Particulate Matter Science for Policy Makers

Particulate Matter Science for Policy Makers: A NARSTO Assessment was commissioned by NARSTO, a cooperative public-private sector organization of Canada, Mexico and the United States. It is a concise and comprehensive discussion of the current understanding by atmospheric scientists of airborne particulate matter (PM). Its goal is to provide policy makers who implement air-quality standards with this relevant and needed scientific information.

The assessment is organized using the following considerations for dealing with air-quality issues:

- Perspective for Managing PM
- Health Effects Context
- Atmospheric Aerosol Processes
- Emission Characterization
- Particle and Gas Measurements
- Spatial and Temporal Characterization of PM
- Receptor Methods
- Chemical Transport Models
- Visibility and Radiative Balance Effects
- Conceptual models of PM for nine geographic regions in North America

The primary audience for this volume will be regulators, scientists, and members of industry, all of whom have a stake in effective PM management. It will also inform exposure and health scientists, who investigate causal hypotheses of health impacts, characterize exposure, and conduct epidemiological and toxicological studies.

Peter H. McMurry is the Kenneth T. Whitby Professor of Mechanical Engineering at the University of Minnesota, where he has served as Department Head since 1977. He is a past President of the American Association for Aerosol Research. His research focuses on phenomena including nucleation, growth, water uptake, and light scattering. With his research colleagues he has developed a condensation nucleus counter to detect particles as small as 3 nm, aerodynamic lenses to produce tightly collimate particle beans, and instruments to measure particle properties that include density, refractive index, and water content. He has written recent review articles on atmospheric aerosol measurement and nucleation.

Marjorie F. Shepherd is Senior Science Advisor at the Atmospheric and Climate Science Directorate, Meteorological Service of Canada. Her work involves investigating sampling and analysis methodologies for ambient volatile organic compounds. She has coordinated several projects within the Canadian multi-stakeholder science assessment for ground-level ozone. As science advisor for the Meteorological Service of Canada, she co-lead, with Health Canada, the development of science assessments for HF, CO, ozone and particulate matter – all in support of developing Canadian air quality objectives and standards.

James S. Vickery is one of the founding members of NARSTO and a member of the Executive Steering Committee. He is a Co-Leader of the US Committee on Environment and Natural Resources - Particulate Matter Research Work Group, which coordinates all U.S. Federally sponsored research concerning Particulate Matter. He is Special Assistant to the Director of EPA's National Exposure Research Laboratory, where he has also held the positions of Division Director and Assistant Laboratory Director. He has also managed several different program and policy offices in EPA's Washington, DC headquarters.

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A NARSTO Assessment

Edited by

Peter H. McMurry
University of Minnesota

Marjorie F. Shepherd
Environment Canada

James S. Vickery
U.S. Environmental Protection Agency

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