



**Postdoctoral Research Associate Position  
Nanomaterials Theory Institute  
Center for Nanophase Materials Sciences, Oak Ridge National Laboratory**

ORNL11-76-CNMS

**Position Description:**

The Nanomaterials Theory Institute of the Center for Nanophase Materials Sciences (CNMS) at Oak Ridge National Laboratory (ORNL) seeks two Postdoctoral Associates to work in the area of theoretical and computational condensed matter physics, focusing on theoretical modeling capabilities to understand collective phenomena at the nanoscale in strongly correlated electronic materials, including Mott insulators and high temperature superconductors, through the use of the density matrix renormalization group (DMRG). Work will make use of DMRG methods for time evolution and temperature dependence, and of related dynamical mean-field theory methods. The application of the DMRG technique is expected to provide insights for real devices, such as solar cells. The [CNMS](#) is a collaborative nanoscience user research facility established by the Office of Science, U.S. Department of Energy.

**Qualifications:**

This position requires completion of a Ph.D. in the area of theoretical or computational condensed matter physics or a closely related field. Background in strongly correlated electron research is preferred. Knowledge of DMRG methods is not required. The candidate must have good organizational skills and must have the ability to work in a team and interact effectively with a broad range of colleagues. Demonstrated ability to communicate in English to an international scientific audience is essential. Applicants must have received their highest degree not more than five years prior to the date of application and must complete all degree requirements before starting their appointment.

**Technical Questions:**

For more information about this position please contact Dr. Gonzalo Alvarez ([gzi@ornl.gov](mailto:gzi@ornl.gov)). The positions are available starting June 1, 2011, or any later, mutually agreed, date. Applications will be accepted until the positions are filled. Please include the requisition number and title listed above when corresponding. The positions are funded by the *DOE Early Career Research Program*.

**How to Apply:**

Qualified applicants may 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 information 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.