

## Advanced Electron Microscopy Sample Preparation & Characterization of Hybrid & Soft Materials (Multiple Open Positions)

Northwestern University's Electron Probe Instrumentation Center ([EPIC](#)) is seeking qualified and motivated candidates to work in a research facility housing one of the most complete arsenals of state-of-the-art electron microscopes in the world. As a member of the Soft and Hybrid Nanoscale Experimental ([SHyNE](#)) Resource, the Midwest node of the NSF's National Nanotechnology Coordinated Infrastructure ([NNCI](#)), EPIC is undergoing a phase of phenomenal growth.

Multiple positions, including an entry-level postdoctoral research associate position, are immediately available in the area of advanced applications of focused ion beam (FIB) and (Scanning) Transmission Electron Microscopy ((S)TEM) to characterize materials systems including but not limited to: (natural) hybrid soft-hard materials, and biological materials such as human skin (*via* Chan Zuckerberg initiative). The candidate has the unique opportunity to utilize and develop a novel Thermo Scientific Helios Hydra multi-ion species plasma FIB (PFIB), serving both as characterization tool (FIB tomography, 3D EDS & EBSD, etc.), and a sample preparation tool (TEM sections, atom probe tomography (APT) tips, etc.), at ambient and cryogenic temperatures. A complete cryo-transfer system is expected to be installed in the near future to allow for liquid nitrogen-cooled, air-free and moisture-free transfer of FIB-prepared specimens to (S)TEM equipment, Atom Probe, etc. Characterization of such hybrid/soft samples *via* cryo-electron tomography (cryo-ET) or 4D-STEM with various direct electron and other detectors will be explored. In addition to high-end independent research, the candidate is encouraged to collaborate with high-impact faculty research groups in Northwestern's departments of Materials Science & Engineering, Chemistry, among others.

The [benefits-eligible](#) position is available immediately for two years with potential for [IIN](#) fellowship match, and possibility for extension or promotion to a research faculty position.

**Qualifications and Competencies** - The preferred candidate will:

- Hold a doctoral degree in Materials Science, Chemistry, Physics, Biology (or related).
- Excellent written and oral communication skills and the ability to communicate in English to an international scientific audience.
- Experience to prepare high quality TEM samples using FIB-SEM or other relevant FIB experience. Familiarity with Cryo-FIB is a large plus.
- Demonstrate a strong background in the field of (S)TEM and be experienced with various advanced (S)TEM methods. Familiarity with cryo-(S)TEM is a plus.
- Experience in coding (Python, MATLAB) for imaging, spectroscopy and/or tomography data processing is considered a plus.

Candidates will send as a single PDF to [paul.smeets@northwestern.edu](mailto:paul.smeets@northwestern.edu): CV, research statement (3 pages), and three reference letters.

**Become a Member of the [NUANCE](#) Team!**

*The Northwestern campus sits on the traditional homelands of the people of the Council of Three Fires, the Ojibwe, Potawatomi, and Odawa as well as the Menominee, Miami, and Ho-Chunk nations. We acknowledge and honor the original people of the land upon which Northwestern University stands, and the Native people who remain on this land today.*

*Northwestern University is an Equal Opportunity, Affirmative Action Employer of all protected classes, including veterans and individuals with disabilities. Women, racial and ethnic minorities, individuals with disabilities, and veterans are encouraged to apply. Click for information on [EEO is the Law](#).*