

Technical Program

Third Symposium: History of Aerosol Science

Friday, September 8, 2006

8:30 to 10:15 A.M.

Session 1. Fundamental Aerosol Science

Chair: David Ensor

Welcome

1.1 The Dozen Most Innovative Aerosol Studies During the Last Two Decades

JAMES W. GENTRY

Department of Chemical Engineering, University of Oklahoma, Norman, OK, USA

1.2 A Brief History of Lung Deposition Modeling

CHIU-SEN WANG

Department of Chemical and Biomolecular Engineering, University of California at Los Angeles, Los Angeles, CA 90095 USA

1.3 The History of Aerosol Photoemission (APE)

REINHARD NIESSNER

Institute of Hydrochemistry, Technical University of Munich, Marchioninstr. 17, D-81377 Munich, Germany

1.4 The Key Developments in Tribocharging of Aerosols

JAMES W. GENTRY

Department of Chemical Engineering, University of Oklahoma, Norman, OK, USA

1.5 History of the Flow Diffusion Chamber Development

MICHAEL ANISIMOV

Institute of Chemical Kinetics and Combustion, Siberian Division of the Russian Academy of Sciences, 630090 Novosibirsk, Russia

10:15 A.M. to 10:30 A.M.

Break

10:30 to 12:15 P.M

Session 2. Applied Aerosol Science

Chair: Gilmore Sem

2.1 The Development of FIDO (Fog, Intensive Dispersal Of)

IAN COLBECK

Centre for Environment and Society, Department of Biological Sciences, University of Essex, Colchester CO4 3SQ, UK

2.2 From China's Great Wall to Hollywood's Great Spy: The Story of Military Smokes and Obscurants

CHRISTOPHER A. NOBLE

Intelligence Systems Operations, Northrop Grumman Corp., Fairfax, VA 20171 USA.

2.3 Aerosol Wars: Facts and Fiction: Defense & Offense

A Short History of Some Military Applications, Advances and Challenges

ARTHUR K. STUEMPFLE

OptiMetrics Inc., 2107 Laurel Bush Road, Ste. 209, Bel Air, MD 21015-5203 USA

2.4 Discovering Particles in the Upper Atmosphere

PETER BRIMBLECOMBE¹ and R. (Don) G. Grainger²

¹*School of Environmental Sciences, University of East Anglia, Norwich NR4 7TJ, UK*

²*Atmospheric Oceanic and Planetary Physics, Clarendon Laboratory, University of Oxford, Parks Road, Oxford OX1 3PU UK*

2.5 Chernobyl Accident and Observations in Sweden and Finland

Jussi Paatero¹, KAARLE HÄMERI², Hans-Christen Hansson³, Henning Rodhe⁷, Markku Kulmala², Taisto Raunemaa⁴, Matti Jantunen⁵, Pertti Hari⁶, Rolf Mattsson¹, Bill Zoller⁸, and Christer Persson⁹

¹*Finnish Meteorological Institute, P.O. Box 503, FI-00101 Helsinki, Finland*

²*Department of Physical Sciences, P.O. Box 64, FI-00014 University of Helsinki, Finland*

³*ITM, Stockholm University, Sweden (deceased)*

⁴*University of Kuopio, Kuopio, Finland*

⁵*National Public Health Institute, Dept. of Environmental Health, P.O. Box 95, FI-70701, Kuopio, Finland*

⁶*Department of Forest Ecology, FI-00014 University of Helsinki, Finland*

⁷*Department of Meteorology, Stockholm University, Sweden*

⁸*USA*

⁹*Sweden*

A Special Tribute to Taisto Raunemaa

KAARLE HÄMERI

12:30 P.M. to 1:30 P.M.

Lunch

1:30 P.M. to 2:45 P.M.

