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| **TITLE:** | Computational Materials Scientists |
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| **DEPARTMENT:** | U.S. Department of Energy/National Energy Technology Laboratory (NETL) |
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| **NETL CONTACT:** | Omer Dogan; omer.dogan@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:** | 8/31/2018 |
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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:**

There are two post-doctoral positions available at the National Energy Technology Laboratory (NETL), starting on October 1, 2018. These positions seek highly motivated researchers who are interested in solving challenging applied materials problems using predictive computational modeling tools: First-principles density functional theory (DFT) methods, Molecular Dynamics simulations, Monte Carlo simulations, machine learning (ML), CALPHAD, and/or finite element methods, etc. One project involves predicting key materials properties (e.g., yield and fracture strengths, twinning and stacking faults energies, ductility, diffusion, etc.) at atomic level. The overarching goal of the project is to accelerate the design and development of new high-performance cost-effective structural materials for applications in extreme environments (high-temperature oxidation and aqueous corrosion). The other project involves alloy design for applications such as welding dissmilar materials, additive manufacturing, etc., using the concept of high-entropy alloys.

Successful applicants should have demonstrated skills in predicting electronic, magnetic, thermodynamic, kinetic, elastic, plastic, defects and interfacial properties of condensed matter using DFT methods. Proficiencies in computer programming are requied. Research experience in molecular dynamics simulation, Monte Carlo simulation, CALPHAD modeling, FEM modeling, high throughput data mining, and/or ML are highly desirable. Research experience in developing thermodynamic and mobility CALPHAD-type databases are very useful but are not required. The candidate will possess excellent verbal and written English communication skills and teamwork. Applicants with excellent record of quality journal publications are strongly encouraged to apply. This opportunity involves collaboration among multiple national laboratories within Department of Energy as well as with industry. The position is a one-year appointment with a possibility of extension.

**KEY REQUIREMENTS:**

* Ph.D. degree in Physics, Chemistry, Materials Science, or a related field.
* Proficiency in DFT calculations.
* Proficiency in computer programming using Fortran, C/C++, Python, etc.
* Being self-motivated and independent.

**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](mailto:Terry.Howard@orau.org) and [Kerri.Fomby@orau.org](mailto:Kerri.Fomby@orau.org) .
* In the online application, **list Omer Dogan as your requested mentor.** This will associate your application with this research opportunity. Please send a CV to [Omer.dogan@netl.doe.gov](mailto:Omer.dogan@netl.doe.gov).
* If you have additional questions, please contact Patricia Adkins-Coliane, [Patricia.adkins-coliane@netl.doe.gov](mailto: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.