Curriculum Vita

Philip K. Hopke

Experience:

Philip K. Hopke received B.S. in Chemistry from Trinity College, Hartford, CT in 1965 and his Ph.D. degree from Princeton University in 1969. He was a research associate at M.I.T. until August 1970. After 4 years as an assistant professor of chemistry at the State University College at Fredonia, NY, he joined the University of Illinois as a visiting assistant professor of chemistry. Beginning in 1975, Dr. Hopke joined the Institute for Environmental Studies where, in 1978, he was promoted to Associate Professor and in 1982, he became Professor of Environmental Chemistry with joint appointments in the Departments of Civil Engineering and Nuclear Engineering. On July 1, 1989, he joined Clarkson University as the first Robert A. Plane Professor. From July 1997 to June 1999, he served as Dean of the Graduate School and from July 1999 to June 2000, he was Chair of the Department of Chemistry and Head of the Division of Physical and Chemical Sciences. In July 2000 his principal appointment moved to the Department of Chemical Engineering while retaining appointment in Chemistry and Civil and Environmental Engineering.. As of January 1, 2002, he becomes the Bayard D. Clarkson Distinguished Professor and Director of the Center for Air Resources Engineering and Science.

Research Interests:

Multivariate statistical methods for data analysis; Chemical characterization of ambient aerosol samples; Characterization of source/receptor relationships for ambient air pollutants; Experimental studies of homogeneous, heterogenous, and ion-induced nucleation; Indoor air quality; Exposure and risk assessment

Honors and Awards:

2008-09 Jefferson Science Fellow, US. Department of State
2008 Fellow, American Association for Aerosol Research
2007 Eastern Analytical Symposium Award for Excellence in Chemometrics
2007 Fellow, American Association for the Advancement of Science
2006 Fellow, International Aerosol Research Assembly
2006 Election to the International Statistics Institute
2004 David Sinclair Award of the American Association for Aerosol Research
1991 Principal Investigator Award in Air Quality Research, Ontario Ministry of the Environment
Society of Sigma Xi, Society of Phi Kappa Phi
Who's Who in America, Who's Who in Science and Technology, Who's Who in the World
American Men and Women of Science

Professional Activities:

Chair, Clean Air Scientific Advisory Committee, U.S. Environmental Protection Agency, 2000 - 2004.
Chair, Subcommittee on Ambient Air Monitoring and Methods, 2004 - 2005.
Member, Clean Air Scientific Advisory Committee, U.S. Environmental Protection Agency, 1995 - 2000.
Member, US. EPA Science Advisory Board, October 1997 to September 2007.
Member of 10 NRC Committees related to air pollution, health and risk assessment
President, American Association for Aerosol Research, October 2003 to October 2004.
Editor-in-Chief, *Aerosol Science and Technology*, 1993-2002
Editor, *Chemometrics and Intelligent Laboratory Systems* 1986-

Selected Recent Publications:

A Study of Health Effect Estimates Using Competing Methods to Model Personal Exposures to Ambient PM2.5, M. Strand, P.K. Hopke, W. Zhao, S. Vedal, E. Gelfand, N. Rabinovitch, *J. Exposure Sci. Environ. Epi.* 17: 549-558 (2007).

Measurement of PM2.5 Nonvolatile and Semi-Volatile Organic Material with the Sunset Laboratory Carbon Aerosol Monitor, B.D. Grover, M. Kleinman, N.L. Eatough, D.J. Eatough, R.A. Cary, P.K. Hopke, W.E. Wilson, *J. Air Waste Manage. Assoc.* 58: 72–77 (2008).

Apportionment of Ambient Primary and Secondary PM2.5 at the Pittsburgh National Energy Laboratory (NETL)Pittsburgh PM Characterization Site Using Positive Matrix Factorization (PMF) and a Potential Source Contributions Function (PSCF) Analysis, D.V. Martello, N.J. Pekney, R.R. Anderson, C.I. Davidson, P.K Hopke, E. Kim, W.F. Christensen, N.F. Mangelson, and D.J. Eatough, *J. Air Waste Manage. Assoc.* 58: 357–368 (2008).

Characterization of Fine Aerosol and its Inorganic Components at Two Rural Locations in New York State, R.

Sunder Raman, P.K. Hopke, and T.M. Holsen, *Environmental Monitoring and Assessment* 144: 351-366 (2008).

Comparison of Two Cluster Analysis Methods using Single Particle Mass Spectra, W. Zhao, P.K. Hopke, K.A. Prather, *Atmospheric Environ.* 42: 881-892 (2008).

Development and Evaluation of a Particle-Bound Reactive Oxygen Species Generator, P. Venkatachari and P.K. Hopke, *J. Aerosol Sci.* 39: 168-174 (2008).

The Use of Source Apportionment for Air Quality Management and Health Assessments, P.K. Hopke, *J. Toxicology and Environmental Health* 71: 555–563 (2008).

