

# **Postdoctoral Research Associate in Low-Temperature High-Magnetic Field Scanning Tunneling Microscopy**

**Center for Nanophase Materials Sciences Division  
Physical Sciences Directorate  
Oak Ridge National Laboratory  
Oak Ridge, Tennessee**

ORNL09-129-CNMS

## **Project Description:**

The Center for Nanophase Materials Sciences (CNMS) at Oak Ridge National Laboratory (ORNL) is seeking a postdoctoral research associate in the field of Imaging Functionality at the nanoscale. The candidate will conduct research involving the use of a homebuilt Millikelvin High-Magnetic Field Scanning Tunneling Microscope (LTHF STM) and homebuilt Variable Temperature Scanning Tunneling Microscope (VT STM) for the study of electronic structure in single-molecules and self-assembled structures, inelastic excitation mechanisms by tunneling electrons, when applied to rotational, conformational and chemical dynamics of single molecules. The program will also involve atomically resolved surface imaging and spectroscopy of correlated electron oxides at cryogenic temperatures and in magnetic fields.

The CNMS (<http://cnms.ornl.gov/>) is a nanoscience user research facility supported by the Office of Science, U.S. Department of Energy. The CNMS has a diverse spectrum of nanoscience research activities including a nanofabrication facility; laboratory-based research on macromolecular materials, catalysts, and functional nanomaterials; characterization with electron microscopes, scanning probes, and x-ray diffraction and scattering; and theory, modeling, and simulation.

## **Qualifications:**

This position requires a Ph.D. in condensed matter physics, surface science, chemical physics or a related field, preferably with a strong background in scanning probe microscopy. Familiarity with numerical data analysis (Labview, Matlab) is preferred. The successful candidate should be motivated, safety conscious and have superior UHV laboratory skills. Excellent oral and written communication skills are required. Prior research work needs to be supported by a strong publications record in peer-reviewed journals, preferably as a senior author, and presentations at scientific conferences. The applicant must have the ability to work in a team and interact effectively with colleagues. Demonstrated ability to communicate in English to an international scientific audience is essential.

Applicants cannot have received the most recent degree more than five years prior to the date of application appointment and must complete all degree requirements before starting their appointment.

## **Technical Questions:**

For more information about this position please contact Dr. Minghu Pan ([panm@ornl.gov](mailto:panm@ornl.gov)) and reference this position title and number in your correspondence.

**How to Apply:**

NOTE: Applications will be accepted until October 31, 2009 or until the position is filled.

Qualified applicants must apply online at [https://www2.ornl.gov/ORNL\\_POST/](https://www2.ornl.gov/ORNL_POST/). All applicants will need to register before they can begin the online application. For complete instructions, on how to apply, please see the instructions at <http://www.ornl.gov/orise/edu/ornl/ornl-pdpm/application.htm>.

This appointment is offered through the ORNL Postgraduate Research Participation Program and is administered by the Oak Ridge Institute for Science and Education (ORISE).

This appointment is open to all qualified U.S. and non-U.S. citizens without regard to race, color, age, religion, sex, national origin, physical or mental disability, or status as a Vietnam-era veteran or disabled veteran.