|  |  |
| --- | --- |
| **TITLE:** | Lab Researcher: Chemical Sensing Layer Development |
|  |  |
| **DEPARTMENT:** | U.S. Department of Energy/National Energy Technology Laboratory (NETL) |
|  |  |
| **NETL CONTACT:** | Paul Ohodnicki, paul.ohodnicki@netl.doe.gov |
|  |  |
| **DUTY LOCATION:** | Pittsburgh, PA |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **ACADEMIC LEVEL:** |  | PhD | **x** | MS | **x** | 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:** | March 31, 2019 |
|  |  |
| **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.

An MS or BS level researcher is sought for synthesizing and testing various chemical sensing materials to be used in field applications such as monitoring of CO2 in geological

formations and corrosion monitoring. The team seeks a candidate with a background in electrochemistry, chemistry, and/or chemical engineering. Experience of thin films, organic/ inorganic hybrid materials, nanotechnology, nanoparticles, and nanoporous materials is also highly desired. The research associate will work with principal investigator scientists to develop various sensing layer formulations and will test them under simulated conditions.

Technical reports, data analysis, presentation in regular meetings, and co-author in publications in high quality scientific peer-reviewed journals are all expected outcomes of the research to be performed. Hands-on experience in chemistry lab settings is a plus.

Technical experience of interest for the position in question includes:

1. Deposition techniques such as wet chemistry deposition, and electrolytic and electroless plating. Development and application for thin films of metal oxides, polymers and organic/inorganic hybrid materials including nanoporous metal-organic framework materials.
2. Electrochemistry and solid-electrolyte interaction. Experience with electrochemical techniques such as potentiodynamic polarization, electrochemical impedance spectroscopy, and related data analysis.
3. Materials characterization techniques including SEM, XRD, TGA, FTIR, XPS, etc.
4. Experience with optical, electronic, and mass-based measurement techniques including optical spectroscopy (UV, vis, near-IR, spectroscopic ellipsometry), 2- and 4-point resistivity and hall effect measurements, and QCM

A minimum of bachelor degree in chemistry, chemical engineering, materials science and engineering, or related areas is required, and a master degree is preferred. 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 job posting. Please send a CV to paul.ohodnicki@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.

The participant(s) will be assigned to the program solely for the educational benefit it provides. The assigned project should not include activities that are reserved for federal employees nor should it require a participant to perform inherently governmental functions such as: supervise or mentor federal employees or federal contractor staff, hire or fire anyone; have budget, program management, or signature authority; carry an official job title; or function in any way as a representative of the federal government.