

JOB TITLE:	Postdoctoral researcher
DEPARTMENT, AGENCY:	Department of Energy, National Energy Technology Laboratory
SALARY RANGE:	Depends on level of experience
OPEN PERIOD:	April – August, 2013
LEVEL:	Post-graduate
POSITION INFORMATION:	Temporary Appointment: 1 year with potential for extension; Full-Time (40 hours per week); Starting as soon as possible.
DUTY LOCATION:	Albany, OR
WHO MAY BE CONSIDERED:	United States Citizens & Foreign Nationals with appropriate approval

JOB SUMMARY:

NETL's Office of Research and Development Computational Science Division conducts research to develop tools to enhance our understanding and enable more rapid and efficient scale-up and design of energy technologies

Interest and expertise is solicited in the field of simulation science research, development and application using CFD models in the area of chemically reacting, multiphase gas-liquid flows through complex geometry. Applicants should have a strong background in reactive multiphase flow modeling including interface tracking methods and experience in the following areas:

- simulation research and development using computational fluid dynamics software packages, such as, MFX, FLUENT, and openFOAM
- post processing simulation results using standard visualization packages (e.g., EnSight, ParaView, VisIT)
- high performance computing platforms (e.g., Linux, Unix)
- coding languages, such as, Fortran, Matlab, C/C++
- mesh generation (e.g., Gambit)

The applicant will have the opportunity to work with a multidisciplinary, multi-lab team of scientists and engineers in developing simulation tools to aid in the design and development of CO₂ capture technology from power plants.

KEY REQUIREMENTS:

- Applicants must be U.S. Citizens or approved Foreign Nationals suitable for Federal employment, as determined by background investigation.
- Must hold a PhD degree from an accredited institution in chemical engineering, mechanical engineering, applied mathematics or another field appropriate for the applicant's area of expertise.

HOW TO APPLY:

Applicants should apply through the Oak Ridge Institute for Science and Education (ORISE) program (orise.ornl.gov). 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 <https://netl.ornl.gov/>
- In the online **application list Janine Carney as your requested mentor**. This will associate your application with this job posting.

If you have additional questions please contact Nancy Andres, Nancy.Andres@NETL.DOE.GOV, who is the NETL ORISE program contact.

ADDITIONAL INFORMATION:

As an ORISE post-graduate researcher with the U.S. Department of Energy's National Energy Technology Laboratory, you are expected to be an active member of a research team. Duties include formulating specific research plans, supporting and performing numerical simulations, data analysis and interpretation, presenting results to both internal and external audiences, preparing manuscripts for publication in peer-reviewed journals.

The research topic for which this announcement is seeking support concerns developing a CFD model for simulating CO₂ absorption using chemical solvents with specific consideration of high-viscosity liquids. The postdoctoral researcher will focus on modeling the hydrodynamics of counter-current gas-liquid flow through a packed bed of complex geometry and development of corresponding sub-structure closure models to account for the complex interaction between the fluid-solid and fluid-fluid phases.