Fine Particle Sources and Cardiorespiratory Morbidity: An Application of Chemical Mass Balance and Factor Analytical Source Apportionment Methods, J.A. Sarnat, A. Marmur, M. Klein, E. Kim, A.G. Russell, S.E. Sarnat, J.A. Mulholland, P.K. Hopke, P.E. Tolbert, *Environmental Health Perspectives* 116: 459-466 (2008).

Sources Identification of the Atmospheric Aerosol at Urban and Suburban Sites in Indonesia by Positive Matrix Factorization, M. Santoso, P.K. Hopke, A. Hidayat, Diah Dwiana L, *Science of the Total Environment* 397: 229-238 (2008).

Source Apportionment and Spatial Distributions of Coarse Particles During the Regional Air Pollution Study (RAPS), I.J. Hwang, P.K. Hopke, J.P. Pinto, *Environ. Sci. Technol.* 42: 3524–3530 (2008).

Carbonaceous Aerosol at Two Rural Locations in New York State: Characterization and Behavior, R. Sunder Raman, P.K. Hopke, T.M. Holsen, *J. Geophys. Res.* 113: D12202 (2008).

Source apportionment of ambient fine particle size distribution using positive matrix factorization in Erfurt, Germany, W. Yue, M. Stölzel, J. Cyrys, M. Pitz, J. Heinrich, W.G. Kreyling, H.-E. Wichmann, A. Peters, S. Wang, P.K. Hopke, *Science of the Total Environment* 398: 133–144 (2008).

Development and Laboratory Testing of an Automated Monitor for the Measurement of Atmospheric Particle-bound Reactive Oxygen Species (ROS), P. Venkatachari, P.K. Hopke, *Aerosol Sci. Technol.* 42:629–635 (2008).

Source Characterization of Ambient Fine Particles at Multiple Sites in the Seattle Area, E. Kim and P.K. Hopke, *Atmospheric Environ.* 42: 6047-6056 (2008).

Characterization of Ambient Fine Particles in the Northwestern Area and Anchorage, AK, E. Kim and P.K. Hopke, *J. Air Waste Manage. Assoc.* 58: 1328–1340(2008).

Quantitative Results from Single Particle Characterization Data, P.K. Hopke, *J. Chemometrics* 22: 528–532 (2008).

Atmospheric Mercury (Hg) in the Adirondacks: Concentrations and Sources, H.D. Choi, T.M. Holsen, and P.K. Hopke, *Environ. Sci. Technol.* 42: 5644–5653 (2008).

Source apportionment of particulate matter in Europe: a review of methods and results, Viana, M., Kuhlbusch, T.A.J., Querol, X., Alastuey, A., Harrison, R.M., Hopke, P.K., Winiwarter, W., Vallius, M., Szidat, S., Prévôt, A.S.H., Hueglin, C., Bloemen H., Wåhlin, P., Vecchi, R., Miranda, A.I., Kasper-Giebl, A., Maenhaut, W., Hitzenberger, R., *J. Aerosol Sci.* 39: 827–849 (2008).

Urban Air Quality in the Asian Region, P.K. Hopke, D.D. Cohen, B.A. Begum, S.K. Biswas, B. Ni, G.G. Pandit, M. Santoso, Y.-S. Chung, P. Davy, A. Markwitz, S. Waheed, N. Siddique, F.L. Santos, P.C.B. Pabroa, M.C.S. Seneviratne, W. Wimolwattanapun, S. Bunprapob, T.B. Vuong, and A. Markowicz, *Science of the Total Environment* 404: 103-112 (2008).

Characterization of Products Formed in the Reaction of Ozone with α-Pinene: Case for Organic Peroxides, P. Venkatachari and P.K. Hopke, *J. Environmental Monitoring* 10: 966-974 (2008).

Estimation of Source Apportionment of Ambient $PM_{2.5}$ at Western Coastal IMPROVE Site in USA. I.-J. Hwang, D.S. Kim, P.K. Hopke, *Journal of Korean Society for Atmospheric Environment* 24: 30-42 (2008).

Fibrous Particle Deposition in Human Nasal Passage: the Influence of Particle Length, Flow Rate and Geometry of Nasal Airway, Z. Wang, P.K. Hopke, G. Ahmadi, Y.S. Cheng, P.A. Baron, *J. Aerosol Sci.* 39: 1040–1054 (2008).

Contemporary Threats and Air Pollution, P.K. Hopke, *Atmospheric Environ.* 43:87-93 (2009).

Quantifying Road Dust Resuspension in Urban Environment by Multilinear Engine: a Comparison with PMF2, Amato F., Pandolfi M., Escrig. A., Querol. X., Alastuey A., Pey. J., Perez N. and Hopke P. K., *Atmospheric Environ.* 43: 2770-2780 (2009).

Secondary Organic Aerosol from α-Pinene Ozonolysis in a Dynamic Chamber System, X. Chen, P.K. Hopke, *Indoor Air* (in press, 2009).

Professor Hopke has authored or coauthored over 425 papers in scientific journals, more than 80 chapters in books and peer-reviewed proceedings, written 1 and edited 5 books, directed 45 Master of Science and 29 Doctor of Philosophy theses, and written numerous technical reports.