The American Association for Aerosol Research

15000 Commerce Parkway ▪ Suite C ▪ Mount Laurel, NJ 08054 ▪ Phone: 856-439-9080 ▪ Fax: 856-439-0525
Website: www.aaar.org ▪ Email: info@aaar.org

FINAL TECHNICAL REPORT

DOE AWARD #:
DE-SC0008315

PROGRAM TITLE:
AAAR 31st Annual Conference Symposium Focusing on Topics of Interest to the US DOE Atmospheric System Research Program, Oct 8-12, 2012

FROM:

American Association for Aerosol Research
15000 Commerce Parkway, Suite C
Mount Laurel, NJ 08054
Phone: 856-439-9080

FINAL PROGRAM

AMERICAN ASSOCIATION
FOR AEROSOL RESEARCH

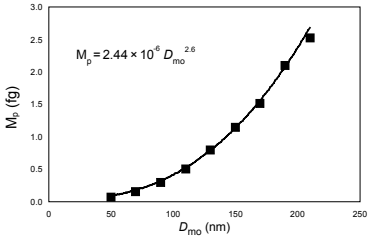
31ST ANNUAL CONFERENCE

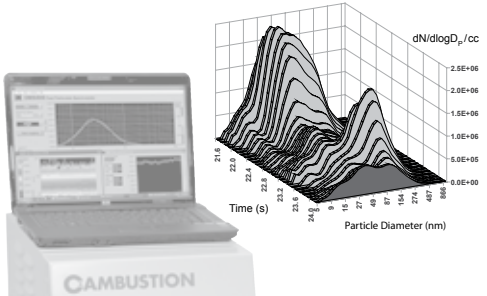
October 8-12, 2012
Hyatt Regency Minneapolis
Minneapolis, Minnesota

CAMBUSTION

Centrifugal Particle Mass Analyzer

- Classify aerosol particles by mass:charge ratio
- An aerosol particle mass standard for instrument calibration
- Determination of particle density & morphology
- Benchtop instrument with direct interface to detectors
- No loss of mass accuracy at smaller particle sizes





Fast Aerosol Mobility Size Spectrometer

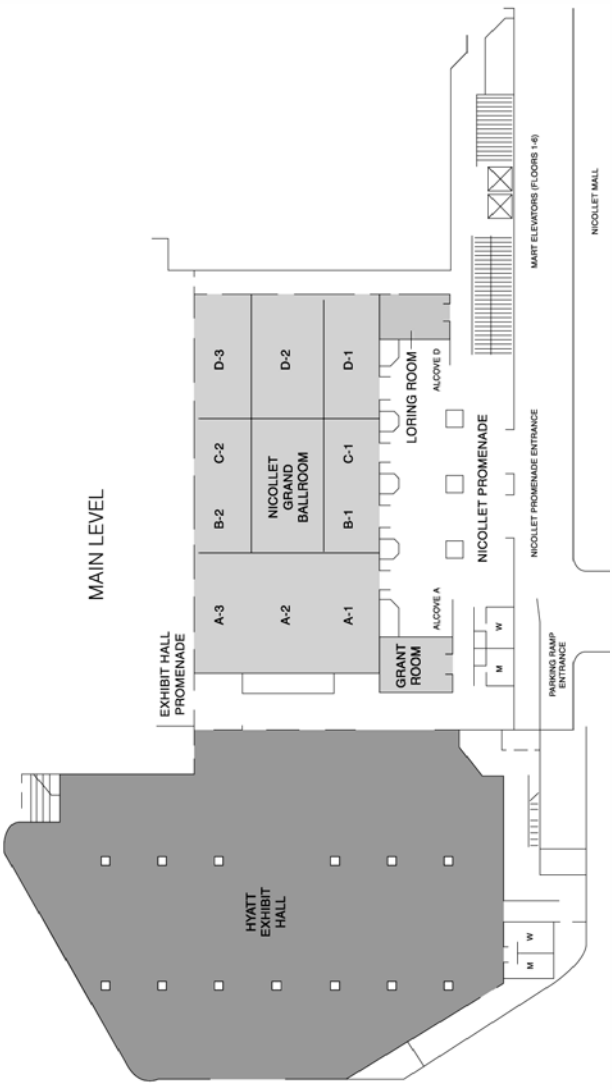
- Fastest time response (200 ms $T_{10\text{-}90\%}$ @ 10 Hz)
- Widest size range (5 nm – 1 μm or 2.5 μm)
- Widest concentration range (9 orders)
- Best sensitivity — amongst fast response particle mobility sizers

See us at AAAR - booth 409

www.cambustion.com/aerosol

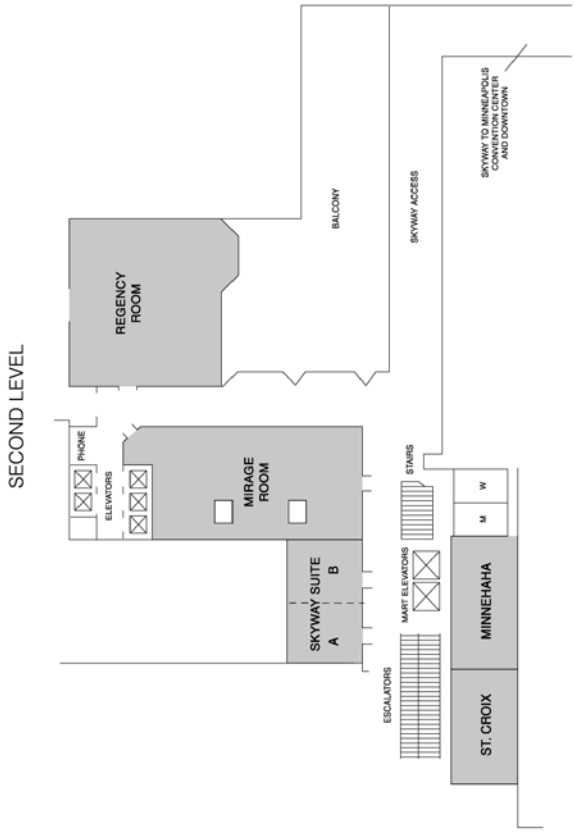
FLOOR PLAN

Main Level



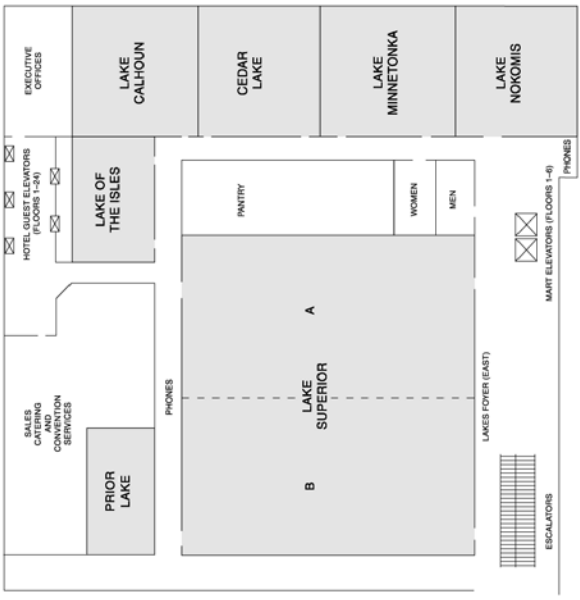
FLOOR PLAN

Second Level



FLOOR PLAN

Fifth Level/Lake Suites Conference Center



AAAR POLICY CONCERNING PHOTOGRAPHY AND RECORDING OF ANY KIND

The American Association for Aerosol Research prohibits photography, audio and video recording of any kind in all general and platform sessions and all areas of the exhibit hall.

Thank you for your compliance.

October 8-12, 2012
Hyatt Regency Minneapolis
Minneapolis, Minnesota

AAAR 31ST ANNUAL CONFERENCE

OCTOBER 8 – 12, 2012 • MINNEAPOLIS, MN

AAAR HEADQUARTERS

15000 Commerce Parkway, Suite C
Mount Laurel, NJ 08054
Phone: (856) 439-9080
Fax: (856) 439-0525
E-mail: info@aaar.org
Web site: www.aaar.org

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and Student Poster Awards

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Institute for a Sustainable Environment
ISE
at Clarkson University

AEESP

IMPORTANT CONFERENCE INFORMATION

REGISTRATION HOURS

Sunday, October 7 ..... 6:00 PM – 9:00 PM
Monday, October 8 ..... 7:00 AM – 6:00 PM
Tuesday, October 9 ..... 7:00 AM – 7:00 PM
Wednesday, October 10 ..... 7:00 AM – 6:00 PM
Thursday, October 11 ..... 7:00 AM – 6:00 PM
Friday, October 12 ..... 7:00 AM – 12:00 PM

EXHIBIT HOURS

Monday, October 8 ..... 2:00 PM – 5:00 PM
(Set-up)
Tuesday, October 9 ..... 9:00 AM – 4:00 PM
6:00 PM – 8:00 PM
(Welcome Reception)
Wednesday, October 10 ..... 9:00 AM – 5:00 PM
Thursday, October 11 ..... 9:00 AM – 3:30 PM
3:30 PM – 7:00 PM
(Move-out)

PLATFORM SESSIONS

A platform session is based on a submitted and approved abstract. Each oral presentation is limited to 15 minutes, including time for questions, and should be accompanied by PowerPoint or Adobe Acrobat visuals. No other visual equipment (overhead projectors, slide projectors, etc.) will be provided. There will be a presentation preview/speaker ready room in the Grant Room at the Hyatt Regency Minneapolis. All speakers must visit the speaker ready room the day prior to their presentation to load their PowerPoint or Adobe Acrobat files onto the conference computer system.

POSTER SESSIONS

Poster Session 2
Tuesday, October 9 ..... 1:00 PM – 3:00 PM

Poster Session 8
Thursday, October 11 ..... 12:15 PM – 1:45 PM

A poster in the poster session is based on a submitted and approved abstract. The size of a poster can not exceed 45" wide by 45" tall. Posters will be located in the Exhibit Hall. There are two poster sessions during which authors will present their posters according to the scheduled sessions and will be available for discussions. Posters are available for viewing throughout the conference at the times indicated below.

POSTER VIEWING TIMES

Tuesday, October 9
Posters Open ..... 9:00 AM – 4:00 PM
6:00 PM – 8:00 PM
Poster Session 2 ..... 1:00 PM – 3:00 PM
Welcome Reception ..... 6:00 PM – 8:00 PM

Wednesday, October 10
Posters Open ..... 9:00 AM – 5:00 pm

Thursday, October 11
Posters Open ..... 9:00 AM – 3:30 PM
Poster Session 8 ..... 12:15 PM – 1:45 PM

INSTRUCTIONS TO POSTER PRESENTERS

Posters should be placed on the assigned display boards between the hours of 2:00 PM – 5:00 PM on Monday, October 8 or between 9:00 AM – 12:00 PM on Tuesday, October 9. They should be removed at 3:30 PM and no later than 4:00 PM on Thursday, October 11. All posters not removed by 4:00 PM on Thursday will be discarded.

WELCOME RECEPTION

Tuesday, October 9 ..... 6:00 PM – 8:00 PM

This is your opportunity not only to meet and greet the exhibitors, but also to network with colleagues and friends. Exhibit representatives will be happy to discuss their products and talk with you about the latest in aerosol technology and advances in the field. The reception will be held in the Exhibit Hall.

AAAR ANNUAL BUSINESS MEETING

This year the Annual Business Meeting takes place on Wednesday, October 10 from 5:00 PM – 6:00 PM . This important session provides an overview of the highlights of AAAR today and tomorrow. There will be a special tribute to the current conference chair and conference committees, as well as others who have served AAAR during the year. During this meeting, the ceremonial passing of the gavel will mark the transfer of leadership responsibility from William W Nazaroff to incoming president Barbara Turpin.

WORKING GROUP MEETINGS

Working Group Meetings 1
Tuesday, October 9 ..... 5:00 PM – 6:00 PM

Working Group Meetings 2
Wednesday, October 10 .....6:00 PM – 7:00 PM

Working Groups play key roles in planning the technical content of future AAAR conferences. Working Group Meetings will take place on Tuesday, October 9 and Wednesday, October 10. All AAAR members are encouraged to attend Working Group Meeting(s) corresponding to their research interests. Please refer to the Schedule-at-a-Glance for topics and specific meeting times.

AMERICANS WITH DISABILITIES ACT (ADA) ACCOMMODATIONS

AAAR will use its best efforts to provide reasonable accommodations for attendees with disabilities. Please contact the registration manager at the AAAR Registration Desk if you need assistance.

CM POINTS

The CM point approval process for Category 4 education events was discontinued. Diplomates determine their own CM credit. All affected CM documents like worksheets were updated. (Dec. 2011-Feb. 2012).

For more information on the American Board of Industrial Hygiene and CM points, please visit www.abih.org.

AWARD PRESENTATIONS

Awards will be presented immediately after each plenary session. Please refer to the Schedule-at-a-Glance for the specific award presentation times. Join us in honoring the recipients of AAAR's major awards: Kenneth T. Whitby Award, David Sinclair Award, Sheldon K. Friedlander Award, and Benjamin Y.H. Lui Award. The recipient of the Thomas T. Mercer Joint Prize will also be presented. The newly appointed AAAR and IARA Fellows will be celebrated, and student poster awards will be presented.

SPEAKER READY ROOM

There will be a presentation preview/speaker ready room in the Grant Room at the Hyatt Regency Minneapolis. All speakers must visit the speaker ready room the day prior to their presentation. There will be a technician in the room to assist with presentations. **Please note: LCD projectors are the only form of visual equipment that will be provided. Use of your personal computer will not be permitted.**

SPEAKER READY ROOM HOURS

Sunday, October 7 ..... 6:00 PM – 9:00 PM

Monday, October 8 ..... 7:00 AM – 6:00 PM

Tuesday, October 9 ..... 7:00 AM – 7:00 PM

Wednesday, October 10 ..... 7:00 AM – 6:00 PM

Thursday, October 11 ..... 7:00 AM – 6:00 PM

Friday, October 12 ..... 7:00 AM – 10:00 AM

HOTEL AND CONFERENCE VENUE INFORMATION

Hyatt Regency Minneapolis
1300 Nicollet Mall
Minneapolis, MN 55403
Telephone: 612-370-1234

ON-SITE MEAL AND SNACK OPTIONS

Prairie Kitchen and Bar

Location: Lobby Level

Hours:

Breakfast.....6:30 AM – 11:00 AM , Daily

Lunch..... 11:00 AM – 2:00 PM , Daily

Dinner .....5:00 PM – 10:00 PM , Daily

Lounge .....11:00 AM – Midnight, Daily

Enjoy a sophisticated, unique addition to the vibrant Twin Cities dining scene with Prairie Kitchen and Bar, located in the Hyatt Regency Minneapolis. The new restaurant features cuisine and decor designed to reflect the natural resources and unique growing seasons of Minnesota and surrounding states. Seasonally inspired breakfast, lunch, and dinner selections are built around fresh, locally grown produce, meat, grains, and dairy products. The bar features views of Nicollet Mall and offers a comfortable atmosphere carrying the elements of nature throughout.

Market

Location: Lobby Level

Hours 6:00 AM – 8:00 PM , Daily

Located on the lobby level, Market features quick and satisfying menu options for all times of the day directed toward the guest on the go who doesn't want to sacrifice quality. This seasonal, deli-style concept offers freshly brewed Starbucks coffee, refreshing beverages, and locally inspired snacks.

CONFERENCE COMMITTEE

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Atmospheric Aerosols

Ying Li
Combustion & Material Synthesis

Samuel Janisko
Control Technology

Gediminas Mainelis
Health Related Aerosols

Gilmore Sem
History of Aerosol Science

Jeffrey Siegel
Indoor Aerosols & Aerosol Exposure

Jose-Luis Jimenez
Instrumentation

COMMITTEE MEETINGS

AWARDS **Wednesday, October 10**	**7:00 AM – 8:00 AM**	***Skyway A***
BYLAWS **Wednesday, October 10**	**12:00 PM – 1:00 PM**	***Skyway A***
CONFERENCE **Thursday, October 11**	**12:15 PM – 1:15 PM**	***Skyway A***
DEVELOPMENT **Thursday, October 11**	**6:00 PM – 7:00 PM**	***Skyway B***
EDUCATION **Wednesday, October 10**	**12:00 PM – 1:00 PM**	***Skyway B***
ENDOWMENT **Tuesday, October 9**	**7:00 AM – 8:00 AM**	***Skyway A***
FINANCE **Wednesday, October 10**	**7:00 AM – 8:00 AM**	***Skyway B***
INTERNET **Friday, October 12**	**7:00 AM – 8:00 AM**	***Skyway A***
LONG RANGE PLANNING **Friday, October 12**	**7:00 AM – 8:00 AM**	***Nicollet D3***
MEMBERSHIP **Monday, October 8**	**5:00 PM – 6:00 PM**	***Skyway A***
PUBLICATIONS **Thursday, October 11**	**7:00 AM – 8:00 AM**	***Skyway A***
YOUNG INVESTIGATORS **Thursday, October 11**	**5:00 PM – 6:00 PM**	**Skyway B**

WORKING GROUP CHAIRS

2012 STRATEGY **Tuesday, October 9**	**12:00 PM – 1:00 PM**	**Skyway A**
2013 TECHNICAL PROGRAM **Thursday, October 11**	**5:00 PM – 6:00 PM**	**Skyway A**

2011-2012 BOARD OF DIRECTORS

William W Nazaroff – *President*

Barbara Turpin – *Vice President*

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ORGANIZATIONAL MEMBERS

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Boulder, CO 80301
www.dropletmeasurement.com

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Shoreview, MN 55126
www.tsi.com

2012 STUDENT TRAVEL GRANT WINNERS

Sanaz Arabzadeh, *University of Toronto*
Olga Borovkova, *Institute of Chemical Kinetics and Combustion SB RAS*
Kate Cerully, *Georgia Institute of Technology*
Jessica Charrier, *University of California, Davis*
Joel Cohen, *Harvard School of Public Health*
Jeffrey Curtis, *University of Illinois at Urbana-Champaign*
James F. Davies, *University of Bristol*
Sarah Frey, *Arizona State University*
Peter Gallimore, *University of Cambridge*
Iman Goldasteh, *Clarkson University*
Longwen Gong, *Rice University*
Siqin He, *Washington University in St. Louis*
Ishara Hungama Mudalige, *Clarkson University*
Winnie Kam, *University of Southern California*
Olga Laskina, *The University of Iowa*
Ying-Hsuan Lin, *University of North Carolina at Chapel Hill*
Lulu Ma, *Texas Tech University*
Aurelie Marcotte, *Arizona State University*
Raul Martinez, *Washington University in St. Louis*
Delphine Méheust, *EHESP, France*
Harshad Pathak, *The Ohio State University*
Robin Stevens, *Dalhousie University*
Chadha Tandeep, *Washington University in St Louis*
Xiaochen Tang, *University of California, Riverside*
Ping Tang, *University of California, Riverside*
Farzan Tavakoli, *University of Alberta*
Jun Wang, *University of Florida*
Wenxian Zhang, *Georgia Institute of Technology*
Huajun Zhen, *Rutgers University*
Naomi Zimmerman, *University of Toronto*

2012 STUDENT ASSISTANTS

AAAR would like to acknowledge the 2012 Student Assistant Volunteers.

Kate Cerully
Tandeep Chadha
Jessica Charrier
Joseph Ching
Matthew Coggon
Jiaxi Fang
Laura Fierce
Peter Gallimore
Longwen Gong
Maryam Hajbabaei
Siqin He
James Hite
Lulu Ma
Marguerite Marks
Raul Martinez
Christina McCluskey
James Montgomery
Harshad Pathak
Lauren Potter
Ping Tang
Farzan Tavakoli
Andrea Tiwari
Jun Wang
Yiyi Wei

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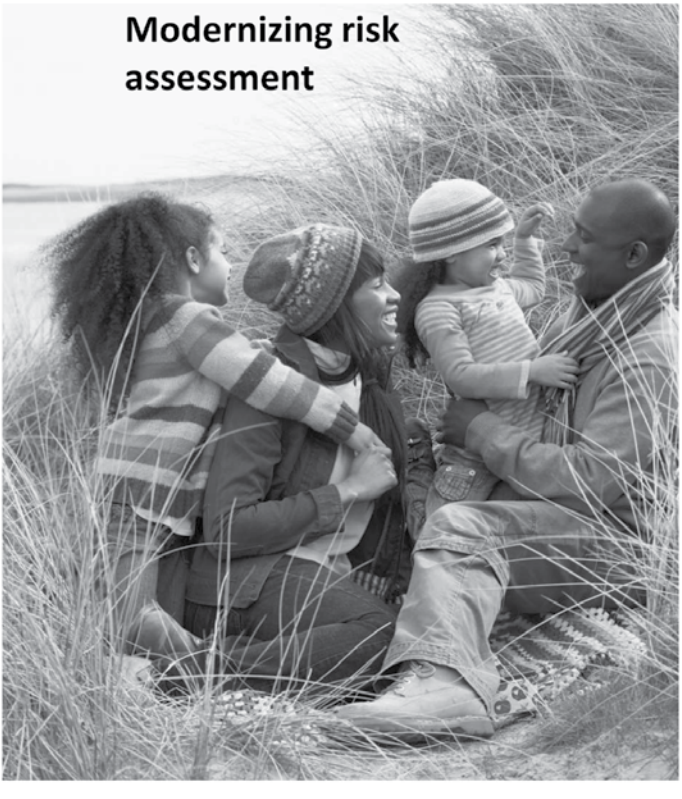

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Sunset Laboratory has been leading the way for organic/elemental carbon aerosol (OCEC) measurements since 1984. We remain the market leader in OCEC instrumentation and analysis with our Laboratory based OCEC analyzer and in ambient monitoring with our Semi-continuous OCEC aerosol analyzer.

Our instrumentation has the ability to easily perform a variety of different analysis methods, such as NIOSH Method 5040, Improve-A, STN, EUSAAR2, as well as others.

Sunset Laboratory Inc. OCEC analyzers are found throughout many universities, commercial laboratories, meteorological stations, and both state and federal government agencies, among others. Our domestic and international representatives are spread across six continents and many countries. We look forward to working with you today, as we have for over the last 28 years.

Please contact us via the web, at www.sunlab.com, or you may reach us at either of the following locations in the USA:

Main Office in Tigard, Oregon:

Tel: 503-624-1100

Fax: 503-620-3505

Office in Hillsborough, North Carolina

Tel: 919-245-3131

Fax: 919-245-1538

SCHEDULE-AT-A-GLANCE

NOTE THAT ALL CONFERENCE SESSIONS WILL BE HELD AT THE HYATT REGENCY MINNEAPOLIS.

Sunday, October 7

6:00 PM – 9:00 PM — AAAR Registration
Nicollet Promenade

6:00 PM – 9:00 PM — Speaker Ready Room
Grant Room

7:30 PM – 8:30 PM — Student Assistant Orientation
Skyway A/B

Monday, October 8

7:00 AM – 6:00 PM — AAAR Registration
Nicollet Promenade

7:00 AM – 6:00 PM — Speaker Ready Room
Grant Room

8:00 AM – 9:40 AM — First Tutorial Session

1. Introduction to Aerosol Mechanics I
   Richard C. Flagan
   Regency
2. Molecular Biology-Based Bioaerosol Analyses
   Jordan Peccia
   Nicollet D3
3. Mass Spectrometry 1: Instrumentation for Aerosol Scientists
   Jose-Luis Jimenez
   Nicollet D2
4. Organic Gas/Particle Partitioning
   James Pankow
   Nicollet D1

10:00 AM – 11:40 AM — Second Tutorial Session

5. Introduction to Aerosol Mechanics 2
   Richard C. Flagan
   Regency
6. Aerosol Technology for Inhalation Toxicology and Chamber Studies
   Patrick T. O'Shaughnessy
   Nicollet D3

7. Mass Spectrometry 2: Fundamentals for Aerosol Scientists
Murray Johnston
Nicollet D2

8. Secondary Aerosol Formation
Paul J. Ziemann
Nicollet D1

11:30 AM – 1:00 PM Lunch (on your own)

1:00 PM – 2:40 PM Third Tutorial Session

9. Nucleation Theory
Steven L. Girshick
Regency

10. Environmental Chambers: Approaches and Challenges
David Cocker
Nicollet D3

11. Spectroscopy of Aerosols
Ruth Signorell
Nicollet D2

12. Thermodynamics of Aerosols and Droplets Using the Extended Aerosol Inorganics Model (E-AIM)
Simon L. Clegg
Anthony S. Wexler
Nicollet D1

1:00 PM – 4:00 PM AS&T Editors Meeting
Skyway A

2:00 PM – 4:30 PM AAAR Executive Committee Meeting
Board Room (second floor)

2:00 PM – 5:00 PM Exhibitor and Poster Set-Up
Exhibit Hall

3:00 PM – 4:40 PM Fourth Tutorial Session

13. Combustion Synthesis of Materials: From Basic Commodities to Functional Devices
Sotiris E. Pratsinis
Regency

14. Advanced Air Filtration
Peter C. Raynor
Nicollet D3

15. The Conceptual Framework and Application of Receptor Models
Philip K. Hopke
Nicollet D2

16. Heterogeneous and Aqueous Chemistry of Aerosols
V. Faye McNeill
Nicollet D1

5:00 PM – 6:00 PM — Membership Committee Meeting
Skyway A

6:00 PM – 7:30 PM — Journal Article and Proposal Writing Workshop for Young Investigators
Mirage

Tuesday, October 9

7:00 AM – 7:00 PM — AAAR Registration
Nicollet Promenade

7:00 AM – 7:00 PM — Speaker Ready Room
Grant Room

7:00 AM – 8:00 AM — Endowment Committee Meeting
Skyway A

8:00 AM – 9:15 AM — Plenary Session #1: Friedlander Lecture: Nucleation of Clusters Bridging the Scale from Molecules to Nanoparticles
Paul Wagner
Nicollet A/B/C

Presentation of the Sheldon K. Friedlander Award and the New AAAR and IARA Fellows

9:00 AM – 4:00 PM — Exhibits/Posters Open
Exhibit Hall

9:15 AM – 9:45 AM — Coffee Break
Exhibit Hall

9:45 AM – 11:30 AM — Technical Session 1: Platform
1AC. Aerosol Chemistry I
Nicollet A

1AE. Aerosol Exposure I
Lake Superior

1CC. Aerosols, Clouds, and Climate I
Nicollet B/C

	1CO. Combustion I *Mirage* 1IM. Instrumentation and Methods I *Regency* 1UA. Urban Aerosols I *Nicollet D*
11:30 AM – 1:00 PM	Lunch (on your own)
11:30 AM – 1:00 PM	AAAR Board of Directors Luncheon *Nicollet D3*
12:00 PM – 1:00 PM	Working Group Chairs 2012 Strategy Meeting *Skyway A*
1:00 PM – 3:00 PM	Technical Session 2: Poster *Exhibit Hall* 2AC. Aerosol Chemistry II 2AE. Aerosol Exposure II 2AN. Symposium: Aerosol Nucleation: From Clusters to Nanoparticles I 2CC. Aerosols, Clouds and Climate II 2CH. Control Technology and Homeland Security I 2CO. Combustion II 2FM. Symposium: Synthesis of Functional Materials Using Flames, Plasmas and Other Aerosol Methods I 2IA. Indoor Aerosols I 2IM. Instrumentation and Methods II 2MB. Symposium: Indoor Microbiome I 2UA. Urban Aerosols II
3:00 PM – 3:30 PM	Coffee Break *Exhibit Hall*
3:30 PM – 5:00 PM	Technical Session 3: Platform 3AC. Aerosol Chemistry III *Nicollet A* 3AE. Aerosol Exposure III *Lake Superior* 3AN. Symposium: Aerosol Nucleation: From Clusters to Nanoparticles II *Regency* 3CC. Aerosols, Clouds, and Climate III *Nicollet B/C*

3CO. Combustion III
Mirage

3UA. Urban Aerosols III
Nicollet D

5:00 PM – 6:00 PM Working Group Meetings 1
Aerosol Chemistry
Nicollet A

Combustion and Materials Synthesis
Regency

History of Aerosol Science
Nicollet D

Indoor Aerosols and Aerosol Exposure
Nicollet B/C

Instrumentation
Mirage

6:00 PM – 8:00 PM Welcome Reception
Exhibit Hall

Wednesday, October 10

7:00 AM – 6:00 PM AAAR Registration
Nicollet Promenade

7:00 AM – 6:00 PM Speaker Ready Room
Grant Room

7:00 AM – 8:00 AM Awards Committee Meeting
Skyway A

7:00 AM – 8:00 AM Finance Committee Meeting
Skyway B

8:00 AM – 9:15 AM Plenary Session #2: AEESP Lecture:
Embracing Complexity: Deciphering Origins and Transformations of Atmospheric Organics through Speciated Measurements
Allen Goldstein
Nicollet A/B/C

