

**Postgraduate Research Program  
U.S. Environmental Protection Agency  
National Risk Management Research Laboratory  
Air Pollution Prevention And Control Division  
Research Triangle Park, North Carolina**

*Research Environmental Scientist/Engineer*

Project # NRMRL/APPCD-2008-01

A postdoctoral appointment is available at the U.S. Environmental Protection Agency (EPA), National Risk Management Research Laboratory (NRMRL). The appointment will be served with the Office of Research and Development, Air Pollution Prevention and Control Division (APPCD) in Research Triangle Park, North Carolina. The participant will have the opportunity to propose, develop, and conduct applied research examining formation and quantification of organic air toxics from combustion and industrial sources as part of a comprehensive program at the EPA's combustion research facility.

**Background:** Investigators from APPCD are engaged in a laboratory- and field- focused research program to quantify emissions of air toxics from industrial, combustion-related, and uncontrolled burning sources of pollutants. The program is determining organic air toxic emission factors from uncontrolled burning, determining the fate and sources of brominated organics in the environment, developing advanced laser-based methods for quantifying aromatic air toxics, and analyzing emissions from electronic waste recycling operations. A postdoctoral fellow will be placed in this program to conduct original research through both laboratory experiments and field sampling efforts. The current program conducts laboratory-scale combustion experiments, pilot-scale experiments, and field-scale sampling. Collaborative work with the U.S. Army, Department of Defense, United Nations Environment Programme, Mexican EPA, and various other domestic and international research groups is on-going. The successful applicant will be able to make use of extensive combustion and analytical laboratory facilities located at the EPA laboratories in Research Triangle Park, North Carolina. Research results are transferred to the public and private sectors by publications in the peer reviewed literature and conference presentations.

The postdoctoral fellow will have the opportunity to

- Sample from combustion reactors to study trace organic pollutant reactions.
- Conduct field sampling projects for combustion pollutants.
- Run laboratory and field efforts to quantify industrial process pollutants.

The participant will be strongly encouraged to publish the project results in peer review journals and present data at national and international conferences.

Applicants should have received a doctoral degree in environmental sciences (chemistry, physics) or engineering (chemical, mechanical, environmental) or a closely related field within three years of the desired starting date, or completion of all requirements for the degree should be expected prior to the starting date.

Applicants should have experience in combustion-related chemical reaction experimentation, air pollutant sampling, chemical analysis, gas/solid reactions, and chemical kinetic/mechanistic modeling of combustion processes for application to, especially, formation of halogenated aromatic pollutants, such as chlorinated and brominated dibenzodioxins/furans, thiopenenes, benzenes, and biphenyls from biofuels. A background in air pollutant sampling from high temperature, combustion reactors as well as ambient air sampling of combustion processes is desired. Analytical skills desired include associated techniques such as high resolution gas chromatography/high resolution mass spectrometry (HRGC/HRMS), high temperature source sampling, dust/particle sampling, criteria pollutant sampling (e.g., UV, FTIR), polycyclic aromatic hydrocarbon sampling. Familiarity with EPA sampling methods for semi-volatile organics and volatile organics is important as is operation of continuous emission monitors. Other laboratory/engineering skills associated with reactor operation and maintenance are critical. Computer fluency, including familiarity with laboratory interface and data graphics software (e.g., LabView), is essential.

The program is open to all qualified individuals without regard to race, sex, religion, color, age, physical or mental disability, national origin, or status as a Vietnam era or disabled veteran. U.S. citizenship or lawful permanent resident status is preferred (but can also hold an appropriate visa status - however, an H1B visa is not appropriate). **The participant does not become an EPA employee.**

The participant will be selected based on academic records, recommendations, research interests, compatibility of background and interests with research programs and projects, and the availability of funds, staff, programs, and equipment.

This appointment is full time at NRMRL/APPCD in Research Triangle Park, North Carolina, for one year and may be renewed upon recommendation of NRMRL/APPCD and subject to availability of funds.

The participant will receive a monthly stipend ranging from \$4,500 to \$5,700, determined by experience. Limited inbound travel and moving expenses may be reimbursed according to established policies. The participant must show proof of health and medical insurance. The participant does not become an EPA employee.

The Postdoctoral Research Program for NRMRL is administered by the Oak Ridge Institute for Science and Education. ***Please reference Project # NRMRL/APPCD-2008-01 when calling or writing for information.*** For additional information and application materials contact: Postdoctoral Research Program/NRMRL, Attn: Betty Bowling, MS 36, Oak Ridge Institute for Science and Education, P.O. Box 117, Oak Ridge, Tennessee 37831-0117, Phone: (865) 576-8503 FAX: (865) 241-5219 or e-mail: [betty.bowling@orau.org](mailto:betty.bowling@orau.org).

An application can be found at [www.orau.gov/orise/edu/EPA/app-gugrgpd.pdf](http://www.orau.gov/orise/edu/EPA/app-gugrgpd.pdf)