Session 3. A Revolution in Tropospheric Aerosol Science (I)

Chairs: George Hidy and Peter Mueller

3.1 How the Pasadena Aerosol Study and Subsequent ACHEX Started, Survived and Tested Propositions Still in Vogue. Some Personal Histories and Analysis

PETER K. MUELLER

TropoChem, Palo Alto, CA 94306 USA

3.2 Memories and Legacy of the ACHEX Mobile Semi-Trailer Air Pollution Laboratory

GILMORE J. SEM¹, William E. Clark², George M. Sverdrup³, and Virgil A. Marple⁴

¹ TSI Incorporated, 500 Cardigan Road, Shoreview, MN 55126 USA

² 8760 Tassajara Creek Road, Santa Margarita, CA 93453 USA

³ National Renewable Energy laboratory, 1617 Cole Boulevard, Golden CO 80401 USA

⁴ Mechanical Engineering Department, University of Minnesota, Minneapolis, MN 55455 USA

3.3 Measurements of the 3-D Distribution and Transport of Aerosols: Precedents Set by the 3-D Pollutant Gradient Study in Cooperation with ACHEX

DON L. BLUMENTHAL

Sonoma Technology, Inc. Petaluma, CA 94954 USA

2:45 P.M. to 3:45 P.M.

Break and History Exhibit

3:45 P.M. to 5:00 P.M.

Session 4. A Revolution in Tropospheric Aerosol Science (II)

Chairs: George Hidy and Peter Mueller

4.1 Integrating Nephelometer: Coming of Age

DAVID S. ENSOR¹ and David S. Covert²

¹Center for Aerosol Technology, Research Triangle Institute, Research Triangle Park, NC 27709 USA

²University of Washington, Seattle, WA 98195 USA

4.2 EPA Perspective on the Importance of the California Aerosol Characterization Experiment Study (ACHEX)

WILLIAM E. WILSON

National Center for Environmental Assessment, U.S. Environmental Protection Agency, Research Triangle Park, NC 27711 USA

4.3 Reminiscences about Pasadena Aerosols and Eventually the ACHEX

George M. HIDY

Envair/Aerochem, Placitas, NM 87043 USA

Saturday, September 9, 2006

8:30 A.M. to 10:15 A.M.

Session 5. Biographies

Chair: Helmut Horvath

5.1 John William Strutt, Third Baron Rayleigh: Victorian Polymath

IAN COLBECK

*Centre for Environment and Society, Department of Biological Sciences, University of Essex,
Colchester CO4 3SQ, UK*

5.2 Maxmillian Ringelmann: Innovator of the First Remote Aerosol Sensing System

DAVID S. ENSOR and Drew Trenholm

*Center for Aerosol Technology, Research Triangle Institute, Research Triangle Park, NC
27709 USA*

5.3 The Scientific Work and Legacy of J. A. McClelland

THOMAS C. O'CONNOR

Department of Physics, National University of Ireland, Galway, Ireland

5.4 A Review of the Lecture 'Particles in the Atmosphere—C.N. Davis' Given at the Inaugural Meeting of the Aerosol Society, July 1986

IAN COLBECK

*Centre for Environment and Society, Department of Biological Sciences, University of Essex,
Colchester CO4 3SQ, UK*

5.5 Uncle Sasha (Alexandr Georgievich Sutugin) (withdrawn)

ALEX A. LUSHNIKOV

*Department of Physical Sciences, University of Helsinki, P.O. Box 64, FIN-00014, Helsinki,
Finland*

10:15 A.M. to 10:30 A.M.

Break

10:30 A.M. to 12:15 P.M

Session 6. Organizations and Development of Modern Aerosol Science

Chair: Jim Gentry

6.1 Exploring Inhaled Particles and Human Health at the New York University Institute of Environmental Medicine

BEVERLY S. COHEN

*Institute of Environmental Medicine, New York University School of Medicine, Tuxedo, NY
USA*

6.2 The Clean Air Commission of the Austrian Academy of Sciences, a Historical Sketch

HELMUTH HORVATH¹ and Othmar Preining²

¹ *Institute of Experimental Physics, University of Vienna, Boltzmannngasse 5, 1090 Vienna, Austria*

² *Austrian Academy of Sciences, Dr. Iganz Seipl Plaz 1, 1010 Vienna, Austria*

6.3 Aerosol Research at the University of Minnesota

BENJAMIN Y. H. LIU, Virgil A. Marple, David Y. H. Pui, Peter H. McMurry, David Kittelson and Thomas E. Kuehn

Particle Technology laboratory, Mechanical Engineering Department, University of Minnesota, Minneapolis, MN 55455 USA

6.4 Fissan-Pui-TSI International Collaboration in Aerosol Research

HEINZ FISSAN¹, David Y. H. Pui² and Gilmore J. Sem³

¹ *University of Duisburg-Essen, Institute of Energy and Environmental Technology (IUTA) e. V., Bliersheimer Str. 60, 47229 Duisberg, Germany*

² *Particle Technology laboratory, Mechanical Engineering Department, University of Minnesota, Minneapolis, MN 55455 USA*

³ *TSI Incorporated, 500 Cardigan Road, Shoreview, MN 55126 USA*

6.5 Nanoparticles—Early Metrology and Observations (1875-1975)

VOLKER A. MOHNEN¹ and George M. Hidy²

¹ *State University of New York at Albany, Albany, NY 12205 USA*

² *Envair/Aerochem, Placitas, NM 87043 USA*

12:15 P.M. to 1:30 P.M.

Lunch

1:30 P.M. to 3:15 P.M.

Session 7. Aerosol Technology

Chair: Tom Merrifield

7.1 Soiling of Limestone Buildings as an Indicator of Past Pollution

CLIFF I. DAVIDSON^{1,2} and Wei Tang^{1,3}

¹ *Department of Civil and Environmental Engineering, Carnegie Mellon University, Pittsburgh, PA 15213 USA*

² *Department of Engineering and Public Policy, Carnegie Mellon University, Pittsburgh, PA 15213 USA*

³ *Currently with Atmospheric Modeling Division, U.S. Environmental Protection Agency, Research Triangle Park, NC 27711 USA*

7.2 Review of Particle Size Distribution Measurements of Engine Exhaust Before 1985

GILMORE J. SEM¹, Oliver F. Bischof² and David B. Kittelson³

¹ *TSI Incorporated, 500 Cardigan Road, Shoreview, MN 55126 USA*

² *TSI GmbH, Neuköllner Strasse 4, D-52068, Aachen, Germany*

³ *Department of Mechanical Engineering, University of Minnesota, Minneapolis, MN 55455 USA*

7.3 History of Virtual Impactors

VIRGIL A. MARPLE and Bernard A. Olson

Particle Calibration Laboratory, Mechanical Engineering Department, University of Minnesota, Minneapolis, MN 55455 USA

7.4 Inlets for Sampling Ambient Aerosols

ANDREW R. McFARLAND

Department of Mechanical Engineering, Texas A&M University, College Station, TX, USA

7.5 History of Aerosol Reactors in Materials Manufacture

SOTIRIS E. PRATSINIS

Particle Technology Laboratory, Institute of Process Engineering, Department of Mechanical and Process Engineering, Swiss Federal Institute of Technology, ETH Zurich, CH-8092, Zurich, Switzerland

3:15 P.M. to 3:30 P.M.

Break

3:30 P.M. to 5:00 P.M.

Session 8. People

Chair: Peter Brimblecombe

8.1 The Education of an Aerosol Physicist

AUSTIN W. HOGAN

41 Barton Rd., P.O. Box 21, Piermont, NH 03779 USA

8.2 S. K. Friedlander: Aerosols' Man for All Seasons

George M. HIDY

Envair/Aerochem, Placitas, NM 87043 USA

8.3 Othmar Preining – Austrian Pioneer of Modern Aerosol Research

HELMUTH HORVATH

Institute of Experimental Physics, University of Vienna, Boltzmannngasse 5, 1090 Vienna, Austria

5:00 P.M. to 5:30 P.M.

Session 9. Closing

Chair: David Ensor

This session will be an open discussion of plans for publishing the hardbound proceedings and ideas for the 4th History Symposium. The efforts of the Organizing Committee and other volunteers will be acknowledged.