Opportunity Title: Microwave/Radio Frequency (Electromagnetic) Assisted Chemical Processing-PGRP
Opportunity Reference Code: NETL-2019-PGRP-Smith-1

Organization National Energy Technology Laboratory (NETL)

Reference Code NETL-2019-PGRP-Smith-1

How to Apply A complete application consists of:

- An application
- Transcripts
- A current resume/CV, including academic history, employment history, relevant experiences, and publication list
- Two educational or professional references

Please send a CV to Mark Smith at **mark.smith@netl.doe.gov**

All documents must be in English or include an official English translation.

If you have questions, send an email to NETLadmin@orau.org. Please include the reference code for this opportunity in your email.

Application Deadline 4/8/2019 11:59:00 PM Eastern Time Zone

Description Through the Oak Ridge Institute for Science and Education (ORISE) this posting seeks a motivated post-doctoral or early career researcher with experience in microwave/RF (electromagnetic)-assisted chemical processing at the National Energy Technology Laboratory (NETL). 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.

Qualifications 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.

KEY REQUIREMENTS:

- **Preferred qualifications:** A Ph.D. in Physics, Electrical Engineering,

Opportunity Title: Microwave/Radio Frequency (Electromagnetic) Assisted Chemical Processing-PGRP
Opportunity Reference Code: NETL-2019-PGRP-Smith-1

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.

Eligibility Requirements

- **Degree:** Any degree .
- **Discipline(s):**
  - **Chemistry and Materials Sciences** (12)
  - **Communications and Graphics Design** (2)
  - **Computer, Information, and Data Sciences** (16)
  - **Earth and Geosciences** (21)
  - **Engineering** (27)
  - **Environmental and Marine Sciences** (14)
  - **Life Health and Medical Sciences** (45)
  - **Mathematics and Statistics** (10)
  - **Other Non-Science & Engineering** (2)
  - **Physics** (16)
  - **Science & Engineering-related** (1)
  - **Social and Behavioral Sciences** (27)

Affirmation I certify that I:

- Have an earned or will receive a doctoral or master's degree by appointment start date.

OR

- Have received the degree no more than three years before the date of application (postmasters' applicants).

OR

- Have received the degree no more than five years before the date of application (postdoctoral applicants).