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| **TITLE:** | R&D SOFC Grid Integration Power Electronics |
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| **DEPARTMENT:** | U.S. Department of Energy/National Energy Technology Laboratory (NETL) |
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| **NETL CONTACT:** | Paul Ohodnicki; paul.ohodnicki@netl.doe.gov |
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| **DUTY LOCATION:** | Pittsburgh, PA; Morgantown, WV |

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| **ACADEMIC LEVEL:** | **X** | PhD | **X** | MS | **X** | 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:** | 6/1/2019 |
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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:**

Through the Oak Ridge Institute for Science and Education (ORISE) this posting seeks a post-doctoral researcher to apply for an appointment to participate in the research and development of power electronics applications for interfacing between solid oxide fuel cell (SOFC) systems and utility grids at the National Energy Technology Laboratory (NETL). NETL is a multi-disciplinary, scientific and technical-oriented national laboratory and the U.S. Department of Energy’s primary lab supporting fossil fuel-based energy research.

The scientist/researcher will collaborate on an interdisciplinary team spanning industry, academic, and national laboratory partners that seeks to study the interactions between SOFC and power conditioning systems and to research novel methods to optimize SOFC system operations with emerging power electronics and power conversion applications.

**QUALIFICATIONS:**

An ideal candidate would be capable of researching within the team to (1) analyze and investigate potential interactions between SOFC systems and power conditioning systems, (2) design and simulate power electronics systems for grid integration, and (3) design the controller for the power electronics system for mitigating the disturbances from utility grids to SOFC systems for optimal SOFC operations. The ideal candidate would also be capable of leveraging analytical control design methods and power electronics simulations tools.

**KEY REQUIREMENTS:**

1. An advanced degree in Electrical Engineering, Applied Physics, Materials Science, or a related field (MS or PhD preferred).
2. Experience with designing and implementing controllers for single- and three-phase inverters.
3. Experience with MATLAB/Simulink/PLECS simulation tools or other power electronics simulation packages.
4. Experience with Si-based and SiC-based MOSFET and IGBT devices and gate drivers.
5. An understanding of circuit design and analysis.
6. Experience with designing and applying electronics and electrical test equipment including oscilloscopes with current and voltage probes, DSP controllers with PWM capability, impedance measurement systems, LCR meters, network analyzers, function generators, and other power electronics instruments.
7. Prefer the candidate is familiar with distribution class, medium voltage converters, such as multi-level converters.

**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.zintellect.com. For questions or issues, please email [NETLadmin@orau.org](mailto:NETLadmin@orau.org).
* In the online application, **list** **Paul Ohodnicki** **as your requested mentor.** This will associate your application with this research opportunity. Please send a CV to Paul Ohodnicki: [paul.ohodnicki@netl.doe.gov](mailto:paul.ohodnicki@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.