

POSITION TITLE: Post-doctoral researcher in experimental characterization of solvent based CO₂ separation

DEPARTMENT: Department of Energy

AGENCY: National Energy Technology Laboratory (NETL)

LEVEL: Post-doctoral

POSITION INFORMATION: Full-Time, up to three years renewable

DUTY LOCATION: Pittsburgh, Pennsylvania

WHO MAY BE CONSIDERED: United States Citizens & Foreign Nationals with appropriate approval

SUMMARY:

A post-doc is sought with experience in solvent based gas separation this posting seeks a motivated, post-graduate with experience in solvent based gas separation. NETL's Office of Research & Development is developing a number of hydrophobic physical solvents that can selectively capture CO₂ from syngas containing CO₂, H₂, CO, H₂O and N₂. Example solvents include PDMS and various ionic liquids. One advantage of hydrophobic physical solvents (such as PDMS) over hydrophilic physical solvents (such as PEGDME & methanol) is that hydrophobic physical solvents can be used to capture CO₂ at higher temperatures than hydrophilic physical solvents because the syngas does not need to be chilled to a temperature at which there is no water vapor left in the syngas. NETLs seeks a post-doctoral researcher who has experience synthesizing and/or characterizing physical solvents. Characterization experiments include measurements of the following properties: CO₂/H₂/N₂ solubility, viscosity, thermal conductivity, surface tension, foaming/misting, and specific heat constant. The researcher will work closely with other experimentalists in the group as well as collaborate with system modelers to determine which solvents can best lower the cost of capturing CO₂ from an IGCC power plant. The position will be located at NETL in Pittsburgh, PA.

KEY REQUIREMENTS:

- Applicants must be U.S. Citizens or approved Foreign Nationals
- Suitable for Federal employment, as determined by background investigation
- **Minimum qualifications:** An M.S. in Chemical Engineering, Mechanical Engineering, or a related field, with experience and publications in the synthesis or experimental characterization of solvents. **Preferred qualifications:** A Ph.D. in Chemical Engineering. The qualifications above plus experience designing solvent based absorption and desorption systems for CO₂ capture and regeneration.

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. NETL utilizes the ORISE program to support research and work within NETL's Office of Research & Development.

- Interested applicants should complete the online application at <http://www.ornl.gov/netl/>

- In the online application list **Nicholas Siefert** as your requested mentor. This will associate your application with this job posting. Please send a CV to Dr. Nicholas Siefert, nicholas.siefert@netl.doe.gov
- If you have additional questions please contact Nancy Andres, Nancy.Andres@NETL.DOE.GOV, who is the NETL ORISE program contact.