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Research Associate –Scanning Probe Microscopy for Energy Technologies

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Date: Jan 5, 2019

Location: Oak Ridge, TN, US, 37830

Company: Oak Ridge National Laboratory

Requisition Id 370

Overview:

We are seeking a research associate for scanning probe microscopy efforts for energy technologies. This position resides in the Scanning Probe Microscopy Group in the Center for Nanophase Materials Sciences (CNMS), Physical Sciences Directorate (PSD) at Oak Ridge National Laboratory (ORNL).

As part of our research team, you will lead in the development and application of scanning probe microscopies (SPM) for materials used in energy storage systems including solid state ion conductors, solid-state batteries, and electrochemical capacitors. You will have the opportunity to contribute to fundamental research in the motion of ions at the nm scale through electrochemical and electromechanical coupling. Emphasis will be on detection of electrochemical reactions and ionic motion on local scales with current and force-based approaches in various environments, quantification of local ionic transport parameters, and the understanding and minimization of measurement artifacts. You will be expected to facilitate collaborations within CNMS, contribute to the development of new SPM-based characterization techniques, and to recruit and work with external users to benefit from these developments. State-of-the-art microscopes are available for you to manage and employ. This position resides in the Scanning Probe Microscopy Group in the Center for Nanophase Materials Sciences (CNMS), Physical Sciences Directorate (PSD) at Oak Ridge National Laboratory (ORNL).

Major Duties/Responsibilities:

In this position, you will:

- Work as part of a dynamic team conducting research that advances understanding of local ionic motion and electrochemical reactions in energy storage systems
- Explore local ionic transport through electrochemical and electromechanical coupling in controlled environments (air, liquid) via scanning probe methods
- Manage and operate state-of-the-art scanning probe microscopes
- Perform data analysis, and utilize and contribute to open source tools developed in-house for data and image analysis
- Work with others to maintain a high level of scientific productivity and publications
- Present and report research results and publish scientific results in peer-reviewed journals in a timely manner
- Ensure compliance with environment, safety, health and quality program requirements
- Maintain strong dedication to the implementation and perpetuation of values and ethics

Basic Qualifications:

- A PhD in Physics, Chemistry, Materials Science or a closely related discipline
- A minimum of 2 years of demonstrated experience with scanning probe microscopy

Preferred Qualifications:

- A strong record of productive and creative research demonstrated by publications in peer-reviewed journals and presentations at scientific conferences
- A background in electrochemical characterization techniques
- Knowledge of scanning probe microscopy in a liquid environment
- A background in instrument development and detailed understanding of SPM equipment and cantilever dynamics
- Knowledge of a programming language (such as python or Matlab) for scientific data analysis, with some knowledge of basic machine-learning methods.
- Motivated self-starter with the ability to work independently and to participate creatively in collaborative teams across the laboratory
- Excellent written and oral communication skills in English and the ability to communicate to an international, scientific audience
- Ability to function well in a fast-paced research environment, set priorities to accomplish multiple tasks within deadlines, and adapt to ever changing needs

Please provide a list of publications when applying for this position. Three letters of reference are required and can be uploaded to your profile or emailed directly to PSDrecruit@ornl.gov. Please include the title of the position in the subject line.

This position will remain open for a minimum of 5 days after which it will close when a qualified candidate is identified and/or hired.

We accept Word (.doc, .docx), Adobe (unsecured .pdf), Rich Text Format (.rtf), and HTML (.htm, .html) up to 5MB in size. Resumes from third party vendors will not be accepted; these resumes will be deleted and the candidates submitted will not be considered for employment.

If you have trouble applying for a position, please email ORNLRecruiting@ornl.gov.

ORNL is an equal opportunity employer. All qualified applicants, including individuals with disabilities and protected veterans, are encouraged to apply. UT-Battelle is an E-Verify employer.

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