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| **TITLE:** | Microwave/Radio Frequency (Electromagnetic) Assisted Chemical Processing |
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| **DEPARTMENT:** | U.S. Department of Energy/National Energy Technology Laboratory (NETL) |
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| **NETL CONTACT:** | Mark Smith |
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| **DUTY LOCATION:** | Morgantown, WV |

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| **ACADEMIC LEVEL:** | **X** | PhD | **X** | 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:** | March 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:**

The Reaction Engineering Team at NETL is seeking a post-doctoral or early career researcher with experience in microwave/RF (electromagnetic)-assisted chemical processing. The candidate must possess significant fundamental knowledge and practical experience with state-of-the-art microwave system design and characterization for microwave (MW) systems such as waveguides, antennas, etc. Hands on experience in electromagnetic field simulation such as interactions of electromagnetic waves with materials would be preferred. The candidate must be well-versed in using microwave diagnostics techniques such as network analyzers, spectrum analyzers, oscilloscopes, etc. Candidate is not required to have chemistry or catalyst background.

Processes based on alternative-energy input such as MW and plasma are generating interest in many industrial applications. Recently, MW-assisted catalytic processes have demonstrated significant potential in several fossil energy-related applications. Therefore, in addition to traditional catalyst-based processes, the Reaction Engineering Team is responsible for evaluating innovative processes using microwaves, RF, and plasma for a wide range of fossil energy applications. The team currently possesses significant expertise in heterogeneous catalysis and fuel conversion processes, and looks to broaden their capabilities and explore novel technologies that utilize the various interactions between EM fields and different materials. The selected candidate will research closely with the team as well as other researchers at NETL to understand the underlying mechanism of microwave-assisted catalytic reactions.

**KEY REQUIREMENTS:**

* **Preferred qualifications:** A Ph.D. in Physics, Electrical Engineering, Mechanical Engineering. The qualifications above plus hands-on experience in simulation, design and characterization of MW systems.
* **Minimum qualifications:** An M.S. in Physics, Electrical Engineering, Mechanical Engineering, or a related field, with experience in microwave/RF (electromagnetic) simulation, design and characterization of MW systems.

**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 Mark Smith as your requested mentor.** This will associate your application with this job posting. Please send a CV to **Dr. Mark Smith** at **mark.smith@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.