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| **TITLE:** | Natural Gas Infrastructure Resistant Materials to Hydrogen Embrittlement |
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| **DEPARTMENT:** | U.S. Department of Energy/National Energy Technology Laboratory (NETL) |
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| **NETL CONTACT:** | Joseph Tylczak; Jospeh.Tylczak@netl.doe.gov  |
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| **DUTY LOCATION:** | Albany, OR |

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

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| **POSITION** **INFORMATION:** | 1-year appointment; full time (40 hours per week) with the possibility of extension |
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| **CLOSING DATE:** | December 30, 2018 |
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| **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:**

The National Energy Technology Laboratory (NETL) is working on developing internal metallic coatings as means of corrosion protection for natural gas pipelines. The post-doctoral researcher will be part of interdisciplinary team researching ways to minimize the susceptibility of catholicly protected pipeline to hydrogen embrittlement. The postdoctoral researcher will take an active role in the project by assisting in designing experiments aimed at investigating hydrogen entry, transport, trapping, and loss in steels with and without coatings in aqueous electrolytes, performing measurements in the laboratory, and communicating research findings through publications and presentations. Applicants should have excellent communication skills and laboratory experience relevant to attainment of these near-term goals.

**Required Qualifications:**

A PhD in Materials Science and/or Engineering preferred, candidates with a PhD in Chemistry or Chemical Engineering with relevant expertise will also be considered. In addition, the desired candidate will have the following:

1. Knowledge on environmentally-assisted cracking of alloys
2. Expertise in measuring hydrogen permeation using the Devanathan-Stachurski cell
3. Expertise in measuring hydrogen trapping sites
4. Expertise in electrochemical corrosion measurements
5. Experience with scanning electron microscopy is a plus.

Key Requirements:

1. Course work in metallurgy, materials science and engineering, mechanical engineering
2. Course in chemistry, corrosion and corrosion control of metals including galvanic protection
3. Strong verbal and written English communication skills
4. Demonstrated experience in conducting scientific research

**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’s core mission areas.

* Interested applicants should complete the online application at <http://www.orau.gov/netl/>. For questions or issues, please email both Terry.Howard@orau.org and Kerri.Fomby@orau.org .
* In the online application, **list** **Joseph Tylczak as your requested mentor.** This will associate your application with this research opportunity. Please send a CV to Joseph Tylczak at Joseph.Tylczak@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.