Kenneth T. Whitby Award and Benjamin Y.H. Lui Award Presentations

9:00 AM – 5:00 PM Exhibits/Posters Open
Exhibit Hall

9:15 AM – 9:45 AM Coffee Break
Exhibit Hall

9:45 AM – 11:30 AM	Technical Session 4: Platform 4AC. Aerosol Chemistry IV *Nicollet A* 4AN. Symposium: Aerosol Nucleation: From Clusters to Nanoparticles III *Nicollet B/C* 4CH. Control Technology and Homeland Security II *Mirage* 4IA. Indoor Aerosols II *Lake Superior* 4IM. Instrumentation and Methods III *Regency* 4UA. Urban Aerosols IV *Nicollet D*
11:30 AM – 1:00 PM	Lunch (on your own)
11:30 AM – 1:00 PM	AS&T Editorial Advisory Board Luncheon *Nicollet D3*
12:00 PM – 1:00 PM	Bylaws Committee Meeting *Skyway A*
12:00 PM – 1:00 PM	Education Committee Meeting *Skyway B*
1:00 PM – 3:00 PM	Technical Session 5: Platform 5AN. Symposium: Aerosol Nucleation: From Clusters To Nanoparticles IV *Nicollet B/C* 5CA. Carbonaceous Aerosols in the Atmosphere I *Nicollet A* 5FM. Symposium: Synthesis of Functional Materials Using Flames, Plasma and Other Aerosol Methods II *Mirage* 5IM. Instrumentation and Methods IV *Regency* 5MB. Symposium: Indoor Microbiome II *Lake Superior* 5UA. Urban Aerosols V *Nicollet D*
3:00 PM – 3:30 PM	Coffee Break *Exhibit Hall*

3:30 PM – 5:00 PM	Technical Session 6: Platform 6AC. Aerosol Chemistry V *Nicollet A* 6AP. Aerosol Physics I *Mirage* 6CC. Aerosols, Clouds, and Climate IV *Nicollet B/C* 6IA. Indoor Aerosols III *Lake Superior* 6IM. Instrumentation and Methods V *Regency* 6SA. Source Apportionment I *Nicollet D*
5:00 PM – 6:00 PM	AAAR Annual Business Meeting *Nicollet A*
6:00 PM – 7:00 PM	Working Group Meetings 2 Aerosol Physics *Nicollet B/C* Atmospheric Aerosols *Regency* Control Technology *Mirage* Health Related Aerosols *Nicollet D*

Thursday, October 11

7:00 AM – 6:00 PM	AAAR Registration *Nicollet Promenade*
7:00 AM – 6:00 PM	Speaker Ready Room *Grant Room*
7:00 AM – 8:00 AM	Publications Committee Meeting *Skyway A*
8:00 AM – 9:15 AM	Plenary #3: A Tangled Web: Occupants, Squames, Ozone, SOA and SVOCs in Indoor Environments ***Charles Weschler*** *Nicollet A/B/C* David Sinclair Award Presentation and Thomas T. Mercer Joint Prize Presentation

9:00 AM – 3:30 PM	Exhibits/Posters Open *Exhibit Hall*
9:15 AM – 9:45 AM	Coffee Break *Exhibit Hall*
9:45 AM – 11:30 AM	Technical Session 7: Platform 7AC. Aerosol Chemistry VI *Nicollet A* 7AP. Aerosol Physics II *Mirage* 7CC. Aerosols, Clouds, and Climate V *Nicollet B/C* 7HA. Health Related Aerosols I: Biological Aerosols *Lake Superior* 7IM. Instrumentation and Methods VI *Regency* 7SA. Source Apportionment II *Nicollet D*
11:30 AM – 12:15 PM	Light Take-Away Lunch *Exhibit Hall*
12:15 PM – 1:15 PM	Conference Committee Meeting *Skyway A*
12:15 PM – 1:45 PM	Technical Session 8: Poster *Exhibit Hall* 8AP. Aerosol Physics III 8CA. Carbonaceous Aerosols in the Atmosphere II 8HA. Health Related Aerosols II 8IM. Instrumentation and Methods VII 8NM. Nanoparticles and Materials Synthesis I 8RA. Remote and Regional Atmospheric Aerosols I 8SA. Source Apportionment III
1:45 PM – 3:00 PM	Technical Session 9: Platform 9AC. Aerosol Chemistry VII *Nicollet A* 9AP. Aerosol Physics IV *Mirage* 9CA. Carbonaceous Aerosols in the Atmosphere III *Nicollet B/C*

	9HA. Health Related Aerosols III: Health Effects *Lake Superior*
	9IM. Instrumentation and Methods VIII *Regency*
	9SA. Source Apportionment IV *Nicollet D*
3:00 PM – 3:30 PM	Coffee Break *Exhibit Hall*
3:30 PM	Exhibit Hall Closes
3:30 PM – 5:00 PM	Technical Session 10: Platform 10AC. Aerosol Chemistry VIII *Nicollet A*
	10AP. Aerosol Physics V *Mirage*
	10CA. Carbonaceous Aerosols in the Atmosphere IV *Nicollet B/C*
	10HA. Health Related Aerosols IV: Lung Deposition *Lake Superior*
	10IM. Instrumentation and Methods IX *Regency*
	10RA. Remote and Regional Atmospheric Aerosols II *Nicollet D*
5:00 PM – 6:00 PM	Working Group Chairs 2013 Technical Program Meeting *Skyway A*
5:00 PM – 6:00 PM	Young Investigators Committee Meeting *Skyway B*
6:00 PM – 7:00 PM	Development Committee Meeting *Skyway B*

Friday, October 12

7:00 AM – 12:00 PM	AAAR Registration *Nicollet Promenade*
7:00 AM – 10:00 AM	Speaker Ready Room *Grant Room*
7:00 AM – 8:00 AM	Internet Communications Committee Meeting *Skyway A*
7:00 AM – 8:00 AM	Long Range Planning Committee Meeting *Nicollet D3*
8:00 AM – 9:15 AM	Plenary #4: Multiphase Oxidation Chemistry: Impacts on Both the Gas Phase and Aerosol ***Jonathan Abbatt*** *Nicollet A/B/C*
	Presentation of Student Poster Competition Awards
9:15 AM – 9:45 AM	Coffee Break *Nicollet Promenade*
9:45 AM – 11:00 AM	Technical Session 11: Platform 11AC. Aerosol Chemistry IX *Nicollet A*
	11CA. Carbonaceous Aerosols in the Atmosphere V *Nicollet B/C*
	11HA. Health Related Aerosols V: Nanoaerosols and Health *Lake Superior*
	11IM. Instrumentation and Methods X *Regency*
	11NM. Nanoparticles and Materials Synthesis II *Mirage*
	11RA. Remote and Regional Atmospheric Aerosols III *Nicollet D*
11:00 AM – 11:15 AM	Break (no beverages)
11:15 AM – 12:30 PM	Technical Session 12: Platform 12AC. Aerosol Chemistry X *Nicollet A*

12CA. Carbonaceous Aerosols in the Atmosphere VI
Nicollet B/C

12HA. Health Related Aerosols VI: Health Effects
Lake Superior

12IM. Instrumentation and Methods XI
Regency

12NM. Nanoparticles and Materials Synthesis III
Mirage

12RA. Remote and Regional Atmospheric Aerosols IV
Nicollet D

12:30 PM — Conference Ends

12:30 PM – 4:00 PM — AAAR Board of Directors Meeting
Nicollet D3

TUTORIALS

Monday, October 8

First Session: 8:00 AM – 9:40 AM

1. INTRODUCTION TO AEROSOL MECHANICS 1

Richard C. Flagan, Department of Chemical Engineering, California Institute of Technology, Pasadena, CA

Abstract: These two courses (Tutorials 1 and 5) form a sequence that covers basic aerosol mechanics (particle motion) at an introductory level. Topics in Part 1 include the aerodynamics of single particles, Stokes law, settling velocity, slip correction, aerodynamic diameter, non-spherical particles, acceleration, relaxation time, stopping distance, impaction, electrical mobility, and aerosol sampling. Part 2 will discuss the collective behavior of aerosols, e.g., Brownian motion, diffusion, deposition, filtration, condensation, and coagulation, and their effects on particle size distributions. The course covers theory and applications and is suitable for those new to the field and for others who want to brush up on the basics.

Richard C. Flagan is the McCollum/Corcoran Professor and Executive Officer for Chemical Engineering at the California Institute of Technology where he teaches chemical engineering and environmental science. He has served as president of AAAR and editor-in-chief of Aerosol Science and Technology. His research spans the field of aerosol science, including atmospheric aerosols, aerosol instrumentation, aerosol synthesis of nanoparticles and other materials, and bioaerosols. His many contributions to the field of aerosol science have been acknowledged with the AAAR Sinclair Award and the Fuchs Award.

2. MOLECULAR BIOLOGY-BASED BIOAEROSOL ANALYSES

Jordan Peccia, Department of Chemical and Environmental Engineering, Yale University, New Haven, CT

Abstract: This tutorial covers molecular biology concepts and tools that are relevant for the analysis of airborne biological material. The course begins with a targeted introduction to genetics, phylogenetics, and bioinformatics for aerosol scientists that have a limited background in biology. Next, molecular biology-based methods that are useful for the quantification, identification, and population characterization of bacteria, fungi, and viruses in aerosols will be presented along with examples. These

methods include polymerase chain reaction (PCR), quantitative PCR, immunoassays and proteomics, and next generation DNA sequencing to produce phylogenetic libraries. The course will conclude with an overview of sampling strategies that can be integrated with molecular biology-based analysis, and information on the quantitativeness of the above methods.

Jordan Peccia is an associate professor of chemical and environmental engineering and the environmental engineering director of undergraduate studies at Yale University. His research group integrates molecular biotechnology with process engineering to address environmental problems. Dr. Peccia has over 15 years of experience in applying molecular biology to assess the sources, the diversity of, and the exposure to airborne bacteria, fungi and viruses in the atmosphere and in indoor environments. He earned his PhD in environmental engineering from the University of Colorado in 2001.

3. MASS SPECTROMETRY 1: INSTRUMENTATION FOR AEROSOL SCIENTISTS

Jose-Luis Jimenez, Department of Chemistry and Biochemistry, and Cooperative Institute for Research on the Environmental Sciences (CIRES), University of Colorado-Boulder, Boulder, CO

Abstract: The past 15 years have seen the emergence of several methods capable of determining the size and chemical composition of aerosol particles in real-time using mass spectrometry. Advances in inlet design, detection, and spectrometric techniques have led to high-resolution sizing information, single particle analysis, and quantitative analysis of aerosol components. Several instruments have been commercialized and about 100 research groups throughout the world currently use some form of online aerosol MS instrumentation. This tutorial covers the instrumentation components used in online aerosol mass spectrometers, including inlets, sizing methods, and mass spectrometers. The configuration and properties of the most commonly used instruments, such as the Aerodyne AMS and ACSM, laser-ablation instruments, and emerging instruments capable of organic molecular speciation will be discussed. A companion tutorial by Prof. Johnston covers mass spectrometric data interpretation.

Prof. Jimenez received a double MS in mechanical engineering from the Universities of Zaragoza (Spain) and Compiegne (France) in 1993; and a PhD from MIT in 1998. In 1999-2002 he was a research scientist at Aerodyne Research / MIT and Caltech. Since 2002 he has

been a professor of chemistry and fellow of CIRES at CU-Boulder, and in Spring 2009 he was a visiting professor at CSIC-IDAEA in Spain. He is an author of over 175 peer-reviewed papers, including 60+ ISI Highly Cited Papers. He serves as an associate editor of AMT and on the editorial boards of AS&T and Atmospheric Environment. He has received the NSF CAREER Award in 2004, the AAAR Whitby Award in 2008 and the Rosenstiel Award in 2010. His current research interests center on aerosol mass spectrometry instrument development and field, laboratory, and modeling studies.

4. ORGANIC GAS/PARTICLE PARTITIONING

James Pankow, Department of Chemistry and Department of Civil and Environmental Engineering, Portland State University, Portland, OR

Abstract: Gas/particle (G/P) partitioning is the process by which compounds distribute themselves between the gas phase and aerosol particles. In the case of organic compounds, the result is the formation/evaporation of organic particulate matter (OPM). For each compound involved in the partitioning, there will be a partitioning constant Kp that governs thermodynamics of the partitioning, with each Kp value dependent on the vapor pressure of the compound (which is strongly temperature dependent) and the composition of the particle phase into which the partitioning is occurring. This tutorial will explore the fundamental chemistry governing the G/P partitioning process. It will discuss the popular Donahue "volatility-basis-set" (VBS) binned approach to setting values of Kp (=1/C*) for use in modeling, as a means to lump the case-dependent broad mixes of compounds involved in organic PM formation. It will also discuss the Pankow and Barsanti "carbon-number-polarity grid" approach for lumping. The importance of considering the chemical composition (including polarity) of the partitioning species will be emphasized given that this chemistry determines the response of the system to changes in temperature, relative humidity, the general total levels of partitioning species Ti, and time. The possibility of phase separation into less polar and more polar phases will be discussed, as well as non-equilibrium aspects of the problem.

James Pankow's academic training combined basic chemistry (BA, SUNY, 1973) with engineering (PhD, Caltech, 1979). His research has involved the application of chemical principles to understanding how chemicals partition between important phases in the environment. A primary focus of Dr. Pankow's work has involved the study of the "gas/particle (G/P) partitioning" process, i.e., how compounds distribute themselves between the gas phase and the

associated particles of aerosol systems. This type of partitioning is of enormous fundamental importance in all contemporary model predictions of the amounts of polluting particulate matter (PM) that form in urban and regional air, and in the global atmosphere. His work on this theory, which is used in climate change research, resulted in his receipt of the 1999 American Chemical Society Award for Creative Advances in Environmental Science & Technology, and of the 2005 Haagen-Smit Prize. Gas/particle partitioning also affects the behavior and fate of individual toxic pollutants in the atmosphere, and theory developed by Pankow (1987) provides the foundation of the Junge-Pankow model used to predict how toxic compounds such as PCBs, pesticides, and dioxins behave in contaminated air, including how such compounds are transported to sensitive remote polar ecosystems.

Second Session: 10:00 AM – 11:40 AM

5. INTRODUCTION TO AEROSOL MECHANICS 2

Richard C. Flagan, Department of Chemical Engineering, California Institute of Technology, Pasadena, CA

Abstract: These two courses (Tutorials 1 and 5) form a sequence that covers basic aerosol mechanics (particle motion) at an introductory level. Topics in Part 1 include the aerodynamics of single particles, Stokes law, settling velocity, slip correction, aerodynamic diameter, non-spherical particles, acceleration, relaxation time, stopping distance, impaction, electrical mobility, and aerosol sampling. Part 2 will discuss the collective behavior of aerosols, e.g., Brownian motion, diffusion, deposition, filtration, condensation, and coagulation, and their effects on particle size distributions. The course covers theory and applications and is suitable for those new to the field and for others who want to brush up on the basics.

Richard C. Flagan is the McCollum/Corcoran Professor and Executive Officer for Chemical Engineering at the California Institute of Technology where he teaches chemical engineering and environmental science. He has served as president of AAAR and editor-in-chief of Aerosol Science and Technology. His research spans the field of aerosol science, including atmospheric aerosols, aerosol instrumentation, aerosol synthesis of nanoparticles and other materials, and bioaerosols. His many contributions to the field of aerosol science have been acknowledged with the AAAR Sinclair Award and the Fuchs Award.

6. AEROSOL TECHNOLOGY FOR INHALATION TOXICOLOGY AND CHAMBER STUDIES

Patrick T. O'Shaughnessy, Department of Occupational & Environmental Health, The University of Iowa, Iowa City, IA

Abstract: From an aerosols standpoint, the goal of inhalation toxicology studies and other studies involving environmental chambers is to create a stable aerosol over time in terms of both a desired concentration level and size distribution. This tutorial will provide a detailed overview of aerosol generation and sampling methods, as well as chamber design, for inhalation toxicology and other chamber studies involving the production and measurement of an aerosol. Both the favorable and unfavorable attributes of a variety of aerosol generation techniques for inorganic, organic, and fibrous particles will be described. A special emphasis will be placed on recent devices designed specifically to produce nanoparticle aerosols. Different chamber designs will be discussed in terms of their capabilities to provide spatially homogenous aerosol concentrations. Entire chamber systems for producing and measuring an aerosol will also be described to emphasize airflow considerations and the application of feedback control to stabilize aerosol concentrations.

Patrick O'Shaughnessy is professor and associate head for the Department of Occupational & Environmental Health at the University of Iowa where he also holds a joint appointment with civil & environmental engineering. He has taught a range of courses including air pollution control technology, environmental health, and statistics for experimenters. He has been a member of the AAAR since 1999 where he has served as chair of the health related aerosols committee. His research has involved over twenty years of experience collaborating on inhalation toxicology studies involving asbestos, silica, organic aerosols and nanoparticles, as well as supervising studies involving exposure assessments of aerosols in occupational settings and ambient environments.

7. MASS SPECTROMETRY 2: FUNDAMENTALS FOR AEROSOL SCIENTISTS

Murray Johnston, Department of Chemistry, University of Delaware, Newark, DE

Abstract: Mass spectrometers are widely used for aerosol chemical characterization. This tutorial will cover fundamental topics in mass spectrometry that are relevant to aerosol scientists no matter what type of experiment they perform. We will explore how the

method of ionization determines the types of ions that are formed and how the distribution of ions from an aerosol sample provides chemical composition information. Ionization methods to be discussed include electron ionization (EI), chemical ionization (CI), electrospray ionization (ESI), laser desorption ionization (LDI) and related methods. Spectral interpretation topics to be discussed include the use of isotope ratios, accurate mass measurements, basic fragmentation mechanisms and advanced data analysis/ visualization methods.

Murray Johnston is a professor in the chemistry department at the University of Delaware. His group uses mass spectrometry to study microchemical reactions within particles, heterogeneous reactions between gas-phase and particulate-phase species, formation of secondary organic aerosol and field measurements. His current work emphasizes characterization of particles and molecular clusters in the 1-30 nm size range.

8. SECONDARY AEROSOL FORMATION

Paul J. Ziemann, Air Pollution Research Center and Department of Environmental Sciences, University of California, Riverside, CA

Abstract: Secondary aerosol is an important component of atmospheric fine particles that generally consists of organics, sulfates, and nitrates. The processes that lead to the formation of this material are often complex and can involve gas and particle phase chemistry, nucleation, and gas-particle partitioning. This course will discuss the major chemical reactions and partitioning processes involved in the formation of secondary organic and inorganic aerosol (with a strong emphasis on organic aerosol) using examples from laboratory and field studies.

Paul Ziemann is a professor of atmospheric chemistry at the University of California, Riverside. He received a doctorate in chemistry from Penn State University and was a postdoctoral researcher in the Particle Technology Laboratory at the University of Minnesota.

Third Session: 1:00 PM – 2:40 PM

9. NUCLEATION THEORY

Steven L. Girshick, Department of Mechanical Engineering, University of Minnesota, Minneapolis, MN

Abstract: This tutorial will introduce the theory of nucleation of aerosol particles from the gas phase. Discussion will focus on the following: basic concepts in homogeneous nucleation of a supersaturated vapor; classical nucleation theory; atomistic approaches; transient nucleation; and nucleation in chemically reacting systems and plasmas.

Steven L. Girshick is professor of mechanical engineering and a member of the graduate faculty in chemical engineering and materials science at the University of Minnesota. He received an SB in humanities and science at M.I.T. and a PhD in mechanical engineering (1985) at Stanford. Since 1985 he has been at the University of Minnesota, where he is director of the High Temperature and Plasma Laboratory. Prof. Girshick is editor-in-chief of Plasma Chemistry and Plasma Processing and serves on the editorial board of the Journal of Nanoengineering and Nanosystems. He was the recipient of the 2005 Plasma Chemistry Award, the highest award of the International Plasma Chemistry Society. In addition to Prof. Girshick's work on synthesis and processing of aerosol nanoparticles he has published a number of papers on nucleation theory.

10. ENVIRONMENTAL CHAMBERS: APPROACHES AND CHALLENGES

David Cocker, Department of Chemical and Environmental Engineering, University of California, Riverside, CA

Abstract: Environmental chambers are widely used to study atmospheric chemistry and secondary organic aerosol formation. While very useful for these studies, the presence of chamber surfaces presents a unique set of experimental challenges. This tutorial will explore the historical development of chambers (static and flow), the role of surfaces in influencing the chemistry within the chamber, and how these effects are characterized and accounted for within such experiments. Chamber quality control experiments including assessment of low-NOx experimental conditions, wall loss, particle background, particle-gas-wall interactions, HONO release, and implications for kinetic and aerosol modeling will be discussed.

David Cocker is a professor of chemical and environmental engineering at UC Riverside. He received his PhD in environmental engineering science from Caltech and a BS in environmental engineering and chemistry from UC Riverside. He is the current manager of the atmospheric processes laboratory group at the Bourns College of Engineering, Center for Environmental Research and Technology (CE-CERT). Research interests include experimental investigations of secondary organic aerosol formation using environmental chambers. Additional research interests focus on characterizing in-use particulate and gaseous emissions from mobile and stationary sources.

11. SPECTROSCOPY OF AEROSOLS

Ruth Signorell, Department of Chemistry, University of British Columbia, Vancouver, BC, Canada

Abstract: Spectroscopic methods play a central role for the characterization of aerosols. A large number of spectroscopic instruments are available to measure aerosols wherever they occur. This course is intended to provide an introduction into aerosol spectroscopy and an overview of the state-of-the-art of this rapidly developing field. It will include fundamental aspects of aerosol spectroscopy as well as applications to atmospherically and astronomically relevant problems. The goal is to provide an overview of the latest experimental and theoretical studies in aerosol spectroscopy. The course will cover the whole range of spectroscopic methods from infrared and Raman to UV/VIS and X-ray. The focus will be on fundamental aspects of light particle interaction as a function of the wavelength and on aerosol properties that can be probed with light of a certain wavelength. Fundamental problems associated with the analysis of aerosol spectra as well as other aspects that need further research and development will be discussed.

Ruth Signorell is a professor in the Department of Chemistry at the University of British Columbia. She received her undergraduate and post-graduate degrees in physics and chemistry from the ETH Zürich in Switzerland. Her research interests focus on spectroscopic and mass spectrometric studies of aerosols. She is co-editor of a book on "Fundamentals and Applications in Aerosol Spectroscopy". Among the awards she has received are the 2005 Werner Award of the Swiss Chemical Society, an A. P. Sloan Fellowship in 2007 (USA), and an E. W. R. Steacie Memorial Fellowship in 2011 (Canada).

12. THERMODYNAMICS OF AEROSOLS AND DROPLETS USING THE EXTENDED AEROSOL INORGANICS MODEL (E-AIM)

Simon L. Clegg, School of Environmental Sciences, University of East Anglia, Norwich, U.K.

Anthony S. Wexler, Air Quality Research Center, University of California, Davis, CA

Abstract: This course covers the atmospheric thermodynamics of mixtures of acids, salts and organic compounds and how to calculate their properties and equilibrium partitioning using the Extended Aerosol Inorganics Model (E-AIM). The fundamentals covered will include: liquid-solid, liquid-gas, and liquid-liquid equilibrium; Henry's law and vapour pressures; concentration scales, activity coefficients, and reference states; stable and metastable equilibrium; how to model systems containing organic compounds (including the use of UNIFAC).

E-AIM treats four different inorganic systems to which organic compounds (acids, AM ines, and non-dissociating compounds) can be added. Organics may be chosen from a small library, or users can create them and define their thermodynamic properties. These include equilibrium constants for dissociation (acids and amines), the formation of solids, partitioning into the gas phase and (for amines) the formation of nitrate, sulphate and chloride salts. E-AIM simulates both an aqueous and, if organic compounds are present, a hydrophobic non-aqueous phase. The E-AIM website has facilities for saving the properties of organic compounds for future calculations, in ways suitable for both research and teaching applications. It has calculators for surface tension, density and vapour pressures of organic compounds. The tutorial will teach the use of the model for practical calculations of solution properties, water uptake, and gas/liquid/solid partitioning, closely linked to the underlying thermodynamic principles.

Simon Clegg is a professor in the School of Environmental Sciences at the University of East Anglia at Norwich (in the U.K.), and a member of the Air Quality Research Center at the University of California at Davis. He received his PhD at UEA, and for ten years was an advanced research fellow of the Natural Environment Research Council. His primary research interests are solution thermodynamics and activity coefficient modeling applied to natural systems.

Anthony Wexler is a professor of mechanical and aerospace engineering, civil and environmental engineering and land, air and

water resources; and director of the Air Quality Research Center and Crocker Nuclear Laboratory at the University of California, Davis. His research focuses on particles in the atmosphere and their relation to human health and climate change.

Fourth Session: 3:00 PM – 4:40 PM

13. COMBUSTION SYNTHESIS OF MATERIALS: FROM BASIC COMMODITIES TO FUNCTIONAL DEVICES

Sotiris E. Pratsinis, Process Engineering and Materials Science, Swiss Federal Institute of Technology, Zurich

Abstract: The tutorial will begin with the fascinating history of aerosol technology from production of inks in ancient China and Greece to the Bible printing by Gutemberg and to the manufacture of optical fibers, carbon blacks, pigments, fumed silica and filamentary nickel today. The seven advantages of aerosol technology over solution or wet-chemistry are emphasized. Flame aerosol reactors are discussed for their proven scalability as they dominate both by value and volume of aerosol-made materials today. Opportunities for aerosol synthesis of sophisticated functional films and particles, in particular for catalysts and sensors, are presented by combustion of sprayed solutions. Basic design principles for synthesis of nanoparticles with controlled primary particle size are presented by going over specific experiments as well as simulations combining fluid and particle dynamics. The focus is on the residence time distribution, degree of particle aggregation and agglomeration and on synthesis of layered nanoparticles that "cure" some of their deleterious effects.

Sotiris E. Pratsinis has been professor of process engineering and materials science at the Swiss Federal Institute of Technology (ETH Zurich) since 1998. There he founded the Particle Technology Laboratory focusing on aerosol synthesis of sophisticated materials and devices, in close collaboration with industry. He teaches mass transfer, introduction to nanoscale engineering, combustion synthesis of materials and micro- & nano-particle technology. He has received his Diploma in chemical engineering from the Aristotle University in Thessaloniki, Greece (1977) and his PhD from the University of California, Los Angeles (1985).

14. ADVANCED AIR FILTRATION

Peter C. Raynor, Division of Environmental Health Sciences, University of Minnesota, Minneapolis, MN

Abstract: Focusing primarily on fibrous filters made from non-woven media, this tutorial will explore issues beyond the basic mechanisms by which filters capture airborne particles. We will talk about how electret filters, made from fibers that carry electrostatic charges, collect particles and why they are such an important part of the filter market. In addition, we will discuss the long-term performance of both electret and non-electret filters as they are loaded with particles, and the effects that changes in performance can have on filter users. Designs to maximize long-term performance will be considered. Participants completing the tutorial will understand many of the factors that influence filter design and long-term performance and have an appreciation for some of the factors that we still need to know more about.

Peter C. Raynor, an associate professor in the Division of Environmental Health Sciences at the University of Minnesota School of Public Health, holds a BS in chemical engineering from Cornell University and MS and PhD degrees in environmental sciences & engineering from the University of North Carolina at Chapel Hill. His research and teaching interests revolve around the assessment and control of environmental exposures, especially those occurring in workplace environments. Dr. Raynor's publications include papers on filtration theory, mist droplet filtration, long-term performance of electret and non-electret HVAC filters, and use of HVAC filters as long-term samplers for viruses and bacteria in public buildings.

15. THE CONCEPTUAL FRAMEWORK AND APPLICATION OF RECEPTOR MODELS

Philip K. Hopke, Center for Air Resources Engineering and Science, Clarkson University, Potsdam, NY

Abstract: This tutorial will present the underlying chemical basis for distinct profiles for the different types of emission sources and how these differences in profiles then permit the application of receptor models. The conceptual framework of receptor models, a mass balance approach, will be described. The resulting mathematical approaches can be then implemented depending on what a priori information is available. The use of ancillary data such as meteorology and back trajectories will be introduced. Applications of several types of models to various particle composition problems

will be described with an emphasis on the practical use of Positive Matrix Factorization for both elemental and organic species data.

Dr. Philip K. Hopke is the Bayard D. Clarkson Distinguished Professor and Director of the Institute for a Sustainable Environment at Clarkson University. Professor Hopke received his BS in chemistry from Trinity College (Hartford) and his MA and PhD degrees in chemistry from Princeton University. He is a past chair of EPA's Clean Air Scientific Advisory Committee (CASAC), a past president of AAAR, and is currently a member of the NRC's Board of Environmental Studies and Toxicology. He is a fellow of the International Aerosol Research Assembly, the American Association for the Advancement of Science and the American Association for Aerosol Research, an elected member of the International Statistics Institute, the recipient of the Eastern Analytical Symposium Award in Chemometrics, and a recipient of the David Sinclair Award.

16. HETEROGENEOUS AND AQUEOUS CHEMISTRY OF AEROSOLS

V. Faye McNeill, Department of Chemical Engineering, Columbia University, New York, NY

Abstract: The reactive uptake of gas-phase species by atmospheric aerosol particles influences both gas- and particle-phase chemical composition. The theoretical treatment of heterogeneous and multiphase aerosol chemical reactions will be presented. Topics to be covered include mass accommodation, Langmuir-Hinshelwood kinetics, multi-layer models, and reactions coupled with diffusion in the gas and particle phases. We will discuss atmospherically important classes of reactions including: the heterogeneous oxidation of aerosol organics, N2O5 uptake, halogen activation reactions, and aqueous-phase SOA formation. Finally, we will discuss approaches for characterizing these processes in a laboratory setting and in the ambient atmosphere.

V. Faye McNeill is an associate professor (untenured) in the Department of Chemical Engineering at Columbia University. She received a bachelor's degree in chemical engineering from the California Institute of Technology, and masters' and doctoral degrees in chemical engineering from the Massachusetts Institute of Technology. She conducted postdoctoral research at the University of Washington in the Department of Atmospheric Sciences. She has received the NSF CAREER award and the ACS Petroleum Research Fund Doctoral New Investigator award. Her research interests include aerosol heterogeneous chemistry and the sources and properties of aerosol organics.

PLENARY LECTURES

Tuesday, October 9
8:00 AM – 9:15 AM

FRIEDLANDER LECTURE: NUCLEATION OF CLUSTERS BRIDGING THE SCALE FROM MOLECULES TO NANOPARTICLES

PAUL E. WAGNER, Paul M. Winkler, Fakultät für Physik, Universität Wien, Vienna, Austria

Gas to liquid phase transitions are important processes in materials science, aerosol physics and atmospheric science. The recent decade of atmospheric observations has demonstrated particle formation by nucleation to be a frequent phenomenon in the global atmosphere. The underlying activation mechanisms of small molecular clusters are thus of vital importance. However, homogeneous as well as heterogeneous nucleation are still among the least understood phenomena in aerosol science.

New particle formation by homogeneous or heterogeneous nucleation generally proceeds via critical molecular clusters, whose sizes can be directly determined from experimental observables using the nucleation theorem. Homogeneous nucleation rate data provide information on the sizes of critical clusters down to diameters of 2 nm in satisfactory agreement with the Kelvin relation [1]. Experiments on heterogeneous nucleation in n-propanol vapour allowed for the first time to bridge the scale from molecular clusters to nanoparticles [2]. For charged seed particles an enhancement of heterogeneous nucleation and a significant charge sign preference were observed.

Recently we have activated single seed ion molecules at sizes far below the Kelvin-Thomson prediction. This unexpected behaviour has now been explained by quantitative determination of the molecular content of critical clusters [3]. We found these clusters to be significantly larger than the seed particles and in fact fairly well predicted by the Kelvin-Thomson relation. Consequently the fundamental detection limit of Condensation Particle Counters is now considerably extended down to particle diameters of about 1 nm. We have designed a new expansion type measurement system (vSANC), which will be used in joint nucleation experiments at CERN, Geneva [4].

[1] R. Strey, P.E. Wagner, Y. Viisanen, J. Phys. Chem. 98, 7748 (1994).
[2] P.M. Winkler et al., Science 319, 1374 (2008).
[3] P.M. Winkler et al., Phys. Rev. Lett. 108, 085701 (2012).

[4] J. Kirkby et al., Nature 476, 429 (2011).

Dr. Paul Wagner is currently Ao. Professor at the Fakultät für Physik, Universität Wien, Austria. Previously, he held academic positions as Max Kade Scholar at Clarkson University, USA (1975-76), visiting scientist at Max Planck Institut für Biophysikalische Chemie, Göttingen, Germany (1979), guest scholar at Kyoto University, Japan (1989), visiting professor at the University of Helsinki, Finland (1991, 2004), and visiting fellow at Doshisha University, Japan (2010). Dr. Wagner has received several awards for his work in the field of nucleation and condensation phenomena, including the Smoluchowski Award for Aerosol Research (1986), Fellow of the Japan Society for the Promotion of Science (1989), Honorary Member of the Committee on Nucleation and Atmospheric Aerosols (1996), Honorary Degree of the University of Helsinki (2007), and Honorary Member of the Finnish Association for Aerosol Research (2008). He has served as editorial board member of two scientific journals, vice president of the Gesellschaft für Aerosolforschung (1995-96), chairman of the Committee on Nucleation and Atmospheric Aerosols (1988-96), and co-chairman of five International Conferences. Dr. Wagner has authored ten books and about 180 publications in scientific journals.

Wednesday, October 10

8:00 AM – 9:15 AM

AEESP LECTURE: EMBRACING COMPLEXITY: DECIPHERING ORIGINS AND TRANSFORMATIONS OF ATMOSPHERIC ORGANICS THROUGH SPECIATED MEASUREMENTS

ALLEN H. GOLDSTEIN, University of California, Berkeley, CA

Organic material accounts for a large fraction of atmospheric aerosol, with the majority being secondary organic aerosol (SOA) formed through oxidation processes. Primary emissions leading to SOA include thousands of chemicals from a variety of natural and anthropogenic sources ranging over approximately 15 orders of magnitude of volatility. As organics are oxidized they fragment to form smaller volatiles or add functionality leading to SOA formation, dramatically increasing the complexity of compounds present. A continuing challenge in aerosol research is to elucidate the sources, structure, chemistry, fate, climate and health impacts of these organic atmospheric constituents.

The complex chemical composition of organic aerosols presents unique measurement challenges. Dr. Goldstein's group and close collaborators have developed the Thermal Desorption Aerosol Gas chromatograph (TAG) system for hourly in-situ speciation of a wide range of primary and secondary organic compounds in aerosols. This instrument combines a particle collector with thermal desorption followed by GCMS detection to provide hourly separation, identification, and quantification of organic constituents at the molecular level. We incorporated two-dimensional chromatography (GCxGC), providing dramatically enhanced speciation. We developed a semivolatile collection and analysis system that allows simultaneous measurement of specific organics in the gas and particle phases, enabling analysis of their partitioning. We also developed a combined TAG-AMS (Aerosol Mass Spectrometer) instrument for simultaneous measurements of the total and speciated aerosol composition. We are currently exploring soft ionization with vacuum ultraviolet radiation using a high resolution time of flight mass spectrometer (GCxGC/VUV-HRTOFMS) to more fully separate and identify compounds in complex mixtures such as diesel fuel, motor oil, fire emissions, in controlled oxidation studies, and in ambient samples. This talk will review recent developments (TAG, 2DTAG, SVTAG, TAG-AMS, GCxGC/VUV-HRTOFMS), and present new atmospheric observations, source characterizations, and controlled oxidation studies to more fully characterize atmospheric organic sources and transformation processes.

Allen H. Goldstein is currently a professor in the Department of Civil and Environmental Engineering and in the Department of Environmental Science, Policy, and Management, at the University of California, Berkeley where he served as department chair from 2007-2010. Professor Goldstein received his BA and BS degrees from the University of California at Santa Cruz in politics and chemistry, and his MA and PhD degrees in chemistry from Harvard University. His research program encompasses anthropogenic air pollution, biosphere-atmosphere exchange of radiatively and chemically active trace gases, and development and application of novel instrumentation to investigate the organic chemistry of earth's atmosphere. He engages in field measurement campaigns, controlled laboratory experiments, and modeling activities covering urban, rural, regional, intercontinental, and global scale studies of ozone, aerosols, and their gas phase precursors. His comprehensive research questions include; What controls atmospheric concentrations of greenhouse gases, photochemical oxidants, and aerosols? How do terrestrial ecosystems interact chemically and physically with earth's atmosphere? Professor Goldstein has

published approximately 200 peer-reviewed articles and holds a patent (with Susanne Hering) for On-Line Gas Chromatographic Analysis of Airborne Particles. His honors include being elected a fellow of the American Geophysical Union (2011), selected as a Miller Foundation Researcher Professor (2010-11), and a Fulbright Senior Scholar in Australia (2005).

Thursday, October 11
8:00 AM – 9:15 AM

A TANGLED WEB: OCCUPANTS, SQUAMES, OZONE, SOA AND SVOCS IN INDOOR ENVIRONMENTS

CHARLES WESCHLER, UMDNJ-Robert Wood Johnson Medical School, New Brunswick, NJ

By their very presence and independent of their activities, humans influence the environments they occupy. The outer layer of human skin – the stratum corneum – is covered by lipids including squalene and unsaturated fatty acids. These compounds react readily with ozone, significantly reducing its indoor concentration and generating oxidized byproducts. From first principles, one expects that some byproducts of ozone-lipid chemistry partition between the gas phase and airborne particles, contributing to secondary organic aerosols (SOA) in occupied rooms. Conversely, the lower indoor ozone levels as a consequence of titration by the exposed skin, hair and clothing of occupants means less generation of SOA from ozone-initiated reactions with terpenoids and other unsaturated organic compounds that can serve as SOA precursors indoors. Occupants also inadvertently transfer their skin oils to exposed indoor surfaces and continuously shed their skin as small flakes, known as "squames." A typical adult sloughs 200,000 - 600,000 squames per minute, equivalent to 30 - 90 mg per hour. Consistent with their origin, these squames contain squalene (~1% by weight) and unsaturated fatty acids. By transferring their oils and depositing their skin flakes onto indoor surfaces, occupants alter indoor environments even when they are no longer present. Evidence for what humans leave behind includes measured levels of squalene in airborne particles and settled dust, as well as human skin microbiota found in airborne particles and on indoor surfaces as determined by rDNA gene-sequence analysis. The squalene and unsaturated fatty acids in settled dust and on indoor surfaces further impact the levels of ozone and, indirectly, SOA. In turn, indoor particles, including squames, their fragments and ozone-derived SOA, can alter the concentrations and fates of co-occurring SVOCs. All else being equal, as particle concentrations

increase, gas-phase concentrations of SVOCs decrease, and emission rates of SVOCs from indoor surfaces increase. For any given SVOC, the larger the ratio of its particle- to gas-phase concentration, the larger the influence of particles on its overall dynamics. Additionally, it has been argued recently that airborne particles might enhance the net flux of SVOCs to human surfaces by as much as a factor of five for realistic indoor conditions. In summary, dynamic physical and chemical processes involving people and particles can markedly influence pollutant exposures that humans experience in indoor environments.

Charles J. Weschler is an adjunct professor, Department of Environmental and Occupational Medicine, University of Medicine and Dentistry of New Jersey (UMDNJ)/Robert Wood Johnson Medical School and the UMDNJ- School of Public Health. In addition he is a visiting professor (ongoing) at the Technical University of Denmark and Tsinghua University, Beijing. Professor Weschler received his BS in chemistry from Boston College and his MS (physical sciences) and PhD (chemistry) from the University of Chicago. His expertise lies in indoor pollutant exposures; their contributions to total pollutant exposures and consequent health effects; chemical reactions among indoor pollutants and their products, including ozone derived free radicals and secondary organic aerosols; gas/particle and gas/surface partitioning in indoor environments and factors that influence the concentrations, transport and surface accumulations of indoor pollutants. Dr. Weschler has written 108 peer-reviewed journal articles; 13 articles cited more than 100 times; four editorials; 50 articles in conference proceedings; and 12 articles and chapters in books. He is a member of numerous professional societies and associations including the Air & Waste Management Association, the American Association for the Advancement of Science, the American Chemical Society, and the American Association for Aerosol Research. In 1999 he was elected to the International Academy of Indoor Air Sciences.

Friday, October 12

8:00 AM – 9:15 AM

MULTIPHASE OXIDATION CHEMISTRY: IMPACTS ON BOTH THE GAS PHASE AND AEROSOL

JONATHAN ABBATT, University of Toronto, Toronto, Ontario, Canada

Whereas gas phase oxidation mechanisms are comparatively well understood, considerable uncertainties remain with respect to the nature and potential importance of multiphase oxidation processes

in which oxidative reactions occur either within a condensed phase or at a gas-particle interface. While such chemistry has long been recognized to be important in the oxidation of sulfur(IV) to sulfur(VI) in cloudwater and for promoting the Ozone Hole, its prevalence with tropospheric aerosol and at the Earth's surface remains poorly quantified. As well, such reactions are likely to occur indoors, given the relatively slow gas-phase chemistry that prevails in these environments. In part, these uncertainties arise because of the complexity of the chemistry: oxidants may either form in-situ or be delivered from the gas phase, chemistry can occur at interfaces or in the bulk, and mass transport limitations can be important in both the gas and condensed phases. After an introduction to the general issues involved in multiphase oxidation chemistry, this talk will illustrate the complexity of the field by focusing on specific examples from across the realm of aerosol and atmospheric chemistry. Attention will be given to: i) organic aerosol oxidation, whereby the overall oxidation state and hygroscopicity of the particle may change, ii) transformations of trace, toxic species (such as polycyclic aromatic hydrocarbons) within particles, and iii) oxidation processes that occur within cloudwater. In addition, the potential for multiphase chemistry occurring at the Earth's surface, such as at high latitudes with salty substrates or with the marine surface microlayer, will also be discussed.

Jonathan Abbatt is a professor in the Department of Chemistry at the University of Toronto, where he is also the associate director of the Centre for Global Change Science. He received his BSc in chemistry from the University of Toronto and PhD in chemistry from Harvard University. Dr. Abbatt's research is concentrated in atmospheric aerosol chemistry: i.e. multiphase chemical processes, aerosol phase transitions, ice and liquid water cloud formation mechanisms, and field studies of tropospheric aerosol processes. Professor Abbatt has been co-editor of Atmospheric Chemistry and Physics since 2003 and co-editor for Atmospheric Measurement Techniques since 2011. He became a fellow of the American Geophysical Union in 2012 and won the CIC Environment Division Research and Development Award in 2012. Having over 3,700 citations, Dr. Abbatt has been invited to give over 100 seminars internationally. He was co-chair of the 2011 Gordon Conference in Atmospheric Chemistry and is currently a member of the IGAC Scientific Steering Committee.

SPECIAL SYMPOSIA

AEROSOL NUCLEATION: FROM CLUSTERS TO NANOPARTICLES

Co-chairs: James Smith, Atmospheric Chemistry Division, National Center for Atmospheric Research, Boulder, CO; Chris Hogan, Department of Mechanical Engineering, University of Minnesota, Minneapolis, MN

Description: This is currently a time of rapid advances in research on the formation of stable molecular clusters (nucleation), the properties of such clusters, and the mechanism by which clusters grow into larger nanoparticles. New instruments can now detect particles as small as 1.5 nm in diameter and measure the composition of ambient charged and neutral clusters, and new facilities allow laboratory studies of nucleation at precursor concentrations that approximate those in the real atmosphere. Theoretical calculations are providing insights into the mechanisms of nucleation, and models that account for nucleated aerosols are increasing in sophistication. Along these lines, this session solicits contributions that focus on the precursors, formation mechanisms, and physico-chemical properties of molecular clusters formed by nucleation and the mechanisms by which clusters grow to form nanometer-sized particles. Submissions will likely focus on, but are not limited to (1) the development of new instruments for the analysis of molecular clusters and nanoparticles in laboratory and ambient environments, (2) measurements of cluster formation and growth rates in laboratory and ambient environments, (3) fundamental studies of the physical and chemical properties of molecular clusters in the gas phase, (4) theoretical and numerical predictions of the properties and growth of molecular clusters, and (5) the impacts of molecular cluster formation and nanoparticle growth on global aerosol and climate models.

SYNTHESIS OF FUNCTIONAL MATERIALS USING FLAMES, PLASMAS AND OTHER AEROSOL METHODS

Co-chairs: Gerhard Kasper, Karlsruhe Institute of Technology, Karlsruhe, Germany; Bernd Sachweh, BASF, Ludwigshafen, Germany;Steven Girshick, Department of Mechanical Engineering, University of Minnesota, Minneapolis, MN

Description: Functional materials are the basis for many advanced products ranging from energy storage devices, printable electronics and biomedicine to functional surface coatings, pigments and catalysts. For many future applications multiple functions have to be integrated into one basic material e.g. to maintain the well-defined properties during lifetime of a product or to minimize the specific size in which different functions can be realized.

Desired end products require increasingly complex combinations of processing steps, each of which creates one specific feature, either physical or chemical, by exploiting unique structuring possibilities either in the gas or liquid phase. Designing such finely tuned, integrated processes is a challenge that goes well beyond classical unit operations. It requires close cooperation of basic science and industrial process design expertise. The symposium wishes to foster this dialogue by highlighting the possibilities of aerosol technology as an enabling discipline for the design of advanced functional materials. Its aim is to bring together researchers involved in synthesis and surface structuring of particulate materials by aerosol methods such as flames and plasmas, atmospheric pressure CVD, photochemistry and other techniques. Continuous, gas-phase based synthesis and structuring steps are already proven to be flexible, reproducible and precise in tailoring a wide range of functional properties, with new possibilities being developed. Aerosol science has developed an in-depth understanding of the underlying kinetic mechanisms; it has an impressive array of highly sensitive on-line measurement techniques for everything from size distribution to coating thickness or surface composition; and methods are available to handle the transition from the aerosol to the liquid phase or dry coatings without loss of functionality, thereby enabling an optimal combination of processing steps with the end product in mind.

THE INDOOR MICROBIOME

Co-chairs: Jordan Peccia, Department of Chemical and Environmental Engineering, Yale University, New Haven, CT; Tiina Reponen, Deptartment of Environmental Health, University of Cincinnati, Cincinnati, OH

Description: Continually evolving molecular biology and computational methods are catalyzing the further integration of the biological sciences with aerosol science and engineering. This growing influence of biology is converging with the long-standing interest in aerosols suspended in the indoor environment and human exposure to airborne etiological agents. The purpose of this symposium is to bring together researchers interested in the biology of indoor air and the indoor environment. Expertise from engineering, molecular biology, chemistry, public health, and architecture will present new findings on the content, dynamics, and ecologies of bacteria, fungi, and viruses present in indoor air, as well as describe how potential sources (humans, outdoor air, surfaces) impact exposure to these biological particles.

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TECHNICAL PROGRAM

Tuesday 8:00 AM - 9:15 AM
Plenary I: Friedlander Lecture

8:00	**Welcoming Remarks** Sergey Nizkorodov, Conference Chair. *University of California, Irvine.*
8:05	**Friedlander Lecture: Nucleation of Clusters Bridging the Scale from Molecules to Nanoparticles** Paul Wagner. *Universitaet Wien, Vienna, Austria.*
	Moderator James Smith. *National Center for Atmospheric Research.*
9:00	**Friedlander Award Presentation, AAAR Fellows, IARA Fellows** Sonia Kreidenweis, Awards Committee Chair. *Colorado State University*

Tuesday 9:00 AM - 4:00 AM
Exhibits Open

Tuesday 9:15 AM - 9:45 AM
Coffee Break

Tuesday 9:45 AM - 11:30 AM
Session 1: Platform

1AC AEROSOL CHEMISTRY I
NICOLLET A

Kelley Barsanti and Nicole Riemer, chairs

1AC.1 9:45	**Modeling of Solute Activities and Relative Humidity in Atmospheric Aerosols.** CARI DUTCHER, Ge Xinlei, Anthony Wexler, Simon Clegg, *University of California, Davis*
1AC.2 10:00	**Model for Acid-Base Chemistry in Nanoparticle Growth.** TAINA YLI-JUUTI, Kelley C. Barsanti, Lea Hildebrandt Ruiz, Antti-Jussi Kieloaho, Theo Kurten, Ulla Makkonen, Tuukka Petäjä, Mikko Äijälä, Markku Kulmala, Ilona Riipinen, *University of Helsinki*

1AC.3 10:15	**Modeling the Formation and Evolution of Secondary Organic Aerosol in a Potential Aerosol Mass (PAM) Chamber.** Shuang Chen, WILLIAM BRUNE, Paul Davidovits, Andrew Lambe, Timothy Onasch, *Pennsylvania State University*
1AC.4 10:30	**Modification of the CMAQ Secondary Organic Aerosol (SOA) Module to Allow Consideration of Activity Coefficients and Water Uptake.** MARGUERITE C. MARKS, Abdullah Mahmud, Kelley C. Barsanti, William E. Asher, James F. Pankow, *Portland State University*
1AC.5 10:45	**Impact of Meteorology and Aerosol Composition on Heterogeneous N2O5 Hydrolysis and Chlorine Activation during CalNex 2010.** WAYNE CHANG, Steven Brown, Nicole Riemer, *University of Illinois at Urbana-Champaign*
1AC.6 11:00	**Improvement of Simulation of Fine Inorganic PM Levels through Better Descriptions of Coarse Particle Chemistry.** ERICA TRUMP, Christos Fountoukis, Neil Donahue, Spyros Pandis, *Carnegie Mellon University*
1AC.7 11:15	**Effect of Criegee Biradical Reactions on Regional Secondary Inorganic and Organic Aerosol.** JINGYI LI, Qi Ying, *Texas A&M University*

1AE AEROSOL EXPOSURE I
LAKE SUPERIOR

Jana Kesavan and Gediminas Mainelis, chairs

1AE.1 9:45	**Inhalation Intake Fractions of Vehicle-Attributable Organic PM2.5.** JOSHUA APTE, Julian Marshall, William Nazaroff, *University of California, Berkeley*
1AE.2 10:00	**Personal, Indoor, and Outdoor Exposure Assessment of Particulate Matter and Their Associations with Respiratory Symptoms in Children.** SEUNG-HYUN CHO, Jonathan Thornburg, Charles Rodes, Diane Wagener, *RTI International*
1AE.3 10:15	**Refined Estimates of Ambient PM2.5 Exposure: Validation and Refinement of a Mechanistic Indoor Transport Model.** NATASHA HODAS, Qing Yu Meng, Melissa M. Lunden, Barbara Turpin, *Rutgers University*
1AE.4 10:30	**Enhanced Air Pollution Epidemiology Using a 3D Source Oriented Air Quality Model in California.** JIANLIN HU, Christina Zapata, Bart Ostro, Michael Kleeman, *UC Davis*

1AE.5 10:45 **In-Cabin Ultrafine Particle Concentration Inside Passenger Car Fleet on Several Los Angeles Roadways.** NEELAKSHI HUDDA, Constantinos Sioutas, Ralph Delfino, Scott Fruin, *University of Southern California*

1AE.6 11:00 **Spatiotemporal Assessment of Fine Particle Exposures During Commuting Activities.** KIRSTEN KOEHLER, Jennifer Peel, Maggie Clark, Stuart Amy, John Volckens, *Colorado State University*

1AE.7 11:15 **Nanoparticle Emission from Engineered Nanostructured Materials Leading to Exposure and Risk.** HEINZ FISSAN, Burkhard Stahlmecke, Christof Asbach, Thomas Kuhlbusch, *Institute of Energy and Environmental Technology*

1CC AEROSOLS, CLOUDS, AND CLIMATE I

NICOLLET B/C

Jeff Pierce and Ilona Piipinen, chairs

1CC.1 9:45 **Ice Nuclei Production from Sea Spray.** PAUL DEMOTT, Ryan Sullivan, Kimberly Prather, Thomas C. Hill, Gary D. Franc, Allan Bertram, Ryan Mason, Timothy Guasco, Douglas Collins, Luis Cuadra-Rodriguez, Andrew Ault, Vicki Grassian, *Colorado State University*

1CC.2 10:00 **Measurements of Ice Nucleation in the Contact Mode by Mineral Dusts.** Kristopher Bunker, Swarup China, Claudio Mazzoleni, Alexander Kostinski, WILL CANTRELL, *Michigan Technological University*

1CC.3 10:15 **The Role of Temperature in Cloud Droplet Activation.** Sara Christensen, MARKUS PETTERS, Paul Ziemann, Sonia Kreidenweis, *North Carolina State University*

1CC.4 10:30 **The Role of Time in Heterogeneous Freezing Nucleation.** TIMOTHY WRIGHT, Markus Petters, *North Carolina State University*

1CC.5 10:45 **Aerosol-Clouds-Precipitation: Aircraft Measurements on the East Coast of Canada.** Stéphanie Gagné, Richard Leaitch, JEFFREY PIERCE, *Dalhousie University*

1CC.6 11:00 **Effect of Rain on the Evolution of Aerosol Concentration Distribution in the Atmosphere.** BORIS KRASOVITOV, Tov Elperin, Andrew Fominykh, *Ben-Gurion University of the Negev*

1CC.7 11:15 **Biological Particles in Rain Events.** J. ALEX HUFFMAN, Christopher Pöhlker, Ryan Mason, Anthony J. Prenni, Paul DeMott, Niall Robinson, David Gochis, Douglas Day, Viviane Després, Janine Fröhlich-Nowoisky, Eliza Harris, Isabell Müller-Germann, Beatrice Schmer, Bärbel Sinha, Anita Sun, Yukata Tobo, Meinrat O Andreae, James N. Smith, Jose-Luis Jimenez, Martin Gallagher, Sonia Kreidenweis, Allan Bertram, Ulrich Pöschl, *University of Denver*

1CO COMBUSTION I

MIRAGE ROOM

Xiaofei Ma and Mingdong Li, chairs

1CO.1 9:45 **Understanding the Role of a Nano Ce Additive in the Size Distribution and Organic Composition of the Particulate Phase of Diesel Emissions.** DAVID NASH, Jason Weinstein, William Roberts, Tiffany Yelverton, Jost Wendt, Robert Willis, Gary Norris, William Linak, *U.S. EPA*

1CO.2 10:00 **Characterization of Emissions Due to Internal Combustion of Nano-CeO$_2 Doped Diesel Fuel.** YEVGEN NAZARENKO, Leonardo Calderon, Lin Zhang, Jim Zhang, Paul Lioy, Kian Fan Chung, Gediminas Mainelis, *Rutgers, The State University of New Jersey*

1CO.3 10:15 **Physicochemical Characterization of Cerium Particles Generated by Combustion of Ce-Doped Diesel Fuel.** ROBERT WILLIS, Kristin Bunker, Traci Lersch, Gary Casuccio, Eric Grulke, Natalia Mandzy, Joseph Conny, Michael Lewandowski, Jason Weinstein, Jonathan Krug, Kasey Kovalcik, *U.S. EPA*

1CO.4 10:30 **Exhaust PM Measurement Using Low Cost Monitors: What They Measure and How Well.** MATTI MARICQ, *Ford Motor Company*

1CO.5 10:45 **Comparison of PM Emissions in Expanding Exhaust Plumes from Gas Turbine Engines burning Conventional and Alternative Fuels.** PREM LOBO, Donald Hagen, Max Trueblood, Philip Whitefield, *Missouri University of Science and Technology*

1CO.6 11:00 **Evaluation of Uncertainties in Aircraft Engine Soot Emissions Derived from Engine Smoke Number.** MARC STETTLER, Adam M Boies, *University of Cambridge*

1CO.7 11:15 **The Investigation of Water-Insoluble Particle Emissions of Butanol and Ethanol Gasoline Mixtures.** DANIEL SHORT, Diep Vu, Maryam Hajbabaei, Georgios Karavalakis, Thomas D. Durbin, Akua Asa-Awuku, *University of California, Riverside*

1IM INSTRUMENTATION AND METHODS I

REGENCY ROOM

Nathan Kreisberg and Rodney Weber, chairs

1IM.1 9:45 **Importance of Temperature Calibration for the Sunset Laboratory Carbon Analyzer: NIOSH and IMPROVE Temperature Protocols.** JELICA PAVLOVIC, John Kinsey, *ORISE U.S.EPA*

1IM.2 10:00 **Development of an In Situ Thermal Desorption Gas Chromatograph for Intermediate-Volatility and Semi-volatile Organic Compounds.** YUNLIANG ZHAO, Nathan Kreisberg, Susanne Hering, Allen H. Goldstein, *University of California, Berkeley*

1IM.3 10:15 **Development of a Highly Specific and Sensitive Technique to Measure Organic Nitrogen in Atmospheric Aerosols.** JACQUELINE HAMILTON, Mustafa Ozel, Lewis Alastair, *University of York*

1IM.4 10:30 **Infrared Spectroscopic Determination of Aerosol Organic Mass using Partial Least Squares Regression.** TRAVIS RUTHENBURG, Ann Dillner, *University of California, Davis*

1IM.5 10:45 **Semi-continuous Online Measurements of Reactive Oxygen Species in the Particle and Gas Phase.** LAURA KING, Vishal Verma, Rodney Weber, *Georgia Institute of Technology*

1IM.6 11:00 **A Long Path Absorbance Photometer for the Determination of Peroxide Content and Brown Carbon in Organic Aerosol.** JOSEF DOMMEN, Peter Mertes, Stephen Platt, Imad El Haddad, Lisa Pfaffenberger, Andre Prévôt, Markus Kalberer, Urs Baltensperger, *Paul Scherrer Instiute*

1IM.7 11:15 **Extractive Electrospray Ionisation (EESI): A Novel Mass Spectrometry Technique for the Online Characterization of Organic Aerosol.** PETER GALLIMORE, Markus Kalberer, *University of Cambridge*

1UA URBAN AEROSOLS I

NICOLLET D

Cliff Davidson and Jill Craven, chairs

1UA.1 9:45 **Organic Aerosol Composition, Sources, and Modeling for Los Angeles during the 2010 CalNex Campaign.** Patrick Hayes, JOSE-LUIS JIMENEZ, Michael Cubison, Amber Ortega, James Allan, Jessica Gilman, William C. Kuster, Joost de Gouw, Gabriel Isaacman, David Worton, Nathan Kreisberg, Susanne Hering, Allen H. Goldstein, Rebecca Washenfelder, Jonathan Taylor, Rainer Volkamer, Eleanor Waxman, Ryan Thalman, Rodney Weber, Xiaolu Zhang, et al., *University of Colorado*

1UA.2 10:00 **Organic Aerosol Characterization of the Los Angeles Basin from Aircraft Measurements during CalNex.** JILL CRAVEN, Andrew Metcalf, Richard Flagan, John Seinfeld, *Caltech*

1UA.3 10:15 **Comparison of Estimates of Airmass Aging Using Particle and Other Measurements near Fort Worth, TX.** BASAK KARAKURT CEVIK, Robert Griffin, Andrew Rutter, Barry Lefer, James Flynn, Saewung Kim, *Rice University*

1UA.4 10:30 **Source Apportionment of Organic Aerosols and VOCs Near Fort Worth, TX.** ANDREW RUTTER, Basak Karakurt Cevik, Longwen Gong, Kabin Shakya, Caroline Gutierrez, Melanie Calzada, Saewung Kim, Robert Griffin, James Flynn, Barry Lefer, *Rice University*

1UA.5 10:45 **Understanding Intra-Neighborhood Patterns in Fine Particulate Air Pollution Using Mobile Monitoring in Braddock, PA.** Brett Tunno, Kyra Shields, Paul Lioy, Nanjun Chu, Joseph Kadane, Bambang Parmanto, Gede Pramana, Jennifer Zora, CLIFF DAVIDSON, Fernando Holguin, Jane Clougherty, Daniel S. Tkacik, Andrew A. May, *Syracuse University*

1UA.6 11:00 **Factors and Particle Dynamics Controlling Pollutant Plume Length Downwind of Major Roadways in Nocturnal Surface Inversions.** WONSIK CHOI, Meilu He, Vincent Barbesant, Kathleen Kozawa, Steve Mara, Arthur Winer, Suzanne Paulson, *University of California Los Angeles*

1UA.7 11:15 **Ultrafine Particle Infiltration to Passenger Vehicle Cabins: the Effects of Driving Speed and Ventilation Setting.** EON LEE, Yifang Zhu, *University of California, Los Angeles*

Tuesday 1:00 PM - 3:00 PM
Session 2: Poster

2AC AEROSOL CHEMISTRY II: POSTERS
EXHIBIT HALL

2AC.1 1:00	**Secondary Organic Aerosol Formation from the Isoprene Ozonolysis: Effect of OH Radical Scavenger on the Radical Chemistry.** KEI SATO, Satoshi Inomata, Risa Uchida, Takashi Imamura, Jun Hirokawa, Motonori Okumura, Susumu Tohno, *National Institute for Environmental Studies*
2AC.2 1:00	**Investigation of SOA Composition from the Photolysis of 1-Nitronaphthalene using Single Particle Mass Spectrometry.** ROBERT HEALY, Yang Chen, Ivan Kourtchev, Markus Kalberer, John Wenger, *University College Cork*
2AC.3 1:00	**Displacement of Ammonium from Aerosol Particles by Uptake of Triethylamine.** Lap P. Chan, CHAK K. CHAN, *Hong Kong University of Science and Technology*
2AC.4 1:00	**Gas-Particle Partitioning of Ammonia in the Fort Worth, TX Area.** LONGWEN GONG, Rafal Lewichi, Robert Griffin, Andrew Rutter, Frank Tittel, Barry Lefer, James Flynn, Jack Dibb, Eric Scheuer, *Rice University*
2AC.5 1:00	**Chamber Simulation of Photooxidation of Dimethyl Sulfide and Isoprene in the Presence of NOx.** Tianyi Chen, MYOSEON JANG, *University of Florida*
2AC.6 1:00	**Characterization of Oligomers Products from Heterogeneous Acid-Catalyzed Reaction of Methyl Vinyl Ketone and Their Formation Reaction Mechanisms.** Ka M. Chan, Dan D. Huang, Yong J. Li, Man N. Chan, John Seinfeld, CHAK K. CHAN, *Hong Kong University of Science and Technology*
2AC.7 1:00	**Organic Hydroperoxides (ROOH) Photolysis as a Source of Hydroxyl Radicals (OH) in Aqueous SOA.** DANA ALJAWHARY, Alex K. Y. Lee, Ran Zhao, Jonathan Abbatt, *University of Toronto*
2AC.8 1:00	**Photolysis of Aldehydes in Organic Matrices as a Model for Photolytic Processing of Organic Aerosols.** SANDRA BLAIR, Dorit Shemesh, Benny Gerber, Adam Bateman, Sergey Nizkorodov, *University of California, Irvine*

2AC.9 1:00	**Organosulfate Formation from 2-Methyl-3-Buten-2-ol (MBO) as a Secondary Organic Aerosol (SOA) Tracer in the Atmosphere.** HAOFEI ZHANG, David Worton, Michael Lewandowski, John Ortega, Caitlin Rubitschun, Kasper Kristensen, Pedro Campuzano-Jost, Douglas Day, Jose-Luis Jimenez, Mohammed Jaoui, John Offenberg, Tadeusz Kleindienst, Jessica Gilman, Joost de Gouw, Chang Hyoun Park, Gunnar Schade, Amanda Frossard, Lynn Russell, Marianne Glasius, Alex Guenther, Allen H. Goldstein, John Seinfeld, Avram Gold, Richard Kamens, Jason Surratt, *University of North Carolina at Chapel Hill*
2AC.10 1:00	**Characterization of the Heterogeneous Aging of Secondary Organic Aerosols Formed via Isoprene Ozonolysis Using Aerosol Flow Tube - FTIR Spectroscopy.** Demetrios Pagonis, Brian Bouchard, Jeff Baker, CINDY DEFOREST HAUSER, *Davidson College*
2AC.11 1:00	**Computational Study Probing the Potential Energy Surfaces of Acid Catalyzed Particle Phase Reactions.** IVAN PILETIC, Edward Edney, Libero Bartolotti, *U.S. Environmental Protection Agency*
2AC.13 1:00	**The Atmospheric Organic Aerosol Explored Through High Resolution Mass Spectrometry.** YIYI WEI, Tingting Cao, Yehia Mechref, Jonathan Thompson, *Texas Tech University*
2AC.14 1:00	**Implications of Aerosol-phase Photocatalytic Epoxidation and Ion-specific Enhancement of Organic Partitioning.** GE YU, Frank Keutsch, *University of Wisconsin - Madison*
2AC.15 1:00	**The Effect of Particle Size on Iron Solubility in Atmospheric Aerosols.** AURELIE MARCOTTE, Brian Majestic, Ariel Anbar, Pierre Herckes, *Arizona State University*
2AC.16 1:00	**A Chamber Study of the Aging of Reaction Products Formed by Photo-Oxidation of Beta-Pinene.** MEHRNAZ SARRAFZADEH, Donald Hastie, *York University*
2AC.17 1:00	**Detection of a Variety of Amines with Ambient Pressure Proton Transfer Mass Spectrometry.** Kimberly Carlson, NATHAN FRESHOUR, Walker Glasoe, Baradan Panta, David Hanson, *Augsburg College*

2AC.18 1:00 **Selective Depletion of Branched and Higher-Volatility Alkanes in the Heterogeneous OH Oxidation of Motor Oil Particles.** Gabriel Isaacman, ARTHUR CHAN, Theodora Nah, Katheryn Kolesar, Chris Ruehl, David Worton, Drew Gentner, Timothy Dallmann, Thomas Kirchstetter, Christopher Cappa, Robert Harley, Kevin Wilson, Allen H. Goldstein, *University of California, Berkeley*

2AC.19 1:00 **Images Reveal That Atmospheric Particles Can Undergo Liquid-Liquid Phase Separations.** Yuan You, LINDSAY RENBAUM-WOLFF, Marc Carreras-Sospedra, Sarah J. Hanna, Naruki Hiranuma, Saeid Kamal, Mackenzie Smith, Xiaolu Zhang, Rodney Weber, John Shilling, Donald Dabdub, Scot Martin, Allan Bertram, *University of British Columbia*

2AC.20 1:00 **Aqueous Processing of Low Molecular Weight Carbonyls in Ammonium Sulfate Solutions.** D M HABIB, Lynn Mazzoleni, *Michigan Technological University*

2AC.21 1:00 **Modeling NOx-dependent Chemistry During Organic Aerosol Aging with the 2D-VBS.** WAYNE CHUANG, Neil Donahue, *Carnegie Mellon University*

2AC.22 1:00 **The Role of Multiphase Aging in the Chemistry of Organic Aerosol.** KELLY DAUMIT, Jesse Kroll, *MIT*

2AC.23 1:00 **Modeling of Secondary Organic Aerosol from Aromatic Compounds in the Presence of SO2.** YUNSEOK IM, Myoseon Jang, *University of Florida*

2AC.24 1:00 **Oxidative Aging of Organic Aerosol: Role of Carbon Skeleton and Fragmentation Reactions.** JAMES HUNTER, Anthony Carrasquillo, Kelly Daumit, Eben Cross, Douglas Worsnop, Jesse Kroll, *MIT*

2AC.25 1:00 **Formation of Secondary Organic Aerosol by the Direct Photolytic Generation of Alkoxy Radicals.** ANTHONY CARRASQUILLO, Sean Kessler, Theodora Nah, Kevin Wilson, Douglas Worsnop, Jesse Kroll, *MIT*

2AC.26 1:00 **Characterization of Fine Particles by the ASCM at an Urban Background Area in Kaohsiung, Taiwan.** MINNA AURELA, Sanna Saarikoski, Yee-Lin Wu, Risto Hillamo, Min-Shiou Wu, *Finnish Meteorological Institute*

2AC.27 1:00	**Ship Impacts on Marine Aerosol and Clouds.** MATTHEW COGGON, Armin Sorooshian, Andrew Metcalf, Amanda Frossard, Zhen Wang, Taylor Shingler, Jill Craven, Lynn Russell, Haflidi Jonsson, John Seinfeld, *Caltech*
2AC.28 1:00	**Online, Mobile Measurements of the Chemical Composition of Volcanic Smog ("vog").** Eben Cross, ZARA L'HEUREUX, Lisa Wallace, Anna Kelly, Kelly Daumit, Philip Croteau, John Jayne, Douglas Worsnop, Jesse Kroll, *MIT*
2AC.29 1:00	**Characterization of Submicron Particles at Long Island New York Using a High-Resolution Aerosol Mass Spectrometer.** Shan Zhou, QI ZHANG, Jianzhong Xu, Fan Mei, Jian Wang, Stephen Springston, Arthur Sedlacek, Yin-Nan Lee, *University of California, Davis*
2AC.30 1:00	**Comparison of Spectroscopic Signatures of Smog Chamber and Atmospheric Aerosols.** LYNN RUSSELL, Shang Liu, Kabindra Shakya, Ashley Corrigan, Anita Johnson, Paul Ziemann, John Shilling, Lisa Pfaffenberger, Jay Slowik, Andre Prévôt, Josef Dommen, Urs Baltensperger, Hwajin Kim, Suzanne Paulson, Spyros Pandis, Michael Lewandowski, John Offenberg, Tadeusz Kleindienst, Christine Loza, Jill Craven, Lindsay Yee, Katherine Schilling, John Seinfeld, *Scripps Institution of Oceanography, UCSD*
2AC.31 1:00	**Long-Term Measurements of Organic Aerosol and its Components at the DOE Atmospheric Radiation Measurement Sites.** QI ZHANG, Jerome Fast, Caroline Parworth, Timothy Shippert, Chitra Sivaraman, Fan Mei, Alison Tilp, *University of California, Davis*
2AC.32 1:00	**Chemically-Constrained CMAQ Evaluation of Organic Compounds with CALNEX Field Measurements.** ANNMARIE CARLTON, Kirk Baker, Tadeusz Kleindienst, John Offenberg, Mohammed Jaoui, *Rutgers University*
2AC.33 1:00	**Feasibility of the Detection of Trace Elements in Particulate Matter Using Online High Resolution Aerosol Mass Spectrometry.** DARA SALCEDO, Alexander Laskin, Vaithiyalingam Shutthanandan, Jose-Luis Jimenez, *Universidad Nacional Autónoma de México*

2AC.34 1:00 **Particulate Matter Chemistry in the San Joaquin Valley.** SURESH RAJA, Srikar M. Reddy, Neelesh Sule, Whitney Rowe, Christopher Marlais, Scott Nester, Philip K. Hopke, Lin Lin, Xia Xiaoyan, Sriraam Ramanathan Chandrasekaran, Jon Klassen, James W. Sweet, *Providence Engineering and Environmental Group*

2AC.35 1:00 **The Linked Aqueous-Phase Oxidation of Glyoxal and SO2: Light-Absorbing Products.** DAVID DE HAAN, W. Ryan Sueme, Eric Czer, Ashley Torkelson, Alec Rynaski, *University of San Diego*

2AC.36 1:00 **Laboratory Studies of gPinene Nitate Production and Aerosol Partitioning.** JOEL RINDELAUB, Kevin McAvey, Paul Shepson, *Purdue University*

2AC.37 1:00 **One-Pot Derivatization Methods for Obtaining Functional Group Distributions of Aerosol Constituents.** ALICIA KALAFUT-PETTIBONE, W. Sean McGivern, *National Institute of Standards and Technology*

2AC.38 1:00 **Aromatic Secondary Organic Aerosol Formation in the Presence of Sea Salt Aerosols.** ROSS BEARDSLEY, Myoseon Jang, Yunseok Im, Ori Barber, Carrie Delcomyn, Ned Witherspoon, *University of Florida*

2AC.39 1:00 **Hygroscopic Growth of Mixed Aerosol Particles Composed of Inorganic and Organic Compounds of Atmospheric Relevance.** IDANIA ZAMORA, Mark Jacobson, *Stanford University*

2AC.40 1:00 **Model Analysis of Aerosol Reaction Chamber Studies of Aqueous Aerosol SOA (aaSOA) Formation.** ANDREW SUMNER, Joseph Woo, V. Faye McNeill, *Columbia University*

2AC.41 1:00 **Secondary Organic Aerosol Formation from Acid-Catalyzed Uptake of gPinene Oxide to Aqueous Sulfate Particles.** JOSEPH WOO, Greg Drozd, Allison Schwier, V. Faye McNeill, *Columbia University*

2AC.42 1:00 **Investigation of a Particle into Liquid Sampler to Study the Formation and Ageing of Secondary Organic Aerosol.** JACQUELINE HAMILTON, Kelly L. Pereira, Andrew R. Rickard, William J. Bloss, M. Salim Alam, Marie Camredon, Amalia Munoz, Monica Vasquez, Esther Garcia, Mila Rodenas, Teresa Espallardo, *University of York*

2AC.43 1:00	**Particle Formation, Growth and Composition from Exposed Ocean Vegetation.** ANDREW HORAN, Daniel MacDonald, George Luther, Murray Johnston, *University of Delaware*
2AC.44 1:00	**Organic Matrix Effects on Aqueous Processing in Atmospheric Aerosols.** GREG DROZD, V. Faye McNeill, *Columbia University*
2AC.45 1:00	**Sulfuric Acid Hydration and Its Atmospheric Implications.** BERHANE TEMELSO, George Shields, *Bucknell University*
2AC.46 1:00	**Secondary Organic Particle Growth Under Different Conditions in a Flow Tube Reactor.** YUE ZHANG, Scot Martin, Franz Geiger, *Harvard University*

2AE AEROSOL EXPOSURE II: POSTERS
EXHIBIT HALL

2AE.2 1:00	**Time-Resolved Chemical Characterization of Ambient PM2.5 in Stockton, California.** ARANTZAZU EIGUREN-FERNANDEZ, Gregory Lewis, Steven Spielman, Susanne Hering, *Aerosol Dynamics Inc.*
2AE.3 1:00	**Virus, Bacteria, Gas and Odour Reductions by an Innovative Air Cleaning System Developed for Animal Housing.** VALÉRIE LÉTOURNEAU, Caroline Duchaine, Martin Belzile, Matthieu Girard, Stéphane P. Lemay, *IRDA, Canada*
2AE.4 1:00	**Development of an Air-Liquid Direct Exposure System for In Vitro Cell Exposure to Airborne Sub-Micron and Nano-Particles.** TA-CHIH HSIAO, Chun-Wan Chen, Yun-Ching Cheng, Ya-Chien Changchien, *National Central University, Jhongli City, Taiwan*
2AE.5 1:00	**Fine Particle Exposures During Vehicle Fire Suppression: Mobile Direct Reading Sampling.** DOUGLAS EVANS, Kenneth Fent, James Couch, *NIOSH DART*
2AE.6 1:00	**A Case Study in Fusion of Surface PM2.5 Observations and 3D Air Quality Model Output.** SINAN SOUSAN, Tiangfeng Chai, Jaemeen Baek, Scott Spak, Naresh Kumar, Jacob Oleson, Sarika Kulkarni, Gregory Carmichael, Charles Stanier, *University of Iowa*
2AE.7 1:00	**Determining the Recovery Efficiencies of Two Aerosol Samplers for Bacteria, Yeast, and Fungi.** JOHN TROMBLEY, Jordan Bohannon, Jonathan Spurgin, Larry Bowen, *Southern Research*

2AE.8 1:00 **Measurement of Silica on Filter Samples of Coal Dust Using a Field-Portable FTIR Method.** NATE MURPHY, Zachary Briggs, Andrew Kilpatrick, Courtney Quinn, Mackenzie Wadas, Emanuele Cauda, Art Miller, *NIOSH*

2AE.9 1:00 **Evaluation of a 7-Year Air Quality Simulation Study for Eastern United States.** HONGLIANG ZHANG, Gang Chen, Qi Ying, Jianlin Hu, Michael Kleeman, *Texas A&M University*

2AE.10 1:00 **Mineral and Heavy Metal Concentration in Air and Health Effects of North Kosovo.** AFRIM SYLA, Fatbardh Syla, *University of Prishtina, Kosovo*

2AE.11 1:00 **Estimation of Residential Exposure to Coal Powered Power Plant Emissions: From Regional to Biological Specimens.** QUENTIN MALLOY, Cortina Johnson, James Raymer, Jonathan Thornburg, Elizabeth Frey, Sangeeta Gupta, *RTI International*

2AE.12 1:00 **Measurements of PM2.5 Concentration and Composition in the Vicinity of Barnett Shale Natural Gas Production Facilities for Population Exposure Assessment.** BARBARA ZIELINSKA, Eric Fujita, David Campbell, *Desert Research Institute*

2AE.13 1:00 **Advances in Particulate Matter Exposure Assessment Instrumentation.** Charles Rodes, JONATHAN THORNBURG, *RTI International*

2AE.14 1:00 **Polycyclic Aromatic Hydrocarbons (PAHs) Concentration and Related Carcinogenic Potencies in PM10 at a Semi Arid Region of India.** AMIT MASIH, Ajay Taneja, *St. Andrew's College, Gorakhpur, India*

2AN SYMPOSIUM: AEROSOL NUCLEATION: FROM CLUSTERS TO NANOPARTICLES I: POSTERS

EXHIBIT HALL

2AN.1 1:00 **Vapor Nucleation Rate Surfaces for Some Systems with Polymorphous Phase Transitions.** Michael Anisimov, Elena Fominykh, PHILIP K. HOPKE, *Tech. Design Inst. of Scientific Instrument Engr SB RAS*

2AN.2 1:00 **Modeling the Evolution of Exhaust Plume During the Dilution Process: In-lab and On-road.** Yan Wang, Bo Yang, ZHEMING TONG, Eric Lipsky, Allen Robinson, Topi Ronkko, Jorma Keskinen, Max Zhang, *Cornell University*

2AN.3 1:00	**New Particle Formation and Growth Observed at Fukue Island, Japan in March 2012.** SEYOUNG KIM, Takafumi Seto, Yoshio Otani, Akinori Takami, Naoki Kaneyasu, Toshiyuki Fujimoto, Kikuo Okuyama, *Kanazawa University*
2AN.4 1:00	**Neutral Sulfuric Acid Clusters during Strong Nucleation Events in a Sulfate-Rich Urban Atmosphere.** JUN ZHAO, Fred Eisele, Peter McMurry, James N. Smith, *University of Minnesota*
2AN.5 1:00	**Resolving Size-dependent Particle Growth Rates below 2 nm from the Particle Size Magnifier.** Katrianne Lehtipalo, Siegfried Schobesberger, Alessandro Franchin, Tuomo Nieminen, Juha Kangasluoma, Jenni Kontkanen, JYRI MIKKILÄ, Tuukka Petäjä, Markku Kulmala, *University of Helsinki*
2AN.6 1:00	**A Novel Kinetics Mechanism for Particle Formation from Methanesulfonic Acid, Amines and Water.** MATT DAWSON, Mychel E. Varner, Veronique Perraud, Micheal, J. Ezell, Benny Gerber, Barbara J. Finlayson-Pitts

2CC AEROSOLS, CLOUDS, AND CLIMATE II: POSTERS
EXHIBIT HALL

2CC.1 1:00	**Global Perspectives on Aerosol Hygroscopicity and Cloud Forming Ability: A Synthesis of 8 Airborne and Field Campaigns.** TERRY LATHEM, Athanasios Nenes, *Georgia Institute of Technology*
2CC.2 1:00	**Cloud Condensation Nuclei Activity and Hygroscopicity of In-situ Biomass Burning Aerosol.** TERRY LATHEM, Bruce Anderson, Andreas Beyersdorf, Lee Thornhill, Edward Winstead, Joe Shaw, Michael Thomas, Glenn Shaw, Athanasios Nenes, *Georgia Institute of Technology*
2CC.3 1:00	**Hygroscopic Growth Measurements of Ambient Aerosol at a Suburban Site in Hong Kong: Seasonal Trends and Water-Uptake Behavior as a Function of Relative Humidity.** Ming Chee Yeung, CHAK K. CHAN, *Hong Kong University of Science and Technology*
2CC.4 1:00	**Investigating Potential Biases in Aerosol Light Absorption Measurements.** CHRISTINE WALSH, Elisabeth Andrews, John Ogren, Patrick Sheridan, Anna Gannet Hallar, Paola Massoli, Andy Freeman, Daniel Lack, Justin Langridge, *NOAA; Lund University*

2CC.5 1:00	**Coatings on Light Absorbing Aerosols: Optical Effects, Morphology, and Composition.** LULU MA, Hao Tang, Jonathan Thompson, *Texas Tech University*
2CC.6 1:00	**A Model Study on the CCN Activation of Multicomponent Organic Aerosols.** ILONA RIIPINEN, Narges Rastak, Spyros Pandis, *Carnegie Mellon University*
2CC.7 1:00	**Power-Law Patterns in Electromagnetic Scattering for Nonspherical Particles.** MATTHEW BERG, *Mississippi State Univeristy*
2CC.8 1:00	**Droplet Number Prediction Uncertainties from CCN: An Integrated Assessment Using Observations and a Global Model Adjoint.** RICHARD MOORE, Vlassis Karydis, Shannon Capps, Athanasios Nenes, *Georgia Institute of Technology*
2CC.9 1:00	**Comparison of Surface and Aircraft Cloud Condensation Nuclei Measurements in North Dakota.** NICOLE BART, David Delene, *University of North Dakota*
2CC.10 1:00	**Future Air Quality in a Changing Climate in the Eastern United States.** MELISSA DAY, Benjamin Murphy, Spyros Pandis, *Carnegie Mellon University*
2CC.11 1:00	**Analyses and Forecasts of Long Range Transport of Particulates to North America.** DOUGLAS WESTPHAL, Rudolf Husar, Shawn McClure, James Campbell, Edward Hyer, Walter Sessions, Wynn Eberhard, Jianglong Zhang, *US Naval Research Laboratory*
2CC.12 1:00	**Ice Nuclei Produced from Prescribed Fires in Southeastern United States.** CHRISTINA S. MCCLUSKEY, Paul DeMott, Anthony J. Prenni, Amy P. Sullivan, Gavin McMeeking, Yury Desyaterik, Gary D. Franc, Thomas C. Hill, Sonia Kreidenweis, *Colorado State University*
2CC.13 1:00	**Heterogeneous Ice Nucleation and Water Uptake by Field-Collected Atmospheric Particles Below 273 K.** BINGBING WANG, Alexander Laskin, Tobias Roedel, Mary Gilles, Ryan Moffet, Alexei Tivanski, Daniel Knopf, *Pacific Northwest National Laboratory*
2CC.14 1:00	**Wintertime Measurements of Scavenging Ratios of Sea-Salt Components for Snow and Rain in Niigata Prefecture, Japan.** SHIN OHARA, Shin-ichi Fujita, Soichiro Sugimoto, Akira Takahashi, *Central Research Institute of Electric Power Industry*

2CC.15 1:00	**Assessing the Importance of Contact Ice Nucleation.** DANIEL CZICZO, Yi-wen Huang, *MIT*
2CC.16 1:00	**Efficiency of Biological Aerosol for Contact Mode Freezing.** JOSEPH NIEHAUS, Xin Xin Woodward, Will Cantrell, *Michigan Technological University*
2CC.17 1:00	**Cloud Condensation Nuclei Measurements at a High Elevation Site: Composition and Hygroscopicity.** BETH FRIEDMAN, Alla Zelenyuk, Josef Beranek, Gourihar Kulkarni, Mikhail Pekour, Anna Gannet Hallar, Ian McCubbin, Joel A. Thornton, Daniel Cziczo, *University of Washington*
2CC.18 1:00	**Formation of Semi-solid, Oligomerized Aqueous SOA: Cloud and Aerosol Lab Simulations.** LELIA HAWKINS, Amanda Lemire, Katherine Muller, David De Haan, Molly J. Baril, Alec Rynaski, Nahzaneen Sedehi, *Harvey Mudd College*
2CC.19 1:00	**Effect of Secondary Organic Aerosol Amount and Condensational Behavior on Global Aerosol Size Distributions.** STEPHEN D'ANDREA, Dominick Spracklen, Ilona Riipinen, Jeffrey Pierce, *Dalhousie University*
2CC.20 1:00	**Optical Properties of Hematite and Fine Desert Dust Aerosols.** HANS MOOSMULLER, Allison Aiken, Mavendra Dubey, Garrett Frey, Bruce Garro, Johann Engelbrecht, *Desert Research Institute*
2CC.21 1:00	**Measurement of Halyomorpha Halys (Brown Marmorated Stink Bug) Biogenic Volatile Organic Compounds and Their Role in Secondary Aerosol Formation.** Danielle Solomon, DABRINA DUTCHER, Timothy Raymond, *Bucknell University*
2CC.22 1:00	**Modeling the Surface Tension of Complex Organic-Inorganic Solutions.** Allison Schwier, Giuliana Viglione, V. FAYE MCNEILL, *Columbia University*
2CC.23 1:00	**Organic Composition of Submicron Aerosols in Cloud and Below Cloud in La Jolla, California: the Role of Organic Aerosols in Cloud Formation.** ASHLEY CORRIGAN, Rob Modini, Anita Johnson, Janin Guzman Morales, Lynn Russell, Desiree Toom-Sauntry, Annie-Marie Macdonald, John Liggio, Richard Leaitch, Jason Schroder, Allan Bertram, Alex K. Y. Lee, Ran Zhao, Jonathan Abbatt, *Scripps Institution of Oceanography, UCSD*

2CH CONTROL TECHNOLOGY AND HOMELAND SECURITY I: POSTERS
EXHIBIT HALL

2CH.1 1:00 **Nanometer-rated Liquid Filter Evaluation using the TSI Nanoparticle Nebulizer.** TSZ YAN LING, Axel Zerrath, David Pui, *University of Minnesota*

2CH.2 1:00 **Combined Influences of Electrophoresis and Thermophoresis on Particle Deposition on a Flat Plate Exposed to a Parallel Airflow.** HANDOL LEE, Se-Jin Yook, *Hanyang University*

2CH.3 1:00 **A Cylindrical Water-Film Electrostatic Precipitator to Remove Fine Particles or SO2/NO Gases.** Bangwoo Han, Hak-Joon Kim, Dong-Keun Song, YONG-JIN KIM, *Korea Institute of Machinery and Materials*

2CH.4 1:00 **The Electrical and Particle Removal Performance of Dry and Wet Electrostatic Precipitators at a 0.7 MW-Oxygen Pulverized Coal Combustion Pilot Plant.** Hak-Joon Kim, Bangwoo Han, YONG-JIN KIM, Sang-In Keel, Jin-Han Yun, Tae-Hyung Kim, Jung-Hee Hong, *Korea Institute of Machinery and Materials*

2CH.5 1:00 **Experimental Investigation of Haze and Particle Formation by Airborne Molecular Contamination under Irradiation.** CHANG HYUK KIM, Zhili Zuo, David Pui, *University of Minnesota*

2CH.6 1:00 **Optimization of the Novel Collector for Diesel Emissions Control.** TAEWON HAN, Gediminas Mainelis, *Rutgers University*

2CH.7 1:00 **Effect of Particle and Filter Charges on Particle Loading Characteristics of Air Filter Media.** Hyun-Seol Park, WEONGYU SHIN, *Korea Institute of Energy Research*

2CH.8 1:00 **Comparison of Charging States between Electrospun and Electret Meltblown Filter Media through Filtration Test for Submicrometer Aerosol.** Hyun-Seol Park, WEONGYU SHIN, *Korea Institute of Energy Research*

2CH.9 1:00 **Effects of Spray Surfactant and Particle Charge on Respirable Dust Control.** MEI WANG, Peter Raynor, *University of Minnesota*

2CH.10 1:00 **Biosafety Level 3 Bio-Aerosol Generation System.** JOSEPH LACIRIGNOLA, Jonathan Richardson, Robert Martinez, Edward Froehlich, Andreas Gennis, Richard Vanderbeek, Mary Wade, Todd Sickler, Amber Prugh, Kevin Hung, *MIT*

2CH.11 1:00 **Room Scale Deposition of Chem/Bio Decontaminants Dispersed through Commercially Available Induction Spray Charging Nozzles.** Joshua Hubbard, Rita Betty, Daniel Lucero, Danielle Rivera, ANDRES SANCHEZ, Brandon Servantes, *Sandia National Laboratories*

2CH.12 1:00 **High-Speed High-Resolution Tracking of Micrometer Particle Detachment and Resuspension on Different Surfaces.** ASMAA KASSAB, Victor Ugaz, Maria D. King, Yassin Hassan, *Texas A&M University*

2CH.13 1:00 **Evaluation of Outdoor Surface Adhesion and Reaerosolization of Anthrax: Reaerosolization from a Sod Matrix.** JACKY ANN ROSATI ROWE, Laurie Brixey, Zora Drake-Richmon, Jonathan Thornburg, Alfred Eisner, *US EPA*

2CH.14 1:00 **Collection Efficiency of a New Portable Electrostatic Precipitator (BIODOSI) Designed for the Collection of Airborne Pathogens.** ROLAND SARDA-ESTEVE, Jean-Maxime Roux, Jean Sciare, Guillaume Delapierre, Marie-Helene Nadal, *LSCE (CEA-CNRS-UVSQ)*

2CH.15 1:00 **Development of Calibration Standards for BW Aerosol Sensors.** JESSE LINNELL, Trina Vian, Jay Eversole, Vasanthi Sivaprakasam, John Tucker, Joseph Morency, Adam Dai, *MIT*

2CO COMBUSTION II: POSTERS
EXHIBIT HALL

2CO.1 1:00 **Spatial Variation of Particle Number Emissions of a Hybrid 2010 Toyota Camry Hybrid and Comparable Conventional Vehicle.** MATT CONGER, *UVM*

2CO.2 1:00 **Morphology of Aerosol Particles at Freeway On-Ramps.** SWARUP CHINA, Neila Salvadori, Claudio Mazzoleni, *Michigan Technological University*

2CO.3 1:00 **Controlled Studies on Aerosol Formation During Biomass Combustion in a Flat Flame Reactor.** JIAXI FANG, Anna Leavey, Pratim Biswas, *Washington University in St Louis*

2CO.4 1:00 **Impact of Natural Gas Fuel Composition on PM Mass, Number, and Size Distribution from Heavy-duty Vehicles.** MARYAM HAJBABAEI, Zhongqing Zheng, Thomas D. Durbin, Kent C. Johnson, J. Wayne Miller, David R. Cocker III, Georgios Karavalakis, *University of California, Riverside*

2CO.5 1:00 **An Empirical Model for Predicting the Amount of Gaseous Emissions Based on Instantaneous Modified Combustion Efficiency (MCE).** SEYEDEHSAN HOSSEINI, Li Qi, Heejung S. Jung, J. Wayne Miller, David Weise, David R. Cocker III, *University of California, Riverside*

2CO.6 1:00 **Emission Characterization from Residential Scale Boilers Using Grass as Fuel.** SRIRAAM RAMANATHAN CHANDRASEKARAN, Philip K. Hopke, Michael Newtown, Arthur Hurlbut, *Clarkson University*

2CO.7 1:00 **Light-Duty Diesel Engine Exhaust Particle Number Distribution Differences between Petro-Diesel and Different Blends of Soy Biodiesel Fuels.** TYLER FERALIO, Britt Holmén, Jim Dunshee, *University of Vermont*

2CO.8 1:00 **Chemical Characterization of Primary and Secondary Biodiesel Exhaust Particulate Matter.** JOHN KASUMBA, Britt Holmén, *University of Vermont*

2CO.9 1:00 **Mapping the Operation of the Miniature Combustion Aerosol Standard (mini-CAST) Soot Generator.** RICHARD MOORE, Andreas Beyersdorf, Suzanne Crumeyrolle, Lee Thornhill, Edward Winstead, Luke Ziemba, Bruce Anderson, *NASA Langley Research Center*

2CO.10 1:00 **Comparison of Measurement Methods for Black Carbon in Diesel Engine Exhaust.** SANNA SAARIKOSKI, Samara Carbone, Matti Happonen, Antti Rostedt, Topi Ronkko, Jyrki Ristimäki, Jorma Keskinen, Risto Hillamo, *Finnish Meteorological Institute*

2CO.11 1:00 **Investigations of Particle Number and Gas-Phase Tailpipe Pollutants from Comparable Hybrid and Conventional Vehicles.** KAREN SENTOFF, Britt Holmén, Matt Conger, *University of Vermont*

2CO.13 1:00 **Characterize Emissions from Diesel Vehicles Equipped with Urea-Selective Catalytic Reduction (SCR) Systems.** MAHMOUD YASSINE, Ewa Dabek-Zlotorzynska, Debbie Rosenblatt, Greg Rideout, *Environment Canada*

2CO.14 1:00 **Visualization of Filter Pore Bridging with Diesel Particles from Two Different Size Distributions.** SIMON PAYNE, Nick Collings, *University of Cambridge*

2CO.15 1:00 **Aerosol Microphysical Properties from Canadian Boreal Forest Fires Measured during BORTAS.** KIMIKO SAKAMOTO, James Allan, Hugh Coe, Jonathan Taylor, Thomas Duck, Jeffrey Pierce, *Dalhousie University*

2CO.16 1:00 **Morphology of Particles Produced by Aviation Gas Turbines.** Hugo Tjong, STEVEN ROGAK, Jason Olfert, Tyler Johnson, Jonathan Symonds, Kevin Thomson, Gregory Smallwood, *University of British Columbia*

2CO.17 1:00 **In-use Emission Factors from Traditional and Upgraded Cookstoves in Rural Karnataka, India.** ANDREW GRIESHOP, Grishma Jain, Karthik Sethuraman, Ther Aung, T Pradeep, Narayanswami S, Julian Marshall, *North Carolina State University*

2CO.18 1:00 **Characterization of Soot Particle Deposition Rates and Optical Effects.** DE-LING LIU, Stephen Didziulis, Jesse Fowler, *The Aerospace Corporation*

2FM SYMPOSIUM: SYNTHESIS OF FUNCTIONAL MATERIALS USING FLAMES, PLASMAS AND OTHER AEROSOL METHODS I: POSTERS
EXHIBIT HALL

2FM.1 1:00 **Numerical Modeling of a Low-Pressure Radio Frequency Argon-Silane Plasma in Which Silicon Particles Nucleate and Grow.** PULKIT AGARWAL, Steven Girshick, *University of Minnesota*

2FM.2 1:00 **Method for Enhanced C60 Yield in Plasma-Aerosol Reactor with Liquid Nitrogen Trap.** MIKHAIL JOURAVLEV, *POSTECH*

2FM.3 1:00 **Silicon Nanocrystal Solvation: From Plasma to Stable Colloidal Dispersion.** LANCE M. WHEELER, Uwe R. Kortshagen, *University of Minnesota*

2FM.4 1:00 **Production and Characterization of Boron Nanoparticles Synthesized With a Thermal Plasma System.** WEONGYU SHIN, Steven Calder, Ozan Ugurlu, Steven Girshick, *Chungnam National University*

2FM.5 1:00 **Production and Characterization of SiO2 Nanoparticles Synthesized with an Electron Beam Irradiation System.** JIN HYOUNG KIM, Youngku Sohn, WeonGyu Shin, *Chungnam National University*

2FM.6 1:00 **Crystallizing Amorphous Silicon Nanoparticles with a Double Plasma Configuration.** NICOLAAS J. KRAMER, Rebecca J. Anthony, Aloysius A. Gunawan, K. Andre Mkhoyan, Uwe R. Kortshagen, *University of Minnesota*

2IA INDOOR AEROSOLS I: POSTERS
EXHIBIT HALL

2IA.1 1:00	**Physical Characteristics of Particle Emission from Multiple Cooking Activities.** YIJIA ZHAO, Mehdi Amouei Torkmahalleh, Iman Goldasteh, Alan Rossner, Philip K. Hopke, Andrea R. Ferro, *Clarkson University*
2IA.2 1:00	**Critical Review of Particulate Matter Emitted from Biomass Cookstoves.** YUNGANG WANG, Ashok Gadgil, *Lawrence Berkeley National Laboratory*
2IA.3 1:00	**Gravimetric Analysis of Dust Loading and Human Exposure Assessment.** YAN MA, Lisa Bramwell, Andrea R. Ferro, *Clarkson University*
2IA.4 1:00	**Characterizing Particulate Formation and Filtration in Hookah smoke.** Jessica Annonio, Mac Gilliland, Timothy Oh, Jeff Baker, CINDY DEFOREST HAUSER, *Davidson College*
2IA.5 1:00	**Applications of Real-Time Quantitative Polymerase Chain Reaction in Assessing the Pseudomonas Aeruginosa in Air Environment.** MIAO-CHING CHI, *Chang Gung University of Science and Technology, Taiwan*
2IA.6 1:00	**Initial Results of Testing for Ultrafine PM from Hardcopy Devices as per ECMA-328 and ISO/IEC 28360.** Stephany Mason, HORNER ELLIOTT, *UL - Air Quality Sciences*
2IA.7 1:00	**Calibration of the Aerodynamic Particle Sizer using an Ink Jet Aerosol Generator (IJAG).** JANA KESAVAN, Jerold Bottiger, Deborah Schepers, Andrew McFarland, *US ARMY ECBC*
2IA.8 1:00	**Adverse Human Health Effects Associated with Particulate Matter of Indoor Air.** Alfred Lawrence, Nishat Fatima, Suryakant Tripathi, SHEELU SHARMA, *Isabella Thoburn College, Lucknow, India*
2IA.9 1:00	**Numerical Study of Thermophoresis Effects on Particle Dispersion in a Turbulent Channel Flow Using the V2F Turbulence Model.** Mohammad Majlesara, Mazyar Salmanzadeh, GOODARZ AHMADI, *Shahid Bahonar University of Kerman*
2IA.10 1:00	**Numerical Study of Various Parameters on Performance of Portable Air Cleaners in a Ventilated Room.** Vahid Akbari, Mazyar Salmanzadeh, GOODARZ AHMADI, *Shahid Bahonar University of Kerman*

2IA.11 1:00 **Development of Deodorizing and Sterilizing Filter.** YOUNGJIN SEO, Seong Jin Yun, Sang Hyeon Kang, Sun Yong Lee, Gi Chun Lee, Sang Bock Lee, Il Seouk Park, *The Environment Technology Institute, Coway Co., Ltd.*

2IA.12 1:00 **Nanoparticle Loading and Agglomeration in Charged and Discharged Electret Filter Media.** JAMES MONTGOMERY, Steven Rogak, Sheldon Green, *University of British Columbia*

2IA.13 1:00 **The Indoor Environment Within Green-Renovated Homes.** KANISTHA CHATTERJEE, Tiina Reponen, Chris Schaffer, Eric Kettleson, Reshmi Indugula, Sergey A. Grinshpun, Gary Adamkiewicz, Stephen Vesper, *University of Cincinnati*

2IM INSTRUMENTATION AND METHODS II: POSTERS
EXHIBIT HALL

2IM.1 1:00 **How Many Replicates Are Sufficient for Characterizing Cookstove Emissions: A Case Study Using the Berkeley-Darfur Stove and Three Stone Fire.** YUNGANG WANG, Ashok Gadgil, Thomas Kirchstetter, *Lawrence Berkeley National Laboratory*

2IM.2 1:00 **Comprehensive Single Particle Analysis by Aerosol Mass Spectrometry with Different Desorption and Ionisation Techniques.** MARKUS OSTER, Matthias Bente-von Frowein, Jürgen Schnelle-Kreis, Ralf Zimmermann, *Helmholtz Zentrum München*

2IM.3 1:00 **Comparison of the Ion Mobility Spectra of Four Different Bipolar Chargers.** PETER KALLINGER, Gerhard Steiner, Wladyslaw Szymanski, *University of Vienna*

2IM.4 1:00 **Development of Thermal Desorption – Comprehensive Two-Dimensional Gas Chromatography Coupled with Tandem Mass Spectrometry (TD–GC×GC–MS/MS) for Determination of Trace Polycyclic Aromatic Hydrocarbons and Their Derivatives in Diesel Exhaust and Atmosphere.** AKIHIRO FUSHIMI, Shunji Hashimoto, Teruyo Ieda, Nobuo Ochiai, Yoshikatsu Takazawa, Yuji Fujitani, Kiyoshi Tanabe, *National Institute for Environmental Studies*

2IM.5 1:00 **Improving the Resolution of Low Pressure Impactor.** ANSSI ARFFMAN, Jaakko Yli-Ojanperä, Jorma Keskinen, *Tampere University of Technology*

2IM.6 1:00 **Practical Implementation of a New Coincidence Correction Technique.** AARON COLLINS, William Dick, Francisco Romay, Lin Li, *MSP Corporation*

2IM.7 1:00	**Scattering Phase Function Measurements of PSLs and Ammonium Sulfate Particles.** PAUL KEBABIAN, Timothy Onasch, Joda Wormhoudt, Andrew Freedman, *Aerodyne Research, Inc.*
2IM.8 1:00	**Application of Ambient Ion Monitoring in the Athabasca Oil Sands Region.** YU-MEI HSU, *Wood Buffalo Environmental Association*
2IM.9 1:00	**Prediction of Balloon-Borne Impactor Collection Efficiency at Different Altitudes.** Gyuho Kim, SE-JIN YOOK, Kang-Ho Ahn, *Hanyang University*
2IM.10 1:00	**Calibration of a Condensation Particle Counter by Aerosol Particle Number Concentration System with Uncertainty Analysis.** GUO-DUNG CHEN, Ta-Chang Yu, *Center for Measurement Standards, ITRI, Taiwan*
2IM.11 1:00	**Atmospheric Aerosol Measurement Using All-in-One Balloon Particle Sampler System.** Kang-Ho Ahn, HONG-KU LEE, Hee-Ram Eun, Gun-Ho Lee, Dong-Hyun Yoo, *Hanyang University*
2IM.12 1:00	**Ultrafine Particle Monitor (TSI 3031) Measurements and Evaluation in New York City.** JAMES SCHWAB, G. Garland Lala, Kenneth Demerjian, Brian P. Frank, H. Dirk Felton, Oliver Rattigan, Robert Anderson, *University at Albany, SUNY*
2IM.13 1:00	**A Hi-Volume Dichot Sampler to Collect Fine and Coarse Particulate Matter for Chemical Composition.** Guan Zhao, Philip K. Hopke, Paul A. Solomon, SURESH DHANIYALA, *Clarkson University*
2IM.14 1:00	**The Low Cut Point Viable Bioaerosol Collector: Viability of E. coli Samples Collected at 300 L/min and Archived for 15 Days.** MARIA D. KING, Ray Pierson, Asmaa Kassab, *Texas A&M University*
2IM.15 1:00	**Intercomparison of Particle Sizing Between AMS, SMPS and FMPS.** BERTO LEE, Yong J. Li, Chak K. Chan, *Hong Kong University of Science and Technology*
2IM.16 1:00	**Development of Near Continuous Sampling Methods for On Line Measurement of Chemical and Toxicological Properties of Size Fractionated PM.** PAYAM PAKBIN, Constantinos Sioutas, Nancy Daher, Dongbin Wang, *University of Southern California*
2IM.17 1:00	**Constraining Particle Bounce in an Impactor.** ADAM BATEMAN, Scot Martin, *Harvard University*

2IM.18 1:00	**Neutralization of Electrosprayed Particles via Photo-ionizer.** QIAOLING LIU, Da-Ren Chen, *Washington University*
2IM.19 1:00	**An Aerosol Detection Technique for Diesel Fuel Contaminants.** KAI XIAO, Jacob Swanson, Lin Li, Tsz Yan Ling, David Kittelson, David Pui, *University of Minnesota*
2IM.20 1:00	**High-Time Resolution Measurement of Particulate Matter Mass and Chemical Speciation.** CHEOL-HEON JEONG, Krystal J. Godri, Greg J. Evans, *SOCAAR, University of Toronto*
2IM.21 1:00	**Calibration of an Optical Particle Counter for low concentrations of 3 µm particles using a Wafer Surface Scanner.** LIN LI, Laura Windmuller, George Mulholland, Miles Owen, David Pui, *University of Minnesota*
2IM.22 1:00	**Characterization of Insoluble Submicrometer Particles in Seawater for Studying on Primary Marine Aerosol Formation.** JIYEON PARK, Miji Kim, Seung hee Han, Kihong Park, *Gwangju Institute of Science and Technology*
2IM.23 1:00	**Determination of Polycyclic Aromatic Hydrocarbons and Their Oxidation Products in Particulate Matter Using Pressurized Fluid Extraction.** RICHARD COCHRAN, Nagaraju Dongari, Haewoo Jeong, Josef Beranek, Alena Kubatova, *University of North Dakota*
2IM.25 1:00	**Smoke Test Chamber Part II: CFD Smoke Transport Simulation.** TATEH WU, Chao-Hsin Lin, Jacob Swanson, David Pui, Sheng-Chieh Chen, *The Boeing Company*
2IM.26 1:00	**Method Development and Field Evaluation of an Acidic Ultrafine Particle Detector.** Da-Wei Wang, Hai Guo, KALAM CHEUNG, Chak K. Chan, *Hong Kong Polytechnic University*
2IM.27 1:00	**Evaluation of the Classification Performance of the New Centrifugal Particle Mass Analyzer.** JONATHAN SYMONDS, *Cambustion*
2IM.28 1:00	**Quantification of Carboxylic Acid and Carbonyl Functional Groups in Organic Aerosol Infrared Absorbance Spectra.** SATOSHI TAKAHAMA, Anita Johnson, Lynn Russell, *Scripps Inst. of Oceanography; EPF Lausanne*
2IM.29 1:00	**Validating a Centrifugal Particle Mass Analyzer and Differential Mobility Spectrometer System for Mass-Mobility Measurements.** Tyler Johnson, Jonathan Symonds, JASON OLFERT, *University of Alberta*

2IM.30 1:00 **Investigation of Beta Attenuation Monitor Filter Rolls for Particulate Matter Speciation.** SURESH RAJA, Philip K. Hopke, Xia Xiaoyan, Sriraam Ramanathan Chandrasekaran, Lin Lin, Kalliat Valsaraj, Jon Klassen, James W. Sweet, *Providence Engineering and Environmental Group*

2IM.31 1:00 **Development of a Special Dust Feeder for Long-Term Aerosol Generation from Poor Flow Dust Materials.** STEPHAN GROSSE, *Topas GmbH*

2IM.32 1:00 **Two Sources of Errors in Determination of the Particle Concentration Reduction Factor of the Volatile Particle Remover Used in Legislated Vehicle Emission Measurement.** HIROMU SAKURAI, Keizo Saito, Tsuyoshi Taishi, Tetsuji Koyama, *AIST*

2IM.33 1:00 **Evaluation of a Personal Diffusion Battery.** DONNA VOSBURGH, Timothy Klein, Maura Sheehan, T. Renee Anthony, Thomas Peters, *University of Wisconsin-Whitewater*

2IM.34 1:00 **Development of a Mobile Atmospheric Reaction Chamber with Precision Thermodynamic Control for Generation of Complex Urban Air Mixtures.** JONATHAN KRUG, Michael Lewandowski, John Offenberg, Tadeusz Kleindienst, M. Ian Gilmour, *U.S. Environmental Protection Agency*

2MB SYMPOSIUM: INDOOR MICROBIOME I: POSTERS
EXHIBIT HALL

2MB.1 1:00 **The Effect of the Dust Samples Collected From Moisture Damaged Schools on the Immunological Cells: Results of HITEA-Study.** KATI HUTTUNEN, Martin Täubel, Juha Pekkanen, Anne Hyvärinen, Dick Heederik, Jan-Paul Zock, Maija-Riitta Hirvonen, *University of Eastern Finland, Kuopio, Finland*

2MB.2 1:00 **Effect of Small Scale Mechanical Vibrations on Fungal Bioaerosol Concentrations Within Confined Environments and Comparison of the Concentration With Ambient Fungal Bioaerosol Concentrations.** BYUNG UK LEE, *Konkuk University, Seoul, Republic of Korea*

2MB.4 1:00 **Coupling a Viable Bioaerosol Collector (VBAC) with Pyrosequencing to Characterize a Dynamic Bioaerosolization Event.** Juan Pedro Maestre, Andrew Hoisington, Sungwoo Bae, Maria D. King, KERRY KINNEY, *The University of Texas at Austin*

2MB.5 1:00 **Selectively Detecting Influenza Viruses in Exhaled Breath in Minutes Using Silicon Nanowire Sensor: A New Arena for Flu Diagnosis.** Fangxia Shen, Jindong Wang, Zhenqiang Xu, Yan Wu, Qi Chen, Xiaoguang Li, Jie Xu, Li Lidong, MAOSHENG YAO, Xuefeng Guo, Zhu Tong, *Peking University*

2MB.6 1:00 **Thermal Inactivation of Bioaerosol during Filtration.** HSING-WANG LI, Elizabeth Gomez, Brian Damit, Chang-Yu Wu, *University of Florida*

2MB.8 1:00 **The Floor Dust-Indoor Air Continuum: A Microbial Community Perspective.** DENINA HOSPODSKY, William Nazaroff, Jordan Peccia, *Yale University*

2MB.9 1:00 **Potential for Metabolic Activity of Bioaerosols.** Valdis Krumins, GEDIMINAS MAINELIS, Lee Kerkhof, ValaRae Partee, Donna Fennell, *Rutgers, The State University of New Jersey*

2UA URBAN AEROSOLS II: POSTERS
EXHIBIT HALL

2UA.1 1:00 **Monitoring of Air and Soil Pollution from Tailings and Mass Transport of Deposited Aerosol in Mitrovica - Republic of Kosovo.** AFRIM SYLA, Fatbardh Syla, Rizah Hajdini, *University of Prishtina Kosovo*

2UA.3 1:00 **Characterization of Organic, Metal and Trace Element PM Species and Derivation of Freeway-based Emission Rates in Los Angeles, CA.** JAMES LIACOS, Winnie Kam, Ralph Delfino, James Schauer, Constantinos Sioutas, *University of Southern California*

2UA.4 1:00 **Trends in the Mass and Chemical Species Concentrations of Coarse Particulate Matter in the Los Angeles Basin and Relation to Sources and Air Quality Regulations.** KALAM CHEUNG, Martin Shafer, James Schauer, Constantinos Sioutas, *University of Southern California*

2UA.5 1:00 **Seasonal and Spatial Variations of Individual Organic Compounds of Coarse Particulate Matter in the Los Angeles Basin.** KALAM CHEUNG, Michael Olson, Brandon Shelton, James Schauer, Constantinos Sioutas, *University of Southern California*

2UA.6 1:00	**Size-segregated Composition of Particulate Matter (PM) in Major Roadways and Surface Streets.** WINNIE KAM, James Liacos, James Schauer, Ralph Delfino, Constantinos Sioutas, *University of Southern California*
2UA.7 1:00	**Process Analysis and Sensitivity of Air Quality to Emissions in Pearl River Delta of China using CMAQ Model.** QI FAN, Wei Yu, Shaojia Fan, Jing Lan, YeRong Feng, *Sun yat-sen University*
2UA.8 1:00	**Development and Evaluation of Air Pollution Model into a Horizontal Wind Flow in Kosovo.** AFRIM SYLA, Fatbardh Syla, Erik Solbu, *University of Prishtina, Kosovo*
2UA.9 1:00	**Quantification of Ultrafine Particles with Electric Charges in On- and Near-freeway Environments.** EON LEE, Bin Xu, Yifang Zhu, *University of California, Los Angeles*
2UA.10 1:00	**Measurement of Aerosol Number Concentrations in Houston, TX.** YU JUN LEONG, Longwen Gong, Robert Griffin, Barry Lefer, *Rice University*
2UA.11 1:00	**Non-Refractory Submicron Aerosol and Black Carbon Measurements in Background, Industrial and Traffic Sites in Santiago, Chile.** FELIPE REYES, Paula Reyes, Marcela Castillo, María A. Rubio, Ernesto Gramsch, Pedro Oyola, *Universidad de Santiago de Chile*
2UA.12 1:00	**Characteristics of Carbonaceous Compounds for PM2.5 Aerosols in the Gyeongsan Area, Korea.** INJO HWANG, Yeong-Jin Jeong, Min-Jae Jeong, *Daegu University*
2UA.13 1:00	**Chemical Characteristics of Submicrometer Aerosols at Urban Gwangju in Korea Measured with Aerosol Mass Spectrometer.** Kihong Park, Jiyeon Park, Seungyong Lee, HEE-JOO CHO, Minsoo Kang, *Gwangju Institute of Science and Technology*
2UA.14 1:00	**Diurnal Variation of On-road Black Carbon Pollution on the Motor Express Ways in Seoul.** SEUNG-BOK LEE, Bo-Eun Park, Dong-Hun Lee, Seung-Jae Lee, Dae-Kwang Woo, Hyoun-Cher Jin, Gwi Nam Bae, *Korea Institute of Science and Technology*
2UA.16 1:00	**Characterization of Rural and Urban PM2.5 and PM10-2.5 Mass Concentrations in Colorado from 3 Years of Continuous Monitoring.** NICHOLAS CLEMENTS, Jana Milford, Shelly Miller, Jennifer Peel, Michael Hannigan, *University of Colorado at Boulder*

2UA.17 1:00 **Characterization of Metal and Ion Concentrations in Rural and Urban PM2.5 and PM10-2.5 in Colorado.** Nicholas Clements, JENNY EAV, Allison Moore, Kelly Albano, Jana Milford, Shelly Miller, Michael Hannigan, *University of Colorado at Boulder*

2UA.18 1:00 **Spatially Resolved Elemental Air Pollution Concentrations in Southern California.** SCOTT FRUIN, Fred Lurmann, Ed Avol, *University of Southern California*

2UA.19 1:00 **Quantifying the Uncertainty of Particulate Matter in Regional Air Quality Models in the Presence of Uncertain Emission Inventories.** WENXIAN ZHANG, Marcus Trail, Alexandra Tsimpidi, Yongtao Hu, Athanasios Nenes, Armistead Russell, *Georgia Institute of Technology*

2UA.20 1:00 **Variations in Aerosol Size and Number During DISCOVER-AQ.** EDWARD WINSTEAD, Lee Thornhill, Andreas Beyersdorf, Charles Hudgins, Luke Ziemba, Bruce Anderson, *NASA Langley Research Center*

2UA.21 1:00 **Overview of ClearfLo Detling Site: Study of Aerosol Sources and Processing at a Rural Site Southeast of London.** LEAH WILLIAMS, Scott Herndon, John Jayne, Andrew Freedman, William Brooks, Jonathan Franklin, Paola Massoli, Edward Fortner, Puneet Chhabra, Mark Zahniser, Harald Stark, Timothy Onasch, Douglas Worsnop, Felipe Lopez-Hilfiker, Claudia Mohr, Joel A. Thornton, Nga Lee Ng, Lu Xu, Matthew Kollman, Berk Knighton, Mavendra Dubey, Allison Aiken, Kyle Gorkowski, Timothy Martin, Richard Coulter, *Aerodyne Research, Inc.*

2UA.22 1:00 **Numerical Study of Dust Deposition and Accumulation at the Entrance of Electrostatic Precipitators with a Bend.** Sadegh Naderinejad, Mazyar Salmanzadeh, GOODARZ AHMADI, Mohammad Yavarzadeh, *Shahid Bahonar University of Kerman*

2UA.23 1:00 **European Air Pollution Hot Spot in Winter 2012: Middle Scale PM2.5 Variability.** JAN HOVORKA, Michal Grégr, Martin Braniš, Petra Pokorná, Alexandra Baranová, *Charles University in Prague*

2UA.24 1:00 **European Air Pollution Hot Spot in Winter 2012: Distribution of PAH with Aerosol Particle Size.** JAN HOVORKA, Jan Topinka, Jan Bendl, Alexandra Baranová, Petra Pokorná, Martin Braniš, *Charles University in Prague*

2UA.25 1:00 **Spatial Distribution of Black Carbon, Polycyclic Aromatic Hydrocarbons and Volatile Organic Compounds During the Wintertime in Greater Pittsburgh Area.** YI TAN, Rawad Saleh, Eric Lipsky, Albert A. Presto, Neil Donahue, Allen Robinson, *Carnegie Mellon University*

2UA.26 1:00 **Characterization of Carbonaceous Particle Emissions by Mobile Sources in Sao Paulo (Brazil).** Maria de Fatima Andrade, Adalgiza Fornaro, Beatriz Oyama, Rita Ynoue, PIERRE HERCKES, *Arizona State University*

2UA.27 1:00 **Seasonal Variation of Organic Aerosols at Urban Gwangju, Korea Measured With Aerosol Mass Spectrometer.** SEUNGYONG LEE, Jiyeon Park, Kihong Park, *Aerosol Technology and Monitoring Lab., GIST*

Tuesday 3:00 PM - 3:30 PM
Coffee Break

Tuesday 3:30 PM - 5:00 PM
Session 3: Platform

3AC AEROSOL CHEMISTRY III
NICOLLET A

Cari Dutcher and Wayne Chang, chairs

3AC.1 3:30 **Comparison of Laboratory Generated Secondary Organic Aerosol from Oxidation of Biogenic Volatile Organic Compound Mixtures and Remote Ambient Samples Using High Resolution Mass Spectrometry.** IVAN KOURTCHEV, Stephen Fuller, Juho Aalto, Robert Healy, Taina Ruuskanen, Willy Maenhaut, John Wenger, Markku Kulmala, Markus Kalberer, *University of Cambridge*

3AC.2 3:45 **Modeling Nanoparticle Growth in Biogenic VOC+Nitrate Radical Chamber Studies.** KELLEY C. BARSANTI, Juliane L. Fry, Danielle C Draper, John Ortega, Steven Brown, Peter Edwards, Michael J. Lawler, Paul M Winkler, Peter McMurry, James N. Smith, *Portland State University*

3AC.3 4:00 **An Evaluation of the Mixing and Evaporation of Organic Aerosol Components.** CHRISTINE LOZA, Matthew Coggon, Jill Craven, Wilton Mui, Katherine Schilling, Rebecca Schwantes, Lindsay Yee, Xuan Zhang, Richard Flagan, John Seinfeld, *Caltech*

3AC.4 4:15 **Laboratory Measurements of Organic Aerosol Chemical Composition: Primary Emissions and Secondary Formation from Biomass Combustion.** BRENT WILLIAMS, Raul Martinez, Peter Mellott, Dhruv Mitroo, Yaping Zhang, Pratim Biswas, Andrew Lambe, Kenneth Christian, William Brune, Thorsten Hohaus, Manjula Canagaratna, John Jayne, Douglas Worsnop, *Washington University in St. Louis*

3AC.5 4:30 **Effect of Temperature, Humidity, and Background Aerosol Concentrations on Organic Aerosol Emissions from Gasoline and Diesel Fueled Motor Vehicles.** Toshihiro Kuwayama, Isabel Faria, Peter Green, MICHAEL KLEEMAN, *UC Davis*

3AC.6 4:45 **The Role of the Precursor's Volatility and Structure on Secondary Organic Aerosol Formation: From Experiments to Models.** SHANTANU JATHAR, Marissa Miracolo, Daniel S. Tkacik, Peter Adams, Allen Robinson, *Carnegie Mellon University*

3AE AEROSOL EXPOSURE III
LAKE SUPERIOR

Maria D. King and Seema Bhangar, chairs

3AE.1 3:30 **Paper-Based Microfluidic Devices for Aerosol Exposure Assessment.** David Cate, Josephine Cunningham, Mallory Mentele, Wijitar Dungchai, Yupaporn Sameenoi, Kirsten Koehler, Charles Henry, JOHN VOLCKENS, *Colorado State University*

3AE.2 3:45 **An Aerosol Sampler to Estimate Regional Deposition within the Human Respiratory Tract.** KIRSTEN KOEHLER, John Volckens, *Colorado State University*

3AE.3 4:00 **Evaluation of Real-time Instruments Used to Monitor PM in a Green Building.** ZUOCHENG WANG, Gediminas Mainelis, Leonardo Calderon, Clinton J. Andrews, Richard Wener, Jennifer Senick, MaryAnn Sorensen-Allacci, *Rutgers University*

3AE.4 4:15 **Real-Time Measurements of Direct and Catalytic Aerosol Oxidative Activity.** Yupaporn Sameenoi, Meghan Mensack, Kirsten Koehler, Jeff Shapiro, Jeffrey L. Collett, John Volckens, CHARLES HENRY, *Colorado State University*

3AE.5 4:30 **Nanoparticle Characterization for Exposure Studies.** KAARLE HAMERI, Joonas Koivisto, *University of Helsinki*

3AE.6 4:45 **Facial Effect on Regional Deposition of Aerosols in Human Upper Airway System in Calm Air Condition.** Arash Naseri, Pejman Farhadi Ghalati, Omid Abouali, GOODARZ AHMADI, *Shiraz University*

3AN SYMPOSIUM: AEROSOL NUCLEATION: FROM CLUSTERS TO NANOPARTICLES II

REGENCY ROOM

Lea Hildebrandt Ruiz and Chris Hogan, chairs

3AN.1 3:30 **The vSANC – An Instrument for Basic Nucleation Studies and Ambient Measurements of Nanoparticles.** TAMARA PINTERICH, Paul M Winkler, Paul E. Wagner, Aron Vrtala, *Universitaet Wien, Vienna, Austria*

3AN.2 3:45 **Evidence for Surface Freezing in Supercooled n-Alkane Nanodroplets.** VIRAJ MODAK, Harshad Pathak, Mitchell Thayer, Sherwin Singer, Barbara Wyslouzil, *The Ohio State University*

3AN.3 4:00 **Monomer, Clusters, Liquid: An Integrated Study of Methanol Condensation.** BARBARA WYSLOUZIL, Hartawan Laksmono, Shinobu Tanimura, Heather Allen, Gerald Wilemski, Mark Zahniser, Joanne Shorter, David Nelson, J. Barry McManus, *The Ohio State University*

3AN.4 4:15 **Sulfuric Acid Nucleation: A Systematic Study of the Effect of Bases.** WALKER GLASOE, Baradan Panta, Juliana Zollner, David Hanson, *Augsburg College*

3AN.5 4:30 **DMA-MS Measurement of Water Vapor Uptake by Charged Clusters Under Sub-Saturated Conditions.** DEREK OBERREIT, Carlos Larriba, Peter McMurry, Christopher Hogan Jr., *University of Minnesota*

3AN.6 4:45 **The Roles of Gaseous Oxidation Products in Organic Nucleation from Ozonolysis of Atmospheric Terpenes.** JUN ZHAO, Paul M Winkler, John Ortega, Peter McMurry, James N. Smith, *National Center for Atmospheric Research*

3CC AEROSOLS, CLOUDS, AND CLIMATE III
NICOLLET B/C

Athanasios Nenes and Markus Petters, chairs

3CC.1 3:30 **Causes of the Seasonal Variation of Cloud Effective Radii over Oceans.** HANNELE KORHONEN, Anton Laakso, *Finnish Meteorological Institute*

3CC.2 3:45 **Using a Global Model Adjoint to Unravel the Footprint of Spatially-Distributed Emissions on Cloud Properties.** VLASSIS KARYDIS, Shannon Capps, Daven Henze, Athanasios Nenes, *Georgia Institute of Technology*

3CC.3 4:00 **Evaluation of the Sectional Aerosol Model SALSA within the Aerosol-Climate Model ECHAM5-HAM.** HANNELE KORHONEN, Tommi Bergman, Veli-Matti Kerminen, Kari Lehtinen, Risto Makkonen, Antti Arola, Tero Mielonen, Sami Romakkaniemi, Markku Kulmala, Harri Kokkola, *Finnish Meteorological Institute*

3CC.4 4:15 **The Importance of the Cloud Processing of Aerosols in Predicting in Aerosol Nucleation, Growth and CCN.** JEFFREY PIERCE, Betty Croft, *Dalhousie University*

3CC.5 4:30 **Kinetics of Droplet Growth Observed in Recent Field Campaigns.** FAN MEI, Jian Wang, *Brookhaven National Laboratory*

3CC.6 4:45 **Eastern Pacific Emitted Aerosol Cloud Experiment (E-PEACE).** LYNN RUSSELL, Armin Sorooshian, John Seinfeld, Bruce Albrecht, Athanasios Nenes, Lars Ahlm, Yi-Chun Chen, Matthew Coggon, Jill Craven, Richard Flagan, Amanda Frossard, Haflidi Jonsson, Eunsil Jung, Jack Lin, Andrew Metcalf, Rob Modini, Johannes Muelmenstaedt, Greg Roberts, Taylor Shingler, Siwon Song, Edwin Sumargo, Zhen Wang, Anna Wonaschutz, *Scripps Institution of Oceanography*

3CO COMBUSTION III
MIRAGE ROOM

Wei-Ning Wang and Ying Li, chairs

3CO.1 3:30 **Dynamic Changes in the Aerosol Composition and Concentration During Different Burning Phases of Wood Combustion.** MICHAEL ELSASSER, Christian Busch, Jürgen Orasche, Hans Hartmann, Jürgen Schnelle-Kreis, Ralf Zimmermann, *Helmholtz Zentrum München*

3CO.2 3:45 **Polycyclic Aromatic Hydrocarbon Emissions in Transient Wood Combustion.** Axel Eriksson, Erik, Z Nordin, Robin Nyström, Esbjörn Pettersson, Christoffer Bergvall, Roger Westerholm, Erik Swietlicki, Christoffer Boman, JOAKIM PAGELS, *Lund University, Lund, Sweden*

3CO.3 4:00 **Particulate Matter and Other Criteria Pollutants Reduced by Algae Fuel in Marine Vessels.** M. Yusuf Khan, William A. Welch, Robert L. Russell, David R. Cocker III, MARYAM HAJBABAEI, *UC Riverside*

3CO.4 4:15 **Fate of Nanomaterials and Byproducts During Combustion.** ERIC VEJERANO, Amara Holder, Linsey Marr, *Virginia Tech*

3CO.5 4:30 **Detailed Characterization of Shape-Selected Fractal Soot Particles.** ALLA ZELENYUK, Dan Imre, Josef Beranek, Paul Reitz, *Pacific Northwest National Laboratory*

3CO.6 4:45 **Pro-inflammatory Responses of Diesel Engine Exhaust Particles - Impact of Organic Compounds.** ANNIKE IRENE TOTLANDSDAL, Alena Kubatova, Johan Øvrevik, Richard Cochran, Jan Inge Herseth, Anette Kocbach Bølling, Per E Schwarze, Flemming R Cassee, Edel Lilleaas, Magne Refsnes, Jørn A Holme, Marit Låg, *Norwegian Institute of Public Health, Norway*

3UA URBAN AEROSOLS III

NICOLLET D

Jay Slowik and Nancy Daher, chairs

3UA.1 3:30 **Long-term Measurements of Aerosol Particle Composition with an Aerosol Chemical Speciation Monitor in Megacity Beijing, China.** YELE SUN, Zifa Wang, Ting Yang, Xiaole Pan, Pingqing Fu, Huabin Dong, Jie Li, Ping Chen, John Jayne, *Institute of Atmospheric Physics, Chinese Academy of Science*

3UA.2 3:45 **Long-Term Aerosol Mass Spectrometric Measurements in Zurich.** Francesco Canonaco, JAY SLOWIK, Andre Prévôt, Urs Baltensperger, *Paul Scherrer Institute*

3UA.3 4:00 **PMF Analysis of Urban and Transported Aerosols in Fukuoka, Japan.** AKINORI TAKAMI, Takao Miyoshi, Satoshi Irei, Keiichiro Hara, Masahiko Hayashi, Naoki Kaneyasu, *NIES*

3UA.4 4:15 **Chemical Characterization of Sub-micron Aerosol Particles with the ACSM in Santiago, Chile.** SAMARA CARBONE, Sanna Saarikoski, Felipe Reyes, Paula Reyes, Marcela Castillo, Pedro Oyola, John Jayne, Risto Hillamo, *Finnish Meteorological Institute*

3UA.5 4:30	**Characteristics of Ambient Aerosol at a Suburban Site in Hong Kong During Springtime Using Aerosol Mass Spectrometry.** BERTO LEE, Yong J. Li, Chak K. Chan, Jian Zhen Yu, Peter Louie, *Hong Kong University of Science and Technology*
3UA.6 4:45	**Chemical Characterization and Redox Activity of Fine and Coarse Particulate Matter in Milan, Italy.** NANCY DAHER, Ario Ruprecht, Giovanni Invernizzi, Cinzia De Marco, Justin Miller-Schulze, Jong Bae Heo, Martin Shafer, Brandon Shelton, James Schauer, Constantinos Sioutas, *University of Southern California*

Tuesday 5:00 PM - 6:00 PM
Working Group Meetings 1

Tuesday 6:00 PM - 8:00 PM
Welcome Reception

Wednesday 8:00 AM - 9:15 AM
Plenary II: AEESP Lecture

8:00	**AEESP Lecture: Embracing Complexity: Deciphering Origins and Transformations of Atmospheric Organics through Speciated Measurements** Allen Goldstein. *University of California, Berkeley.*
	Moderator Cliff Davidson. *Syracuse University*
9:00	**Whitby Award and Liu Award Presentations** Sonia Kreidenweis, Awards Committee Chair. *Colorado State University*

Wednesday 9:00 AM - 5:00 PM
Exhibits Open

Wednesday 9:15 AM - 9:45 AM
Coffee Break

Wednesday 9:45 AM - 11:30 AM
Session 4: Platform

4AC AEROSOL CHEMISTRY IV
NICOLLET A

Brent Williams and Eben Cross, chairs

4AC.1 9:45 **Thermodynamic Properties and Evaporation Kinetics of DOP, DEHS, and Oleic Acid Aerosols.** ALAN SHIHADEH, Sarah Safieddine, Rawad Saleh, Andrey Khlystov, *American University of Beirut*

4AC.2 10:00 **The Importance of Relative Humidity and Particle Phase on the Oxidation of Unsaturated Compounds in Aerosols.** PETER GALLIMORE, Francis Pope, Pattanun Achakulwisut, Jason Lee, Stephen Fuller, Vanesa Carrascon, James F. Davies, Alex Björkegren, David Spring, Markus Kalberer, *University of Cambridge*

4AC.3 10:15 **Ammonia Uptake by Pure and Secondary Organic Aerosol Particles: Dependence on Particle Phase.** SCOT MARTIN, Mikinori Kuwata, Ronan Lebouteiller, *Harvard University*

4AC.4 10:30 **Deliquescence, Efflorescence, and Phase Miscibility of Mixed Particles of Aqueous Ammonium Sulfate and Isoprene-Derived Secondary Organic Material.** MACKENZIE SMITH, Allan Bertram, Scot Martin, *Harvard University*

4AC.5 10:45 **Equilibration Time Scales of Secondary Organic Aerosol from Alpha-pinene Ozonolysis.** RAWAD SALEH, Allen Robinson, *Carnegie Mellon University*

4AC.6 11:00 **Novel Experiments Give Quantitative Measure of Atmospheric Particle Viscosities.** LINDSAY RENBAUM-WOLFF, Allan Bertram, Adam Bateman, Mikinori Kuwata, Scot Martin, *University of British Columbia*

4AC.7 11:15 **Comparison of Heterogeneous Oxidation Products of Branched and Normal Alkanes, as Characterized by Two-dimensional Gas Chromatography with Vacuum Ultraviolet High-Resolution Time-of-Flight Mass Spectrometry.** CHRIS RUEHL, Theodora Nah, Gabriel Isaacman, David Worton, Arthur Chan, Katheryn Kolesar, Christopher Cappa, Allen H. Goldstein, Kevin Wilson, *University of California, Berkeley*

4AN SYMPOSIUM: AEROSOL NUCLEATION: FROM CLUSTERS TO NANOPARTICLES III

NICOLLET B/C

Chongai Kuang and Jeff Pierce, chairs

4AN.1 9:45 **Computational Chemistry of Condensing and Clustering Vapors.** THEO KURTEN, Neil Donahue, Ditte Linde Thomsen, Henrik Kjaergaard, Joseph Lane, Solvejg Jørgensen, Hanna Vehkamäki, *University of Helsinki*

4AN.2 10:00 **Equilibrium Size Distributions of Neutral and Negatively Charged Sulfuric Acid-Water Clusters from Self-Consistent Thermodynamic Tables.** JAMISON A. SMITH, Karl D. Froyd, Owen B. Toon, *University of Colorado*

4AN.3 10:15 **Structure and Energetics of Uncharged Sulfuric Acid Clusters with Ammonia and Amines.** JOSEPH DEPALMA, Douglas Doren, Murray Johnston, *University of Delaware*

4AN.4 10:30 **Insights from Cluster Thermodynamics: Atmospheric Conditions that Promote Nucleation for a Variety of Neutral and Ionic Systems.** KARL D. FROYD, *National Oceanic & Atmospheric Administration*

4AN.5 10:45 **First-Principles Molecular Dynamics Simulation of Sulfuric Acid - Ammonia/Dimethylamine Clusters.** VILLE LOUKONEN, I-Feng William Kuo, Matt J. McGrath, Hanna Vehkamäki, *University of Helsinki*

4AN.6 11:00 **Nucleation Free Energy Landscapes: Sensitivity to Force Fields and Influence of Salt Nanoparticles.** SAMUEL KEASLER, Christopher Hogan Jr., Ilja Siepmann, *University of Minnesota*

4AN.7 11:15 **Molecular Dynamics Simulations of Aqueous-Organic Binary and Ternary Nanodroplets.** Fawaz Hrahsheh, GERALD WILEMSKI, *Missouri University of Science and Technology*

4CH CONTROL TECHNOLOGY AND HOMELAND SECURITY II
MIRAGE ROOM

Emanuele Cauda and Marit Meyer, chairs

4CH.1 10:15 **Aerosol Test Particles with DNA Barcodes.** RUTH N. UDEY, Elizabeth K. Wheeler, Brian R. Baker, A. Daniel Jones, George R. Farquar, *Lawrence Livermore National Laboratory*

4CH.2 10:30 **The Multiwavelength Aerosol Signature Testbed for BSL3 (MAST-3) Program.** JONATHAN RICHARDSON, Robert Martinez, Joseph Lacirignola, Edward Froehlich, Andreas Gennis, Richard Vanderbeek, Mary Wade, Todd Sickler, Amber Prugh, Kevin Hung, *MIT*

4CH.3 10:45 **High Temperature Short-Time Infrared Disinfection of Bioaerosols.** BRIAN DAMIT, Chang-Yu Wu, *University of Florida*

4CH.4 11:00 **Collection of Aerosolized Bacterial Endospores from Post-Explosion/Combustion Air Environments.** SERGEY A. GRINSHPUN, Michael Yermakov, Reshmi Indugula, Atin Adhikari, Tiina Reponen, *University of Cincinnati*

4CH.5 11:15 **Use of Atmospheric Pressure Non-thermal Plasma for Rapid Bioaerosol Inactivation.** Yan Wu, Yongdong Liang, Ke Sun, Qi Chen, Fangxia Shen, Jue Zhang, MAOSHENG YAO, Tong Zhu, Jing Fang, *Peking University*

4CH.6 9:45 **Experimental Study of Agglomerate Particle Filtration Using Flat Filter Media.** QISHENG OU, Da-Ren Chen, *Washington University*

4CH.7 10:00 **A Thermal Precipitator for Fire Characterization Research.** MARIT MEYER, Victoria Bryg, *NASA Glenn Research Center*

4IA INDOOR AEROSOLS II
LAKE SUPERIOR

Jeffrey Siegel and Josh Apte, chairs

4IA.1 9:45 **Ultrafine Particle Removal by Central Heating and Air-Conditioning Filters in a Test House.** BRENT STEPHENS, Jeffrey Siegel, *Illinois Institute of Technology*

4IA.2 10:00 **Experimental Comparison of Dust Resuspension Using a Consistent Test Mechanism.** YILIN TIAN, Kyung Sul, Jing Qian, Andrea R. Ferro, *Clarkson University*

4IA.3 10:15 **Ozone-initiated Oxidation of Indoor Organics and its Potential Health Impact.** Guang Zeng, Hai Pham, Vu Luong Duc, YONG LIU, *University of Colorado Denver*

4IA.4 10:30 **Formation, Morphology and Hygroscopic Growth of Indoor Aerosols Formed by Oxidation of Household Products.** Andrew Hritz, Dabrina Dutcher, TIMOTHY RAYMOND, *Bucknell University*

4IA.5 10:45 **Particle Detachment, Resuspension and Dispersion Due to Human Induced Flow Field in Gate Cycle.** IMAN GOLDASTEH, Yilin Tian, Kyung Sul, Goodarz Ahmadi, Andrea R. Ferro, *Clarkson University*

4IA.6 11:00 **Identifying the Indoor Particle Resuspension Mechanism for Human Walking.** KYUNG SUL, Iman Goldasteh, Pooya Kabiri, Douglas Bohl, Goodarz Ahmadi, Andrea R. Ferro, *Clarkson University*

4IA.7 11:15 **Effect of Store Type, Location and Season on the Microorganisms Captured in HVAC Filter Dust Recovered from Retail Facilities.** ANDREW HOISINGTON, Juan Pedro Maestre, Sungwoo Bae, Jeffrey Siegel, Kerry Kinney, *The University of Texas at Austin*

4IM INSTRUMENTATION AND METHODS III
REGENCY ROOM

Jason Surratt and Reddy Yatavelli, chairs

4IM.1 9:45 **Characterization of Organic Aerosol Using Electrospray Ionization Coupled to Ion Mobility Spectrometry High-Resolution Time-of-Flight Mass Spectrometry (ESI-IMS-HR-TOFMS).** JASON SURRATT, Ying-Hsuan Lin, Joel Kimmel, Manjula Canagaratna, Richard Knochenmuss, Douglas Worsnop, *University of North Carolina at Chapel Hill*

4IM.2 10:00 **Atmospheric Amine Measurements with CI-APi-TOF.** TUIJA JOKINEN, Mikko Sipilä, Heikki Junninen, Mikael Ehn, Gustaf Lönn, Jani Hakala, Roy Lee III Mauldin, Tuukka Petäjä, Markku Kulmala, Douglas Worsnop, *University of Helsinki*

4IM.3 10:15 **Direct Surface Analysis of Size- and Time- Resolved Organic Aerosol.** STEPHEN FULLER, Markus Kalberer, Yongjing Zhao, Anthony Wexler, *University of Cambridge*

4IM.4 10:30 **Introducing the Volatility and Polarity Separator (VAPS) for Total Organic Aerosol Characterization.** RAUL MARTINEZ, Brent Williams, Yaping Zhang, Peter Mellott, Nathan Kreisberg, Susanne Hering, David Worton, Allen H. Goldstein, Thorsten Hohaus, Manjula Canagaratna, Donna Sueper, John Jayne, Douglas Worsnop, *Washington University*

4IM.5 10:45 **Advanced Analysis Procedures of Ambient Organic Aerosol from Thermal Desorption – Mass Spectrometry Measurement Techniques.** YAPING ZHANG, Brent Williams, Raul Martinez, Manjula Canagaratna, Douglas Worsnop, Allen H. Goldstein, Ingrid Ulbrich, Donna Sueper, Jose-Luis Jimenez, *Washington University*

4IM.6 11:00 **A Hybrid Impactor-Filter Collector Extends Semi- and Non-volatile Organic Aerosol Speciation by Thermal Desorption Aerosol Gas Chromatography (TAG).** NATHAN KREISBERG, Yunliang Zhao, Chris Ruehl, Allen H. Goldstein, Susanne Hering, *Aerosol Dynamics Inc.*

4IM.7 11:15 **Influence and Efficiency of a Catalytic Stripper in Organic Carbon Removal from Laboratory Generated Soot Aerosols.** JELICA PAVLOVIC, John Kinsey, *ORISE U.S.EPA*

4UA URBAN AEROSOLS IV
NICOLLET D

Ng Nga Lee (Sally) and Pierre Herckes, chairs

4UA.1 9:45 **Aerosol Composition at a Rural Site Southeast of London Measured by High Resolution Mass Spectrometry.** NGA LEE NG, Lu Xu, Matthew Kollman, John Jayne, Scott Herndon, William Brooks, Leah Williams, Paola Massoli, Edward Fortner, Puneet Chhabra, Timothy Onasch, Douglas Worsnop, *Georgia Institute of Technology*

4UA.2 10:00 **Optical Characterization of Aerosols at a Rural Site in Southeast England During the Winter ClearfLo Campaign.** Paola Massoli, Allison Aiken, Kyle Gorkowski, Scott Herndon, Edward Fortner, John Jayne, William Brooks, LEAH WILLIAMS, Puneet Chhabra, Nga Lee Ng, Timothy Onasch, Jonathan Franklin, Mavendra Dubey, Douglas Worsnop, Andrew Freedman, *Aerodyne Research, Inc*

4UA.3 10:15 **Seasonal Comparison of Comprehensive Aerosol Measurements in London During ClearfLo.** DOMINIQUE YOUNG, James Allan, Paul Williams, Michael Flynn, Dantong Liu, James Whitehead, Niall Robinson, Andre Prévôt, Suzanne Visser, Markus Furger, Martin Gallagher, Hugh Coe, *University of Manchester*

4UA.4 10:30 **Fog Processing of Particulate Molecular Marker Species.** Jershon Eagar, Franz Ehrenhauser, Youliang Wang, James Hutchings, Aurelie Marcotte, Olivier Delhomme, Raghava Kommalapati, Mary Wornat, Kalliat Valsaraj, PIERRE HERCKES, *Arizona State University*

4UA.5 10:45 **Air Quality Impacts of a Scheduled 36-hour Closure of a Major Highway.** DAVID QUIROS, Qunfang Zhang, Suzanne Paulson, Rui Wang, Wonsik Choi, Arthur Winer, Yifang Zhu, *University of California Los Angeles*

4UA.6 11:00 **MOUDI Size-Resolved Measurements of Elemental and Brown Carbon and Their Contributions to Light Absorption Based on Mie Theory Calculations.** JIUMENG LIU, Michael Bergin, Rodney Weber, *Georgia Institute of Technology*

4UA.7 11:15 **Investigation of Ultrafine Particle Deposition onto Vegetation Branches in a Wind Tunnel.** Ming-Yeng Lin, Gabriel Katul, ANDREY KHLYSTOV, *Research Triangle Institute*

Wednesday 1:00 PM - 3:00 PM
Session 5: Platform

5AN SYMPOSIUM: AEROSOL NUCLEATION: FROM CLUSTERS TO NANOPARTICLES IV
NICOLLET B/C

Kari Lehtinen and James Smith, chairs

5AN.1 1:00 **An Acid-Base Chemical Reaction Model for Nucleation Rates in the Polluted Boundary Layer.** MODI CHEN, Mari Titcombe, Jingkun Jiang, Jun Zhao, Chongai Kuang, Ilja Siepmann, David Hanson, Peter McMurry, *University of Minnesota*

5AN.2 1:15 **Dimethylamine-Sulfuric Acid Clustering Can Explain Observed Atmospheric New Particle Formation.** Ismael Kenneth Ortega Colomer, Oona Kupiainen, Tinja Olenius, Matt J. McGrath, Theo Kurten, VILLE LOUKONEN, Taina Yli-Juuti, Ilona Riipinen, Johannes Leppä, Markku Kulmala, Hanna Vehkamäki, *University of Helsinki*

5AN.3 1:30 **Flux Induced Growth of Sub-Kelvin Nano-Particles by Organic Vapor.** JIAN WANG, Robert McGraw, Chongai Kuang, *Brookhaven National Laboratory*

5AN.4 1:45 **Using Simulated Particle Formation Events for Testing and Improving Event Analysis Tools.** KARI LEHTINEN, Hannele Korhonen, Johannes Leppä, Veli-Matti Kerminen, *Finnish Meteorological Institute, Kuopio, Finland*

5AN.5 2:00 **Potential Factors Limiting Growth of Nucleated Particles into Cloud Condensation Nuclei.** DANIEL WESTERVELT, Jeffrey Pierce, Peter Adams, *Carnegie Mellon University*

5AN.6 2:15 **Nanoparticle Chemical Composition During New Particle Formation.** BRYAN R. BZDEK, M. Ross Pennington, Murray Johnston, *University of Delaware*

5AN.7 2:30 **The Role of Nitrate in New Particle Formation: Results from Ambient Measurements and Models.** LEA HILDEBRANDT RUIZ, James N. Smith, Ilona Riipinen, Kelley C. Barsanti, Juliane L. Fry, Taina Yli-Juuti, Tuukka Petäjä, Markku Kulmala, Peter McMurry, *National Center for Atmospheric Research*

5AN.8 2:45 **The Effect of Coal-Fired Power Plant SO2, NOX Control Technologies and Background Particle Concentrations on Aerosol Nucleation and Growth in Source Plumes.** CHANTELLE LONSDALE, Robin Stevens, Charles Brock, Paul Makar, Jeffrey Pierce, *Dalhousie University*

5CA CARBONACEOUS AEROSOLS IN THE ATMOSPHERE I

NICOLLET A

Alla Zelenyuk and Betsy Stone, chairs

5CA.1 1:00 **Organic Aerosols: What Happens Where and How Fast.** NEIL DONAHUE, *Carnegie Mellon University*

5CA.2 1:15 **Molecular Composition of Water-Soluble Organic Carbon in Nonurban Aerosols.** LYNN MAZZOLENI, Parichehr Saranjampour, Megan Dalbec, Vera Samburova, Anna Gannet Hallar, Barbara Zielinska, Douglas Lowenthal, *Michigan Technological University*

5CA.3 1:30 **Evaluating the Degree of Oxygenation of Organic Aerosols During Foggy Days and Hazy Days in Springtime in Hong Kong Using High-Resolution Time-of-Flight Aerosol Mass Spectrometry (HR-ToF-AMS).** YONG J. LI, Berto Lee, Chak K. Chan, *Hong Kong University of Science and Technology*

5CA.4 1:45 **Comparison of Biomass Burning Organic Aerosol Mixing Ratios and Their Evolution With Aging.** MATTHEW JOLLEYS, Hugh Coe, Gordon McFiggans, Gerard Capes, James Allan, Jonathan Crosier, Paul Williams, Grant Allen, Keith Bower, Jose-Luis Jimenez, *University of Manchester*

5CA.5 2:00 **Aging of Biomass Burning Aerosols: Comparison of Smog Chamber Experiments with Ambient Aerosols.** JEFFREY L. COLLETT, Yury Desyaterik, Amy P. Sullivan, Christopher Hennigan, Allen Robinson, Amanda Holden, Sonia Kreidenweis, Bret Schichtel, *Colorado State University*

5CA.6 2:15 **Probing Complex Hydrocarbon Mixtures in Atmospheric Organic Aerosols: Insights into Sources and Mechanisms.** ARTHUR CHAN, Gabriel Isaacman, David Worton, Chris Ruehl, Katherine Schilling, John Seinfeld, Kevin Wilson, Allen H. Goldstein, *University of California, Berkeley*

5CA.7 2:30 **Density and Elemental Ratios of Secondary Organic Aerosol: Application of a Density Prediction Method.** SHUNSUKE NAKAO, Ping Tang, Xiaochen Tang, Christopher Clark, Li Qi, Eric Seo, Chia-Li Chen, Akua Asa-Awuku, David R. Cocker III, *University of California, Riverside*

5CA.8 2:45 **Investigation of Organic Aerosol Wet Removal during Fog Events.** STEFANIA GILARDONI, Lara Giulianelli, Matteo Rinaldi, Vanes Poluzzi, Silvia Ferrari, Paola Massoli, M. Cristina Facchini, *ISAC-CNR*

5FM SYMPOSIUM: SYNTHESIS OF FUNCTIONAL MATERIALS USING FLAMES, PLASMAS AND OTHER AEROSOL METHODS II

MIRAGE ROOM

Steven Girshick and Gerhard Kasper, chairs

5FM.1 1:00 **Flame Synthesis of Aerosol Gels.** RAJAN CHAKRABARTY, Christopher Stipe, Hans Moosmuller, *Desert Research Institute*

5FM.2 1:15 **Aerosol Growth and Potential Applications of Carbon Nanostructures.** Ji Hoon Kim, Kook Joo Moon, Ji Young Ahn, SOO H. KIM, *Pusan National University*

5FM.3 1:30 **Combustion-Driven One Step Synthesis of Non-Oxide Nanoparticle Hybrid Films in a High Temperature Reducing Jet Reactor.** Munish Sharma, Raymond Buchner, William Scharmach, Vasilis Papavassiliou, MARK SWIHART, *University at Buffalo (SUNY)*

5FM.4 1:45 **Effect of Shape of Au Nanoparticles on the Photoelectrochemical Water-Splitting Performance of Au-TiO2 Nanocomposite Thin Films.** TANDEEP CHADHA, Jinho Park, Woo-Jin An, Pratim Biswas, *Washington University*

5FM.5 2:00 **Nanoparticle Synthesis and In-Situ In-Flight Functionalization in an Inductively Coupled Plasma Reactor.** CHRISTOPHE DELVAL, Marc Leparoux, Christian Jaeggi, *Empa, Laboratory for Advanced Materials Processing, Feuerwer*

5FM.6 2:15 **Numerical Study of Growth Process of Binary Alloy Nanopowders in Thermal Plasma Synthesis.** MASAYA SHIGETA, Takayuki Watanabe, Toyonobu Yoshida, *Tohoku University*

5FM.7 2:30 **Plasma-Produced Silicon Nanocrystals for Light-Emitting Devices.** REBECCA J. ANTHONY, Kai-Yuan Cheng, Zachary C. Holman, Russell J. Holmes, Uwe R. Kortshagen, *University of Minnesota*

5FM.8 2:45 **Aerosol Synthesis of Superparamagnetic Silica-Coated Iron Oxide Nanoparticles.** PINGYAN LEI, Steven Girshick, *University of Minnesota*

5IM INSTRUMENTATION AND METHODS IV

REGENCY ROOM

Jian Wang and Susanne Hering, chairs

5IM.1 1:00 **A Sizer for Neutral Weakly-Bound Ultrafine Aerosol Particles.** Bruce Yoder, Jessica Litman, RUTH SIGNORELL, *University of British Columbia*

5IM.2 1:15 **A New Instrument to Classify Particles by Their Aerodynamic Size.** FARZAN TAVAKOLI, Jonathan Symonds, Jason Olfert, *University of Alberta*

5IM.3 1:30 **Polar Nephelometer for the Measurement of the Particle Asymmetry Parameter.** Paul Kebabian, Timothy Onasch, Joda Wormhoudt, ANDREW FREEDMAN, *Aerodyne Research, Inc.*

5IM.4 1:45 **Particle Size Distributions Following Condensational Growth in Continuous Flow Aerosol Reactors as Derived from Residence Time Distributions: Theoretical Development and Application to Secondary Organic Aerosol.** MIKINORI KUWATA, Scot Martin, *Harvard University*

5IM.5 2:00 **Water-Based Fast Integrated Mobility Spectrometer.** STEVEN SPIELMAN, Chongai Kuang, Jian Wang, Susanne Hering, *Aerosol Dynamics Inc.*

5IM.6 2:15 **The Impact of Efficient Trapping Millions of Atmosphere-Sampled Singly-Charged Nanoparticles up to 200 nm.** PETER T. A. REILLY, Xinyu Wang, Huijuan Chen, Katherine G. E. Donahoe, *Washington State University*

5IM.7 2:30 **Field Testing of Genetically Tagged Spores for Specific Detection and Tracking of Biological Simulants in the Environment.** TIFFANY SUTTON, *US Army Edgewood Chemical Biological Center*

5IM.8 2:45 **Multiple Charging Correction for SMPS Algorithm.** Meilu He, SURESH DHANIYALA, *Clarkson University*

5MB SYMPOSIUM: INDOOR MICROBIOME II
LAKE SUPERIOR

Jordan Peccia and Tiina Reponen, chairs

5MB.1 1:00 **Fungal Concentrations in Air Samples Correlated with Environmental Relative Moldiness Index Values in French Homes.** DELPHINE MÉHEUST, Pierre Le Cann, Tiina Reponen, Larry Wymer, Stephen Vesper, Jean-Pierre Gangneux, *Ecole des Hautes Etudes en Santé Publique, IRSET, France*

5MB.2 1:15 **Phylogenetic-based Fungal Population Comparisons of Dust Collected from Water-damaged and Nonwater-Damaged Homes.** KAREN DANNEMILLER, Jordan Peccia, *Yale University*

5MB.3 1:30 **Spatiotemporal Analysis of Microbial Diversity Patterns from the 454 Pyrosequencing of Bioaerosols Recovered from Flooded Commercial Office Environments.** Kevin McCabe, Alina M. Handorean, Bharath Prithiviraj, Alison L. Ling, Keeley Hernandez, Norman R. Pace, MARK T. HERNANDEZ, *University of Colorado*

5MB.4 1:45 **Stenotrophomonas Maltophilia Exposure in Homes.** ERIC KETTLESON, Sudhir Kumar, Delphine Méheust, Sergey A. Grinshpun, Tiina Reponen, Stephen Vesper, Atin Adhikari, *University of Cincinnati*

5MB.5 2:00 **Microbial Content of Vacuum Cleaner Dust and Emitted Bioaerosols.** CAROLINE DUCHAINE, Luke Knibbs, Congrong He, Marc Veillette, Ariane Pelletier, Remi Charlebois, Lidia Morawska, *Université Laval, Canada*

5MB.6 2:15 **Detection of Tetracycline Resistance and Class 1 Integrase Genes in Indoor and Outdoor Air.** ALISON L. LING, Mark T. Hernandez, Norman R. Pace, Timothy M. LaPara, *University of Colorado*

5MB.7 2:30 **Comparing the Indoor Microbiome from Seven Different Bioaerosol Samplers.** ANDREW HOISINGTON, Juan Pedro Maestre, Sungwoo Bae, Kerry Kinney, Jeffrey Siegel, Maria D. King, *The University of Texas at Austin*

5MB.8 2:45 **Indoor Bioaerosol Dynamics: Fluorescent Particles in a College Classroom.** SEEMA BHANGAR, Elizabeth Heredia, J. Alex Huffman, William Nazaroff, *University of California, Berkeley*

5UA URBAN AEROSOLS V
NICOLLET D

Tim Gordon and Tim Dallmann, chairs

5UA.1 1:00 **Characterization of Exhaust Emissions from In-Use Motor Vehicles.** TIMOTHY DALLMANN, Steven DeMartini, Thomas Kirchstetter, David Worton, Edward Fortner, Scott Herndon, Timothy Onasch, Ezra Wood, Robert Harley, *University of California, Berkeley*

5UA.2 1:15 **On-road Emission Factors of PM Pollutants for Light-duty Vehicles (LDVs) Based on Real-world Urban Street Driving Conditions.** WINNIE KAM, James Liacos, James Schauer, Ralph Delfino, Constantinos Sioutas, *University of Southern California*

5UA.3 1:30 **Gas-Particle Partitioning of Primary Organic Aerosol Emissions from Gasoline and Diesel Vehicles.** ANDREW A. MAY, Albert A. Presto, Ngoc T. Nguyen, Christopher Hennigan, Timothy Gordon, Allen Robinson, *Carnegie Mellon University*

5UA.4 1:45 **Evolution of Traffic-Related Atmospheric Pollutants Near Roadways.** CHEOL-HEON JEONG, Greg J. Evans, John Liggio, Jeremy Wentzell, Ralf Staebler, Jeff Brook, *SOCAAR, University of Toronto*

5UA.5 2:00 **Comparing Primary and Secondary Particulate Matter from On-Road Sources: Gasoline vs. Diesel Vehicles.** TIMOTHY GORDON, Albert A. Presto, Ngoc T. Nguyen, Allen Robinson, Hector Maldonado, Sulekha Chattopadhyay, Alvaro Gutierrez, William Robertson, Mang Zhang, Matti Maricq, Eric Lipsky, *Carnegie Mellon University*

5UA.6 2:15 **Mobile Monitoring: a Better Tool to Measure Vehicle Emission Factors.** SCOTT FRUIN, Neelakshi Hudda, Ralph Delfino, Constantinos Sioutas, *University of Southern California*

5UA.7 2:30 **Effects of Truck Retrofit/Replacement Program on Diesel Engine Emissions at the Port of Oakland.** CHELSEA PREBLE, Timothy Dallmann, Steven DeMartini, Nathan Kreisberg, Susanne Hering, Robert Harley, Thomas Kirchstetter, *University of California, Berkeley*

5UA.8 2:45 **Ultrafine Particle Exposure of Street Users Walking, Cycling, and Driving Along an Urban Residential Roadway.** DAVID QUIROS, Eon Lee, Yifang Zhu, Rui Wang, *University of California, Los Angeles*

Wednesday 3:00 PM - 3:30 PM
Coffee Break

Wednesday 3:30 PM - 5:00 PM
Session 6: Platform

6AC AEROSOL CHEMISTRY V
NICOLLET A

Lynn Mazzoleni and Puneet Chhabra, chairs

6AC.1 3:30 **A Comparison of the Chemical Sinks of Atmospheric Organics in the Gas and Aqueous Phase.** SCOTT A. EPSTEIN, Sergey Nizkorodov, *University of California, Irvine*

6AC.2 3:45 **Secondary Organic Aerosol Formation on Wet Aerosols: Model Simulation and Implications.** SIYUAN WANG, Jian Zhen Yu, *Hong Kong University of Science & Technology*

6AC.3 4:00 **SOA Formation from Glyoxal in the Aerosol Aqueous Phase: A Case Study From Mexico City Using an Explicit Laboratory-based Model.** ELEANOR WAXMAN, Barbara Ervens, Katja Dzepina, Julia Lee-Taylor, Rainer Volkamer, *University of Colorado*

6AC.4 4:15 **SOA Formation through Aqueous Chemistry: Volatility and Yields.** BARBARA TURPIN, Yong Bin Lim, Diana Ortiz-Montalvo, Allison Schwier, V. Faye McNeill, *Rutgers University*

6AC.5 4:30 **Analysis of Atmospheric Water-Soluble Organic Compounds Using H-NMR and Liquid Chromatography High Resolution Mass Spectrometry.** VERA SAMBUROVA, Lynn Mazzoleni, Alexander Laskin, Julia Laskin, Parichehr Saranjampour, Anna Gannet Hallar, Douglas Lowenthal, Barbara Zielinska, *Desert Research Institute*

6AC.6 4:45 **Organic-nitrogen Compound Formation via Aqueous Photo-oxidative Processing of Glyoxal in the Presence of Different Inorganic Salts.** ALEX K. Y. LEE, John Liggio, Shao-Meng Li, Jonathan Abbatt, *University of Toronto*

6AP AEROSOL PHYSICS I

MIRAGE ROOM

Sean Garrick and Barbara Wyslouzil, chairs

6AP.1 3:30 **Kinetics of Heterogeneous Nucleation in Supersaturated Vapor: Fundamental Limits to Neutral Particle Detection Revisited.** ROBERT MCGRAW, Jian Wang, Chongai Kuang, *Brookhaven National Laboratory*

6AP.2 3:45 **The Effects of Heat Release During Nanoparticle Nucleation.** JUN LIU, Sean Garrick, *University of Minnesota*

6AP.3 4:00 **Scattering Calculations to Predict Mobilities from Molecular Models.** CARLOS LARRIBA, Christopher Hogan Jr., *University of Minnesota*

6AP.4 4:15 **The Structure of Nanoparticle Nucleation in Three-Dimensional Planar Jets.** NATHAN MURFIELD, Sean Garrick, *University of Minnesota*

6AP.5 4:30 **D2O and Nonane Non-equilibrium Droplet Growth in the Free Molecular Regime.** HARSHAD PATHAK, Kelley Mullick, Barbara Wyslouzil, Shinobu Tanimura, *The Ohio State University*

6AP.6 4:45 **Molecular Dynamics of Evaporation and Mass Accommodation of Water for Various Droplet Sizes.** JAN JULIN, Manabu Shiraiwa, Ulrich Pöschl, Ilona Riipinen, *Stockholm University*

6CC AEROSOLS, CLOUDS, AND CLIMATE IV
NICOLLET B/C

Nicole Riemer and Chelsea Preble, chairs

6CC.1 3:30 **Impact of Biomass Burning Aerosols on Regional Climate Over Southeast USA.** PENG LIU, Yongtao Hu, Alexandra Tsimpidi, Athanasios Nenes, Armistead Russell, *Georgia Institute of Technology*

6CC.2 3:45 **Particle-Resolved Simulations on the Effects of Black Carbon Mixing State on Cloud Droplet Number Concentration and Radiative Forcing.** JOSEPH CHING, Nicole Riemer, Matthew West, *University of Illinois at Urbana-Champaign*

6CC.3 4:00 **Internal or External? The Mixing State of Biomass Burning Aerosol, Its Photochemical Evolution, and Climate Impacts.** MICHAEL GIORDANO, Lelia Hawkins, Akua Asa-Awuku, *University of California, Riverside*

6CC.4 4:15 **The Impact of Decreasing Black Carbon Emissions on California's Climate.** ODELLE HADLEY, Lukas Valin, Surabi Menon, Thomas Kirchstetter, *Lawrence Berkeley National Laboratory*

6CC.5 4:30 **The Impact of Source-Oriented Aerosols on Fog Formation and Energy Budget in the California Central Valley.** HSIANG-HE LEE, Shu-Hua Chen, Michael Kleeman, Steven DeNero, *UC Davis*

6CC.6 4:45 **Investigating Effects of Ambient Temperature on Hygroscopic Properties of Atmospheric Aerosol using ATR-IR.** YONG LIU, Dong Fu, *University of Colorado Denver*

6IA INDOOR AEROSOLS III
LAKE SUPERIOR

William W Nazaroff and Brent Stephens, chairs

6IA.1 3:30 **The Concentration of Reactive Oxygen Species in a Sample of Houses in Austin, Texas.** SHAHANA KHURSHID, Jeffrey Siegel, Kerry Kinney, *The University of Texas at Austin*

6IA.2 3:45 **The Impact of Energy Efficiency Retrofits on Indoor PM Levels.** SARAH FREY, Matthew Fraser, Pierre Herckes, *Arizona State University*

6IA.3 4:00 **Evaluation of Environmental Tobacco Smoke Concentrations within Detroit Residential Households.** QUENTIN MALLOY, Jonathan Thornburg, Cortina Johnson, Allan Vette, Gary Norris, Janet Burke, Stuart Batterman, *RTI International*

6IA.4 4:15 **Investigation of Personal and Environmental Factors Affecting Indoor Air Quality in a Green Residential Building.** GEDIMINAS MAINELIS, Zuocheng Wang, Leonardo Calderon, Clinton J. Andrews, Richard Wener, Jennifer Senick, MaryAnn Sorensen-Allacci, Jin Young Shin, *Rutgers University*

6IA.5 4:30 **Ultrafine Particles Emitted from Microwave Popcorn.** Qunfang Zhang, Jessica Avalos, YIFANG ZHU, *University of California, Los Angeles*

6IA.6 4:45 **HVAC Filters as Samplers of Particle-Bound Contaminants.** JEFFREY SIEGEL, Kerry Kinney, *The University of Texas at Austin*

6IM INSTRUMENTATION AND METHODS V

REGENCY ROOM

Suresh Dhaniyala and Hiromu Sakurai, chairs

6IM.1 3:30 **A New Laminar-Flow Water Condensation Method.** SUSANNE HERING, Steven Spielman, Gregory Lewis, *Aerosol Dynamics Inc.*

6IM.2 3:45 **Inter- and Intra-model Comparisons of Water-based Condensation Particle Counters near a Major Freeway with Significant Heavy-duty Diesel Traffic.** EON LEE, Yifang Zhu, Andrea Polidori, Michael Koch, Philip Fine, Ahmed Mehadi, Donald Hammond, Jeffery Wright, Antonio H. Miguel, Alberto Ayala, *University of California, Los Angeles*

6IM.3 4:00 **High Temperature Condensation Particle Counter.** KANCHIT RONGCHAI, Nick Collings, *University of Cambridge*

6IM.4 4:15 **Advances in Concentrated Particle Collection with the Laminar Flow Growth Tube.** GREGORY LEWIS, Steven Spielman, Susanne Hering, *Aerosol Dynamics Inc.*

6IM.5 4:30 **Determination of Particle Counting Pressure Correction for Turbine Engine Exhaust Sampling.** MATTHEW DEWITT, Edwin Corporan, Christopher Klingshirn, *Air Force Research Laboratory/Propulsion Directorate*

6IM.6 4:45 **Traceable CPC Calibration in a Wide Particle Size Range: From 10 Nanometer up to 10 Micrometer.** JAAKKO YLI-OJANPERÄ, Hiromu Sakurai, Kenjiro Iida, Jyrki M. Mäkelä, Kensei Ehara, Jorma Keskinen, *Tampere University of Technology*

6SA SOURCE APPORTIONMENT I

NICOLLET D

Qi Ying and Brian Meland, chairs

6SA.1 3:30 **Source Apportionment of PM10 in Mumbai by the Chemical Mass Balance Receptor Model.** INDRANI GUPTA, Abba Elizabeth, Rakesh Kumar, *NEERI, CSIR*

6SA.2 3:45 **Source Apportionment of PM2.5 Nitrite and Sulfate in China using a Source-Oriented Chemical Transport Model.** HONGLIANG ZHANG, Jingyi Li, Qi Ying, Jian Zhen Yu, Dui Wu, Cheng Yuan, Kebin He, Jingkun Jiang, *Texas A&M University*

6SA.3 4:00 **Source Apportionment of Ambient PM2.5 in Santiago, Chile: 1999 and 2004 Results.** HECTOR JORQUERA, Francisco Barraza, *Pontificia Universidad Catolica de Chile*

6SA.4 4:15 **A Bayesian – Based Ensemble Technique for Source Apportionment of PM2.5.** SIVARAMAN BALACHANDRAN, Howard Chang, James Mulholland, Armistead Russell, *Georgia Institute of Technology*

6SA.5 4:30 **Assessing Top of Atmosphere Polarization Sensitivity to Aerosol Emissions Using the GEOS-Chem Chemical Transport Model Adjoint.** BRIAN MELAND, Xiaoguang Xu, Daven Henze, Jun Wang, *Univesity of Colorado, Boulder*

6SA.6 4:45 **Top-Down Estimate of Dust Emissions through Integration of MODIS and MISR Aerosol Retrievals with the GEOS-Chem Adjoint Model.** JUN WANG, Xiaoguang Xu, Daven Henze, Jing Zeng, *University of Nebraska - Lincoln*

Wednesday 5:00 PM - 6:00 PM
Annual Business Meeting

Wednesday 6:00 PM - 7:00 PM
Working Group Meetings 2

Thursday 8:00 AM - 9:15 AM
Plenary III

8:00 **A Tangled Web: Occupants, Squames, Ozone, SOA and SVOCs in Indoor Environments** Charles Weschler. *UMDNJ-Robert Wood Johnson Medical School.*

Moderator William Nazaroff. *University of California, Berkeley.*

9:00 **Sinclair Award Presentation, Mercer Award Announcement** Sonia Kreidenweis, Awards Committee Chair. *Colorado State University*

Thursday 9:00 AM - 3:30 PM
Exhibits Open

Thursday 9:15 AM - 9:45 AM
Coffee Break

Thursday 9:45 AM - 11:30 AM
Session 7: Platform

7AC AEROSOL CHEMISTRY VI
NICOLLET A

Leah Williams and Albert Presto, chairs

7AC.1 9:45 **Yields of Alkyl Nitrates and Hydroxynitrates Formed from the Reactions of C8–C14 n-Alkanes with OH Radicals in the Presence of NOx.** GEOFFREY YEH, Paul Ziemann, *UC Riverside*

7AC.2 10:00 **Secondary Organic Aerosol Formation from Aromatic Compounds: Relationship between SOA Yield and Chemical Structure.** PING TANG, Shunsuke Nakao, Chia-Li Chen, David R. Cocker III, *University of California, Riverside*

7AC.3 10:15 **Functional Group Distributions in Photolytically Generated Organic Aerosols.** Alicia Kalafut-Pettibone, W. SEAN MCGIVERN, *National Institute of Standards and Technology*

7AC.4 10:30 **Transitions from Functionalization to Fragmentation Reactions of Laboratory Secondary Organic Aerosol (SOA) Generated from the OH Oxidation of Alkane Precursors.** ANDREW LAMBE, Timothy Onasch, David Croasdale, Justin Wright, Alex Martin, Jonathan Franklin, Paola Massoli, Jesse Kroll, Manjula Canagaratna, William Brune, Douglas Worsnop, Paul Davidovits, *Aerodyne Research, Inc.*

7AC.5 10:45 **Heterogeneous Ozonation and Nitration Products of Polycyclic Aromatic Hydrocarbons.** RICHARD COCHRAN, Haewoo Jeong, Shokouh H. Haddadi, Alexandra C. Smith, Rebeka F. Derseh, Nagaraju Dongari, Josef Beranek, Alena Kubatova, *University of North Dakota*

7AC.6 11:00 **Environmental Factors Influencing Peroxyhemiacetal Chemistry in SOA.** LINDSAY YEE, Jill Craven, Katherine Schilling, Christine Loza, Xuan Zhang, Matthew Coggon, Paul Ziemann, John Seinfeld, *California Institute of Technology*

7AC.7 11:15 **O3-initiated Heterogeneous Oxidation of Linoleic Acid and its Dependence on Ambient Temperature and Relative Humidity.** Guang Zeng, Yunhong Zhang, YONG LIU, *University of Colorado Denver*

7AP AEROSOL PHYSICS II

MIRAGE ROOM

Chris Hogan and Pramod Kulkarni, chairs

7AP.1 9:45 **Crossover from Ballistic to Epstein Motion.** William Heinson, CHRIS SORENSEN, Amit Chakrabarti, Flint Pierce, *Kansas State University*

7AP.2 10:00 **The Evolution of Primary Particle Polydispersity in Aggregates During Sintering.** MAX L. EGGERSDORFER, Sotiris E. Pratsinis, *ETH Zurich*

7AP.3 10:15 **Direct Simulation Monte Carlo (DMSC) Calculation of the Low Reynolds Number Drag on Aerosol Aggregates.** CHONGLIN ZHANG, Thaseem Thajudeen, Carlos Larriba, Thomas Schwartzentruber, Christopher Hogan Jr., *University of Minnesota*

7AP.4 10:30 **Break-up and Bounce of TiO2 and Cu Agglomerates Due to the Inertial Impaction.** MIKA IHALAINEN, Terttaliisa Lind, Tiina Torvela, Kari Lehtinen, Jorma Jokiniemi, *Paul Scherrer Institut, Switzerland*

7AP.5 10:45 **Drag Measurements of Cylindrical Aerosol Particles in the Transition Regime.** RANGANATHAN GOPALAKRISHNAN, Peter McMurry, Christopher Hogan Jr., *University of Minnesota*

7AP.6 11:00 **The Effect of Orientation on the Mobility and Dynamic Shape Factor of Charged Axially Symmetric Particles in an Electric Field.** MINGDONG LI, George Mulholland, Michael Zachariah, *University of Maryland*

7AP.7 11:15 **Light Scattering Shape Diagnostics for Agglomerates.** GEORGE MULHOLLAND, Lei Zhou, Michael Zachariah, William Heinson, Chris Sorensen, Amit Chakrabarti, *University of Maryland*

7CC AEROSOLS, CLOUDS, AND CLIMATE V
NICOLLET B/C

Paola Massoli and Paul Ziemann, chairs

7CC.1 9:45 **Comparison of n-Alkanoic Acid Surface Pressure Isotherms Determined for Microscopic Droplets and Macroscopic Solutions.** CHRIS RUEHL, Kevin Wilson, Athanasios Nenes, Patrick Chuang, Allen H. Goldstein, *Univeristy of California, Berkeley*

7CC.2 10:00 **Hygroscopicity Trends of Secondary Organic Aerosol Generated from Ozonolysis of 1-Alkenes.** RYAN SULLIVAN, Markus Petters, Aiko Matsunaga, Sarah Suda, Lorena Minambres, Annelise Faulhaber, Paul Ziemann, Sonia Kreidenweis, *Carnegie Mellon University*

7CC.3 10:15 **Cloud Condensation Nuclei Activity of Secondary Organic Aerosol: Investigation of Hygroscopicity and Activation Kinetics.** KATE CERULLY, Lea Hildebrandt Ruiz, Andrea Paciga, Tomi Raatikainen, Neil Donahue, Spyros Pandis, Athanasios Nenes, *Georgia Institute of Technology*

7CC.4 10:30 **Water-Soluble VOCs and Aerosol CCN Activity: A Tale of Three Surfactants.** Neha Sareen, Allison Schwier, Greg Drozd, Joseph Woo, Terry Lathem, Athanasios Nenes, V. FAYE MCNEILL, *Columbia University*

7CC.5 10:45 **The Ice Nucleating Potential of Amorphous Secondary Organic Aerosol to Form Cold Clouds.** BINGBING WANG, Andrew Lambe, Paola Massoli, Timothy Onasch, Paul Davidovits, Douglas Worsnop, Daniel Knopf, *Stony Brook University*

7CC.6 11:00 **Hygroscopicity of Amine Secondary Aerosol – Mixtures of Organic and Inorganic Components.** XIAOCHEN TANG, David R. Cocker III, Kathleen Purvis-Roberts, Akua Asa-Awuku, *University of California Riverside*

7CC.7 11:15 **Kinetics of Water Transport in Amorphous Aerosol.** JAMES F. DAVIES, Allen E. Haddrell, Rachael E.H. Miles, Jonathan P. Reid, *University of Bristol*

7HA HEALTH RELATED AEROSOLS I: BIOLOGICAL AEROSOLS
LAKE SUPERIOR

Jana Kesavan and Sergey Grinshpun, chairs

7HA.1 9:45 **Airborne Biopolymer Analysis and Toxicity Potential Associated with Hydrocarbon Weathering on Shorelines Impacted by the Deepwater Horizon Oil Spill.** ALINA M. HANDOREAN, Kevin McCabe, Jane Turner, Alison L. Ling, Benjamin J. Miller, Mark T. Hernandez, *University of Colorado at Boulder*

7HA.2 10:00 **Release of Bioaerosol Genomic DNA Due to Membrane Damage During Aerosolization and Sampling.** HUAJUN ZHEN, Taewon Han, Donna Fennell, Gediminas Mainelis, *Rutgers University*

7HA.3 10:15 **Effect of Aerosolization and Sampling Time on the Activity of a Purified Neuraminidase from Clostridium Perfringens as Viral Neuraminidase Model.** MARIE-JOSÉE TOULOUSE, Nathalie Turgeon, Jim Ho, Dongqing Li, Caroline Duchaine, *Université Laval, Canada*

7HA.4 10:30 **Viable Approach for the Detection and Sampling of Mycobacteria Species Contamination by Aerosol and Surface Sampling.** Pamela Murowchick, DAVID ALBURTY, Alec Adolphson, Michael Hornback, Benjamin Cobb, Brian Dable, *AlburtyLab, Inc.*

7HA.5 10:45 **Investigation of an Optimized Single-Stage Electrostatic Precipitator for Bioaerosols.** TAEWON HAN, Donna Fennell, Gediminas Mainelis, *Rutgers University*

7HA.6 11:00 **Validation of Five Bacteriophages Models for the Study of Airborne Viruses.** NATHALIE TURGEON, Marie-Josée Toulouse, Sylvain Moineau, Caroline Duchaine, *Université Laval, Canada*

7HA.7 11:15 **Investigation of Structural Modifications of a Common Cold Virus at Elevated Temperature in the Gas-phase with GEMMA.** PETER KALLINGER, Victor Weiss, Dieter Blaas, Günter Allmaier, Wladyslaw Szymanski, *University of Vienna*

7IM INSTRUMENTATION AND METHODS VI
REGENCY ROOM

Jim Farnsworth and Chongai Kuang, chairs

7IM.1 9:45 **Device and Method for Generation of Aerosol Distributions with Tuneable Geometric Mean Diameter down to 5 nm.** JAMES FARNSWORTH, Jason Johnson, *TSI Incorporated*

7IM.2 10:00 **Characterization of a Device for Measuring Electrical Mobility Size and Concentration of Nanoparticles.** JASON JOHNSON, Axel Zerrath, Rob Caldow, Melissa Grose, Sean Morell, Erik Willis, Daniel Jensen, *TSI Incorporated*

7IM.3 10:15 **Development and Evaluation of a Personal Sampler for Nanoparticle Exposure Assessment.** JOHN VOLCKENS, Dan Miller-Lionberg, Anthony Marchese, Hank Lentz, Matt Zock, Kristin Bunker, Traci Lersch, John Mastovich, Gary Casuccio, *Colorado State University*

7IM.4 10:30 **Design and Performance of a Thermophoretic Precipitator Nanoparticle Sampler.** ART MILLER, Chris Wendel, Alek Marinos, Grant King, Aleksandar Bugarski, *NIOSH*

7IM.5 10:45 **Evaluation of a Compact Electrostatic Nanoparticle Sampler.** HE JING, Ta-Chih Hsiao, Siqin He, Qisheng Ou, Da-Ren Chen, *Washington University in St. Louis*

7IM.6 11:00 **Environmental Particle Collector and Detector System for Continuous Sampling of Ultrafine Aerosols.** MARIA D. KING, Victor Ugaz, John Haglund, Ray Pierson, Yassin Hassan, *Texas A&M University*

7IM.7 11:15 **Quantifying Ligand Adsorption to Nanoparticles using Tandem Differential Mobility – Mass Analysis.** SUVAJYOTI GUHA, Xiaofei Ma, Michael Tarlov, Michael Zachariah, *University of Maryland, College Park*

7SA SOURCE APPORTIONMENT II

NICOLLET D

Betsy Stone and Punith Nallathamby, chairs

7SA.1 9:45 **Impact of Updated Emission Inventories on Source Apportionment of Fine Particle and Ozone Over the Southeastern U.S.** WEI WANG, Shiang-Yuh Wu, Kai Wang, Yang Zhang, Hiroaki Minoura, Zifa Wang, *North Carolina State University, Raleigh, NC, USA*

7SA.2 10:00 **Organic Aerosol Source Apportionment in the United States.** BENJAMIN MURPHY, Kristina Wagstrom, Spyros Pandis, *Carnegie Mellon University*

7SA.3 10:15 **Characterization of Organic Carbon Sources in Pasadena and Bakersfield, CA During CalNex 2010.** PUNITH NALLATHAMBY, Rebecca Sheesley, John Offenberg, Michael Lewandowski, Tadeusz Kleindienst, Mohammed Jaoui, *Baylor University*

7SA.4 10:30	**Daily Trends of Ultrafine Particulate Matter at Sacramento, California.** Toshihiro Kuwayama, Chris Ruehl, MICHAEL KLEEMAN, *UC Davis*
7SA.5 10:45	**Coarse Particles in the Desert Southwest: Final Results and Policy Insights.** ANDREA CLEMENTS, Matthew Fraser, Pierre Herckes, Kale Walch, Paul A. Solomon, *Arizona state University*
7SA.6 11:00	**Sources of Organic Aerosol in Eastern Iowa.** ELIZABETH STONE, Chathurika Rathanyake, Thilina Jayarathne, *University of Iowa*
7SA.7 11:15	**Development of a New SMP Model Satisfying All Known Physical Constraints in Aerosol Source Apportionment Study.** BONG MANN KIM, *AQMD*

Thursday 11:30 AM - 12:15 AM
Light Take-Away Lunch

Thursday 12:15 AM - 1:45 AM
Session 8: Poster

8AP AEROSOL PHYSICS III: POSTERS
EXHIBIT HALL

8AP.1 12:15	**Aerosol Aggregation in the Transition Regime.** THASEEM THAJUDEEN, Suhrid Deshmukh, Christopher Hogan Jr., *University of Minnesota*
8AP.2 12:15	**Potential Enhanced Particle Growth in the Transition Regime.** HUI OUYANG, Ranganathan Gopalakrishnan, Christopher Hogan Jr., *University of Minnesota*
8AP.3 12:15	**Diffusion Charging of Non-Spherical Aerosol Particles from Brownian Dynamics Simulations.** RANGANATHAN GOPALAKRISHNAN, Thaseem Thajudeen, Christopher Hogan Jr., *University of Minnesota*
8AP.4 12:15	**Tandem DMA Measurement of the Evaporation of Sub 5nm Metal Nanoparticles.** CARLOS LARRIBA, Santiado Ruiz-Valdepeñas, Christopher Hogan Jr., *University of Minnesota*
8AP.5 12:15	**Determining the Proton Affinity of Atmospheric Molecular Ions.** KAI RUUSUVUORI, Theo Kurten, Ismael Kenneth Ortega Colomer, Hanna Vehkamäki, *University of Helsinki*

8AP.6 12:15	**Parameterization for Nanoparticle Growth.** SILJA HÄKKINEN, Hanna Manninen, Joonas Merikanto, Maija Kajos, Tuomo Nieminen, Markku Kulmala, Ilona Riipinen, *University of Helsinki*
8AP.7 12:15	**Measurement of Momentum Accommodation Function Using Free Nanoparticles.** HAESUNG JUNG, Koohee Han, George Mulholland, Jung Kim, *University of Seoul*
8AP.8 12:15	**The Effects of Unresolved Scalar Fluctuations on the Formation of Particles from Vapor.** NATHAN MURFIELD, Sean Garrick, *University of Minnesota*
8AP.9 12:15	**The Effects of Leaf Area Density Variation on the Collection Efficiency of Ultrafine Particles (UFP).** CHENG-WEI HUANG, Ming-Yeng Lin, Andrey Khlystov, Gabriel Katul, *Duke University*
8AP.10 12:15	**Modeling Cross-flow Aerosol Mixing under Moderate Reynolds Number.** MATTHEW BROWN, Yi-wen Huang, Daniel Cziczo, Suresh Dhaniyala, *Clarkson University*
8AP.11 12:15	**Effect of Sub Grid Scale Turbulence Fluctuations on Particle Deposition in Duct Flows.** Behtash Tavakoli, GOODARZ AHMADI, *Clarkson University*
8AP.12 12:15	**Effect of Fractal Dimension and Prefactor on Aggregate Heat Conduction in the Free-Molecular Regime.** FENGSHAN LIU, Gregory Smallwood, *National Research Council Canada*
8AP.13 12:15	**Large Eddy Simulation of Compressible Gas-particle Two-phase Flows in a Square Duct.** XINYU ZHANG, Lin Tian, *Mechanical Engineering, University of Nottingham, Ningbo, China*
8AP.14 12:15	**Modeling Plume Dispersion of Diesel Truck Exhaust in a Wind Tunnel.** JONATHAN STEFFENS, Max Zhang, *Cornell University, Ithaca, NY, USA*
8AP.15 12:15	**UV-Visible Absorption of Wood Smoke Particles with Photochemical Oxidation.** MIN ZHONG, Myoseon Jang, *University of Florida*
8AP.16 12:15	**Linear Multiplexed Electrospray Atomizers Micro-machined from Metal and Polymers.** BRANDON LOJEWSKI, Weiwei Yang, Weiwei Deng, *University of Central Florida*
8AP.17 12:15	**Strictly Monodispersed Droplets Generated by External Electro-hydrodynamic Perturbations on Liquid Jets.** HONGXU DUAN, Weiwei Yang, Johan Rodriguez, Jing Gu, Weiwei Deng, *University of Central Florida*

8AP.18 12:15	**Three Dimensional Characteristics of Mineral Dust using Atomic Force Microscopy.** XIN XIN WOODWARD, Ashima Chhabra, Will Cantrell, *Michigan Technological University*
8AP.19 12:15	**Estimates of Non-Ideal Effects on the Agglomerate Dynamics.** WEONGYU SHIN, George Mulholland, Seong C Kim, Jing Wang, Jacob Scheckman, David Pui, *Chungnam National University*
8AP.20 12:15	**Mobility Behavior of Nanoparticle Fractal Agglomerates.** WEONGYU SHIN, Jin Hyoung Kim, George Mulholland, David Pui, *Chungnam National University*
8AP.21 12:15	**Effect of In-Plume Aerosol Processing on the Efficacy of Marine Cloud Albedo Enhancement from Controlled Sea-Spray Injections.** Stuart Geoff, ROBIN STEVENS, Dominick Spracklen, Hannele Korhonen, Jeffrey Pierce, *Dalhousie University*
8AP.22 12:15	**Differential Light Scattering by Dye Coated Silica Microspheres.** Matthew Hart, PAUL LANE, Jay Eversole, *Naval Research Laboratory*

8CA CARBONACEOUS AEROSOLS IN THE ATMOSPHERE II: POSTERS
EXHIBIT HALL

8CA.1 12:15	**The Effect of Model Spatial Resolution on Secondary Organic Aerosol Predictions.** CHRIS WAINWRIGHT, Jeffrey Pierce, John Liggio, Kevin Strawbridge, Annie-Marie Macdonald, Richard Leaitch, *Dalhousie University*
8CA.2 12:15	**Short-Term Storm Responses of Soil CO2 Efflux and Hydrologic Organic Carbon Export in a Forested Watershed in the Haean Basin, South Korea.** YITAYEW A. WORKINEH, Ji-hyug Park, *Kangwon National University*
8CA.3 12:15	**Real-Time Measurements of Water-Insoluble Fractions and Black Carbon Concentrations With Water and Butanol Based Particle Counters.** DANIEL SHORT, Michael Giordano, Yifang Zhu, Andrea Polidori, Akua Asa-Awuku, *University of California, Riverside*
8CA.4 12:15	**Carbon Enrichment in Windblown Sediment on the Columbia Plateau.** BRENTON SHARRATT, Laurel Graves, Shelley Pressley, *USDA-ARS*

8CA.5 12:15 **The Correlation of Organic Carbon and Total Protein Parts in Atmospheric Aerosol of Southwestern Siberia.** ALEXANDR SAFATOV, Galina Buryak, Sergei Olkin, Irina Reznikova, Valerii Makarov, Svetlana Popova, *FBRI SRC VB Vector*

8CA.6 12:15 **Tunable Laboratory Generated Aerosols: Linking Experimental Data to Field Measurements and Theory.** CHRISTOPHER ZANGMEISTER, Xiaofei Ma, Michael Zachariah, *National Institute of Standards and Technology*

8CA.7 12:15 **Contribution of Biomass Burning and Traffic Emissions to Aerosol Optical Properties at a Rural Site in Southeast England During the Winter ClearfLo IOP.** Paola Massoli, Allison Aiken, Kyle Gorkowski, Scott Herndon, Edward Fortner, John Jayne, William Brooks, Puneet Chhabra, Leah Williams, Nga Lee Ng, Timothy Onasch, Jonathan Franklin, Mavendra Dubey, Douglas Worsnop, ANDREW FREEDMAN, *Aerodyne Research, Inc.*

8CA.8 12:15 **Fuel Based Fine Particulate and Black Carbon Emission Factors from Atlanta railyards.** BORIS GALVIS, Michael Bergin, Armistead Russell, *Georgia Institute of Technology*

8CA.9 12:15 **Modeling of Regional Age Distribution of Black Carbon.** HONGLIANG ZHANG, Qi Ying, Michael Kleeman, *Texas A&M University*

8CA.10 12:15 **The Correlation between Positive Sampling Artifacts and Organic Aerosol Volatility.** ANDREW A. MAY, Albert A. Presto, Allen Robinson, *Carnegie Mellon University*

8CA.11 12:15 **Interpreting Thermal Denuder Data with an Optimizing Comprehensive Instrument Model.** JAMES HITE, Kate Cerully, Athanasios Nenes, *Georgia Institute of Technology*

8CA.12 12:15 **Comprehensive Characterization of Particulate Matter Using Sequential Thermal Extraction/Pyrolysis with On-line Gas Chromatography/Mass Spectrometry.** Josef Beranek, Allison Coffman, Evguenii Kozliak, ALENA KUBATOVA, *University of North Dakota*

8CA.13 12:15 **The Spatial and Temporal Variability in Bioaerosol Community Struture in Urban and Rural Colorado.** Robert Bowers, NICHOLAS CLEMENTS, Allison Moore, Michael Hannigan, Christine Wiedinmyer, Noah Fierer, *University of Colorado at Boulder*

8CA.14 12:15	**Volatility of Ambient Organic Aerosol at an Urban and a Remote Site in Europe.** ANDREA PACIGA, Lea Hildebrandt Ruiz, Gabriella Engelhart, Evangelia Kostenidou, Monica Crippa, Andre Prévôt, Urs Baltensperger, Spyros Pandis, *Carnegie Mellon University*
8CA.15 12:15	**Effect of Ammonia on the Volatility of Dicarboxylic Acids.** ANDREA PACIGA, Ilona Riipinen, Spyros Pandis, *Carnegie Mellon University*
8CA.16 12:15	**Molecular Characterization of Cloud Water Using Ultrahigh-Resolution FT-ICR Mass Spectrometry.** YUNZHU ZHAO, Parichehr Saranjampour, Anna Gannet Hallar, Lynn Mazzoleni, *Michigan Technological University*
8CA.17 12:15	**Advanced Molecular Speciation of Aircraft Engine Soot by Nano Desorption Electrospray Ionization Mass Spectrometry.** JEREMY CAIN, Alexander Laskin, Julia Laskin, Edwin Corporan, David Blunck, William Roquemore, *Air Force Research Laboratory/Propulsion Directorate*
8CA.18 12:15	**Simulating Black Carbon Mixing State in the Planetary Boundary Layer with a Particle-Resolving Single-Column Model.** JEFFREY H. CURTIS, Nicole Riemer, Matthew West, *University of Illinois at Urbana-Champaign*
8CA.19 12:15	**Light Absorption Properties of Brown Carbon from Fresh and Photo-chemically Aged Biomass Burning Emissions.** RAWAD SALEH, Christopher Hennigan, Gavin McMeeking, Wayne Chuang, Hugh Coe, Neil Donahue, Allen Robinson, *Carnegie Mellon University*
8CA.20 12:15	**Oxidation of C60 Aerosol by Ozone.** ANDREA TIWARI, Alec Wagner, John Morris, Linsey Marr, *Virginia Tech*
8CA.21 12:15	**Black Carbon Trends over Several Decades at Multiple Locations.** CHELSEA PREBLE, Odelle Hadley, Liang Liu, Tami Bond, Thomas Kirchstetter, *University of California, Berkeley*
8CA.22 12:15	**Regional Multi-generation Secondary Organic Aerosol Production from Major Anthropogenic and Biogenic Precursors.** JINGYI LI, Qi Ying, *Texas A&M University*
8CA.23 12:15	**The Dual-Spot Aethalometer: Application of Real-Time Source Apportionment Algorithm for Black Carbon and Carbonaceous Aerosols.** Luka Drinovec, Grisa Mocnik, Peter Zotter, Andre Prévôt, Christian Ruckstuhl, ANTHONY D.A. HANSEN, *Aerosol d.o.o., Slovenia*

8CA.25 12:15 **Secondary Organic Aerosol Formation from Dilute Small Off-Road Engine Emissions.** DANIEL S. TKACIK, Albert A. Presto, Allen Robinson, *Carnegie Mellon University*

8CA.26 12:15 **Volatility and Activity Coefficients of Levoglucosan in Artificial and Quasi-Ambient Organic Aerosols.** ANDREY KHLYSTOV, Suqi Huang, Ming-Yeng Lin, *Research Triangle Institute*

8CA.27 12:15 **Black Carbon Hygroscopicity at a Rural Site in the UK.** JAMES ALLAN, Dantong Liu, Michael Flynn, Dominique Young, James Whitehead, Gordon McFiggans, Hugh Coe, Zoe Fleming, *University of Manchester*

8CA.28 12:15 **Contribution of Alkanes and Polycyclic Aromatic Hydrocarbons to Organic Aerosol.** HAVALA PYE, George Pouliot, Michael Lewandowski, John Offenberg, Tadeusz Kleindienst, *U. S. Environmental Protection Agency*

8CA.29 12:15 **Carbonaceous Superaggregates in Souteast Asian Outflow.** NICHOLAS BERES, Rajan Chakrabarty, Hans Moosmuller, Frida Bender, Veerabhadran Ramanathan, *Desert Research Institute*

8CA.30 12:15 **Evidence and Quantitation of Aromatic Organosulfates in Ambient Aerosols in Lahore, Pakistan.** Shuvashish Kundu, Tauseef Quraishi, Ge Yu, Catalina Suarez, Frank Keutsch, ELIZABETH STONE, *University of Iowa*

8CA.31 12:15 **Measurement of Gas and Particulate Amines at Agricultural Facilities using an Ambient Ion Monitor.** PHILIP SILVA, *USDA - Agricultural Research Service*

8CA.32 12:15 **Characterization of Atmospheric Aerosols Impacted by the Iowa City Landfill Tire Fire.** Jared Downard, ELIZABETH STONE, *University of Iowa*

8HA HEALTH RELATED AEROSOLS II: POSTERS
EXHIBIT HALL

8HA.1 12:15 **Use of Two Samplers for Determination of Quantitative and Qualitative Bioaerosols In Tijuana, Mexico, Air Basin.** LILIA HURTADO, Guillermo Rodriguez, *Universidad Autonoma de Baja California, Tijuana, Mexico*

8HA.2 12:15 **Laboratory Studies of Humidity-Induced Pollen Rupture to Produce Respirable Particles.** QIAN ZHOU, Richard Flagan, Timothy M. VanReken, *Washington State University*

8HA.3 12:15 **Development and Optimization of ATP Bioluminescence Method for Rapid Bioaerosol Quantification.** TAEWON HAN, Srishty Subramanian, Gediminas Mainelis, *Rutgers University*

8HA.4 12:15 **Evaluation of Antimicrobial Durability on Natural Product Nanoparticle-Deposited Air Filter.** GI BYOUNG HWANG, Bo Mi Kwon, Chu Won Nho, Jae Hee Jung, Gwi Nam Bae, *Korea Institute of Science and Technology*

8HA.5 12:15 **Applying Real-Time Quantitative Polymerase Chain Reaction to Monitor the Airborne Streptococcus Pneumonia in a Daycare Center.** MIAO-CHING CHI, Lin Meng-Chih, Chen Min-Li, *Department of Respiratory Care, Chang Gung University of Sci*

8HA.6 12:15 **Association of Virus Content with Its Carrying Particle Size.** ZHILI ZUO, Thomas Kuehn, Sunil Kumar, Yogesh Chander, Sagar Goyal, Jessica Appert, Peter Raynor, Song Ge, David Pui, *University of Minnesota*

8HA.7 12:15 **Survival of Four Bacteriophages Virus Models Under Relative Humidity and Temperature Aerosol Stresses.** MÉLISSA MARCOUX-VOISELLE, Nathalie Turgeon, Daniel Verreault, Sylvain Moineau, Caroline Duchaine, *Université Laval, Canada*

8HA.8 12:15 **Transient Deposition Functions Applicable to Inhaled Pharmaceutical Aerosols.** Philip Ophus, CARLOS LANGE, *University of Alberta*

8HA.9 12:15 **Development of Controlled Condensational Growth for Aerosol Delivery During Nasal High Flow Therapy.** GENG TIAN, Yoen-Ju Son, Michael Hindle, Worth Longest, *Virginia Commonwealth University*

8HA.10 12:15 **Losses of Cigarette Smoke Particles in Oral Cavities.** BAHMAN ASGHARIAN, Owen Price, Jeff Schroeter, Colin Dickens, John McAughey, *Applied Research Associates, Inc.*

8HA.12 12:15 **Development of a Wick Electrospray Pharmaceutical Aerosol Generator.** LANDON HOLBROOK, Worth Longest, *Virginia Commonwealth University*

8HA.13 12:15 **Influence of Morphometry and Airway Constriction on Response to Inhaled Methacholine.** MICHAEL OLDHAM, Rodney Clinkenbeard, Owen Moss, *University of California, Irvine*

8HA.14 12:15 **Physical and Chemical Properties of Iron Oxide Nanoparticles that Contribute to Cellular Toxicity and Acellular Production of Hydroxyl Radical.** JESSICA CHARRIER, Christoph Vogel, Aamir Abid, Ian Kennedy, Cort Anastasio, *University of California, Davis*

8HA.15 12:15 **Worker and Environmental Assessment of Potential Unbound Engineered Nanoparticle Releases.** GARY CASUCCIO, Randall Ogle, Kristin Bunker, Keith Rickabaugh, *RJ Lee Group, Inc.*

8HA.16 12:15 **Toxicological Assessment of Emerging Diesel Fuel Emissions: The EMITTED Study.** JOSEPHINE COOPER, Krystal J. Godri, Naomi Zimmerman, Terry Jung, Cheol-Heon Jeong, Greg J. Evans, James S. Wallace, *SOCAAR, University of Toronto*

8HA.17 12:15 **Assessment of the Pre-Toddler Inhalable Particulate Environmental Robot's Ability to Mimic Dust Resuspension by Children.** Gediminas Mainelis, ZUOCHENG WANG, Kathleen Black, Marta Hernandez, Stuart Shalat, *Rutgers University*

8HA.18 12:15 **Assessing the Impact of Hazardous Air Pollutants Emitted from Phosphate Fertilizer Plants Ambient Air Quality and Human Health.** HSING-WANG LI, Nima Afshar-Mohajer, Chang-Yu Wu, Jean-Claude J. Bonzongo, Vito A. Ilacqua, Yongsuk Choi, Brian Birky, *University of Florida*

8HA.19 12:15 **Genotoxic Potential of Organic Extracts from Particle Emissions of Diesel and Rapeseed Oil Powered Engines.** JAN TOPINKA, Alena Milcova, Jana Schmuczerova, Martin Mazac, Martin Pechout, Michal Vojtisek-Lom, *Institute of Experimental Medicine AS CR, Prague, Czech Repu*

8HA.20 12:15 **Discerning the Chemical Composition and Mutagenic Effects of Soy Biodiesel PM.** DAVID NASH, Esra Mutlu, William Preston, Michael Hays, Sarah Warren, Charly King, William Linak, M. Ian Gilmour, David DeMarini, *U.S. EPA*

8HA.21 12:15 **Development and Implementation of Techniques to Investigate the Physiological Response of Bacteria to Aerosolisation.** RICHARD THOMAS, Janine Jordan, David Cleary, *Dstl*

8HA.22 12:15 **Comparison of Face Mask Seal using Different Facial Materials on an Idealized Infant Replica.** NICHOLAS CARRIGY, Connor O'Reilly, James Schmitt, Warren Finlay, *University of Alberta*

8HA.23 12:15 **Modeling Deposition of Cerium-Containing Diesel Particles Inside a Wind Tunnel.** ZHEMING TONG, Thomas Peters, Robert Willis, Kathleen Fahey, Havala Pye, Max Zhang, *Cornell University*

8HA.24 12:15 **How Deposition Uniformity Affects FTIR Analysis of Filter Samples.** ART MILLER, Pamela Drake, Ryan LeBouf, Nate Murphy, Emanuele Cauda, *NIOSH*

8HA.25 12:15 **On Dithiothreitol (DTT) as a Measure of Oxidative Potential for Ambient Particles: Evidence for the Importance of Soluble Transition Metals.** JESSICA CHARRIER, Cort Anastasio, *University of California, Davis*

8HA.26 12:15 **Estimating Health Effects of Air Pollutants in Pittsburgh from 2001-2002 Using Autoregressive Moving Average (ARMA) Time Series Structural Equation Models (SEMs).** RICHARD BILONICK, Daniel Connell, Evelyn Talbott, Judith Rager, Lynne Pavlic Marshall, *University of Pittsburgh*

8HA.27 12:15 **Oxidative Stress and the Acceleration of Atherosclerosis in Susceptible Mice After Exposure to Semi-Volatile Components of Ultrafine Particulate Matter.** ANDREW KEEBAUGH, Payam Pakbin, Loyda Mendez, Zhi Ning, Glenn Gookin, Constantinos Sioutas, Michael Kleinman, *University of California, Irvine*

8HA.28 12:15 **Generation of Reactive Oxygen Species from Source-Oriented, Ambient Submicron Particulate Matter in a Cell-free Surrogate Lung Fluid Solution.** NICOLE RICHARDS, Jessica Charrier, Keith Bein, Anthony Wexler, Cort Anastasio, *UC Davis*

8HA.29 12:15 **Quantification of Leakages in Respirators using Computational Fluid Dynamics.** SUVAJYOTI GUHA, Matthew Myers, Prasanna Hariharan, *Food and Drug Administration*

8IM INSTRUMENTATION AND METHODS VII: POSTERS
EXHIBIT HALL

8IM.1 12:15 **Refinement of a Particle Trap Laser Desorption Mass Spectrometer (PT-LDMS) as a Field-Deployable Aerosol Composition Analyzer.** NAOKI TAKEDA, Takuma Miyakawa, Masahiko Takei, Noritomo Hirayama, Nobuyuki Takegawa, *Fuji Electric, Co., Ltd*

8IM.2 12:15 **Development of Aerosol Particle Trapping System with Signal from OPC for Particle Visualization.** CHIHO KITAYAMA, Tomomi Fujioka, Takafumi Seto, Yoshio Otani, Tetsuo Endo, *Kanazawa University*

8IM.3 12:15 **Use of Inertial-Filter as Sampling Inlet of CPC for Measuring Nanoparticles.** CHIHO KITAYAMA, Takebayashi Masato, Takafumi Seto, Yoshio Otani, Masami Furuuchi, Takuji Ikeda, *Kanazawa University*

8IM.4 12:15 **Development of a Triggering-LIBS for Determination of Elemental Composition of Single Particles in Real Time.** Kihong Park, HEESUNG LEE, Jihyun Kwak, *Gwangju Institute of Science and Technology*

8IM.5 12:15 **Characteristics of Nano-Particle Deposition in an Air-Liquid System.** KARI KUUSPALO, Ari Leskinen, Heidi Niskanen, Pasi, I Jalava, Tiina Torvela, Stefanie Kasurinen, Maija-Riitta Hirvonen, Kari Lehtinen, Jorma Jokiniemi, *University of Eastern Finland, Kuopio, Finland*

8IM.6 12:15 **Performance Evaluation of a Recently Developed Aerosol Chemical Speciation Monitor (ACSM).** NEEL KOTRA, Vishal Verma, Jiumeng Liu, Sri Hapsari Budisulistiorini, Wendy Marth, Jason Surratt, Eric Edgerton, Karsten Baumann, Eladio Knipping, Stephanie Shaw, Nga Lee Ng, Rodney Weber, *Georgia Institute of Technology*

8IM.7 12:15 **Development and Validation of an Isokinetic Calibration System for Cross Correlation of Differing Aerosol Measurement Methodologies.** WENDY MERKLEY, Michael Wojcik, Randy Martin, Kori Moore, *Utah State University*

8IM.8 12:15 **Thermal-Optical Scripts for Carbon Aerosol Analysis (TOSCAA): Software Tools for Processing and Analyzing Data from Thermal-Optical Analysis.** JOSEPH CONNY, *National Institute of Standards and Technology*

8IM.9 12:15	**A Two-Stage Versatile Aerosol Concentration Enrichment System (VACES) for Very High Concentration of Ultrafine, PM2.5 and Coarse PM.** DONGBIN WANG, Winnie Kam, Kalam Cheung, Payam Pakbin, Constantinos Sioutas, *University of Southern California*
8IM.10 12:15	**Field and Laboratory Evaluation of a Sequential Time Resolved Aerosol Composition Measurement Instrument.** ARSINEH HECOBIAN, Arantzazu Eiguren-Fernandez, Amy P. Sullivan, Gregory Lewis, Susanne Hering, Charles Henry, Jeffrey L. Collett, *Colorado State University*
8IM.11 12:15	**The Age Old Question: Continuous or 24-hr Integrated Measurements.** Oliver Rattigan, H. Dirk Felton, Kevin Civerolo, JAMES SCHWAB, *New York State Dept. of Environmental Conservation*
8IM.12 12:15	**Method Development for Determination of Trace Concentrations of Aldehydes and Carboxylic Acids in Particulate Matter.** JANA ROUSOVA, Manikyala R. Chintapalli, Anastasia Lindahl, