|  |  |
| --- | --- |
| **TITLE:** | Materials Scientist : Electromagnetic Properties of Oxides  |
|  |  |
| **DEPARTMENT:** | U.S. Department of Energy/National Energy Technology Laboratory (NETL) |
|  |  |
| **NETL CONTACT:** | Paul Ohodnicki and Jonathan Lekse |
|  |  |
| **DUTY LOCATION:** | Pittsburgh, PA |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **ACADEMIC LEVEL:** | **X** | PhD | **X** | MS |  | BS |  | Undergrad |  | Faculty |

|  |  |
| --- | --- |
| **POSITION** **INFORMATION:** | 1-year appointment; full time (40 hours per week) with the possibility of extension (anticipated at least 2 years project duration) |
|  |  |
| **CLOSING DATE:** | 6/30/2018 |
|  |  |
| **WHO MAY BE** **CONSIDERED:** | United States Citizens, LPRs, & Foreign Nationals with appropriate approval which includes F-1 OPT with EAD (STEM extension not valid), J-1 Exchange Visitor, and LPR with EAD |

**SUMMARY:**

An opportunity exists to join an interdisciplinary team developing new sensor technology for a range of energy applications spanning power generation, advanced manufacturing, and infrastructure monitoring.

The team seeks a candidate with a strong background in magnetic and electromagnetic properties characterization and electronic and thermal transport properties measurement of complex functional oxides. The research associate will assist us in developing a detailed fundamental understanding of the interplay between structure and functional properties in a range of complex oxide nanostructures and bulk materials. The candidate will primarily be involved in characterization of magnetic properties, electronic transport properties, and thermal transport properties as a function of material composition, processing conditions, temperatures, and the magnitude of applied magnetic fields. The candidate will also assist with the permeability and permittivity measurements using a wide range of high frequency electromagnetic property characterization instrumentation. Knowledge of magnetic and electromagnetic measurement technologies and techniques and hand on experience working with magnetic field and wide ranges of temperatue and frequency are highly desired. Strong collaborative interactions are expected with chemists and material scientists focused on materials synthesis and characterization as well as device level scientists focused on chemical sensing and catalytic applications. Publications in high quality scientific peer-reviewed journals, presentations at national and international technical meetings, and development of new intellectual property are all expected outcomes of the research to be performed.

Technical experience of interest for the research position includes:

1. Experience with the technologies and techniques that involve high magnetic field, cryo and high temperatures, and radio and microwave frequencies.
2. Experience with magnetic and transport properties measurements using vibrating sample magnetometer and physical properties measurement system.
3. Experience with two/four probe measurement techniques.
4. Experience with the microwave measurement techniques and hands-on familiarity with laboratory equipment such as network analyzers, impedance analyzers, oscilloscopes, spectrum analyzers.
5. Experience with instrumentation, data acquisition, and processing systems using MATLAB/LabVIEW.

A successful applicant will have an advanced degree in Materials Science, Applied Physics, Electrical Engineering, or a related field of study. Excellent communication skills and a willingness and interest to collaborate in an interdisciplinary team environment to drive towards overall project and team objectives is also highly desired.

**HOW TO APPLY:**

Applicants should apply through the Oak Ridge Institute for Science and Education (ORISE) program. The ORISE Program provides opportunities for undergraduate students, recent graduates, graduate students, postdoctoral researchers, and faculty researchers to apply classroom knowledge in a real-world setting to learn about NETL Research and Innovation Center’s (R&IC) core mission areas.

* Interested applicants should complete the online application at <http://www.orau.gov/netl/>.
* In the online application **list** **Paul Ohodnicki as your requested mentor.** This will associate your application with this research opportunity posting. Please send a CV to paul.ohodnicki@netl.doe.gov and jonathan.lekse@netl.doe.gov.
* If you have additional questions please contact Patricia Adkins-Coliane, Patricia.adkins-coliane@netl.doe.gov, who is the NETL Graduate Education Program Manager.