Applied Superconductivity Center at the National High Magnetic Field Laboratory at Florida State University”

Job Title: Electron Microscopist in Applied Superconductivity Center

Category and Level: Post-doctoral associate

Organization Name: Applied Superconductivity Center
National High Magnetic Field Laboratory
Florida State University

What You Will Do

The Applied Superconductivity Center at Florida State University (FSU) and the National High Magnetic Field Laboratory (NHMFL) invite applications for a post-doctoral research associate position to perform nanostructural characterization using a variety of electron microscopy techniques. The position will focus on improving our understanding of the micro-, meso-, nano- and atomic-scale structural origins of the superconducting properties of high temperature superconductors (principally REBa₂Cu₃O_{7-δ}, Bi-2212 and (K,Ba)Fe₂As₂) with the aid of our advanced electron microscopes. Available equipment includes an aberration-corrected atomic resolution (scanning) transmission electron microscope (S/TEM), a focused ion beam (FIB) equipped FESEM and supporting sample preparation tools. The successful candidate would be a microscopist who focuses on materials science and problem solving. This position requires expertise in a TEM/STEM operation and FIB nano-fabrication so that the applicant can quickly begin actively participating in research. The successful applicant will become a member of a highly interactive and collaborative group that has along tradition of helping post-docs build a successful career in scientific research. The post doc will also be part of the strong post doc program at the MagLab.

Qualifications We Require

- Ph.D. in materials science, physics, engineering, chemistry, or related field completed within the past 3 years
- Extensive prior experience in TEM/STEM operation and making TEM samples
- Extensive prior experience preparing TEM specimens using FIB
- Effective written and verbal communication skills as evinced by publications, presentations, cover letter, and references

Qualifications We Prefer

- Experience operating Cs-corrected STEMs
- Experience in EELS or EDS in STEM

Note to Applicants

The position is full-time and includes health benefits.

Interested candidates can contact Fumitake Kametani (kametani@asc.magnet.fsu.edu)

Application package we request:

- CV (Please list names and contact information of 2 possible references)
- Cover letter addressing the qualifications outlined above.
- One notable published paper or pre-print (co-)authored by the candidate (.pdf format)

Application package can be sent to:

Fumitake Kametani
Associate Professor
Department of Mechanical Engineering, Florida State University,
and Applied Superconductivity Center, National High Magnetic Field Laboratory
2031 E. Paul Dirac Dr., Tallahassee, FL 32310
Tel: (850) 645-7491
E-mail: kametani@asc.magnet.fsu.edu

Where You Will Work

The candidate will be working as a full member of the Applied Superconductivity Center (ASC) located in Tallahassee FL. As a part of National High Magnetic Field Laboratory (NHMFL), we are a 50-person center dedicated to understanding and advancing superconducting materials for superconducting magnet and RF applications. At present there are 14 graduate students, 4 postdocs and 10 scientific and support staff. In non-COVID times many undergraduates also participate in research. ASC has multiple research programs and collaborators from all over the world. We offer students and postdocs the opportunity to work in a very interdisciplinary and interactive environment that has a track record of impactful scientific discoveries.

Major microscope-related instruments at FSU and NHMFL:

- JEOL ARM200cF Cs-corrected S/TEM with Electron Energy Loss Spectroscopy (EELS) and Energy-dispersive X-ray Spectroscopy (EDS)
- FEI Helios G4 UC field emission scanning electron microscope and FIB equipped with Gas Injection System (GIS), in-situ lift-out tool and Leica cold stage, EBSD and EDS
- Gatan PIPS ion mill
- Micro Support Axis Pro SS ex-situ lift-out tool
- JEOL IB-19500 CP ion cross section polisher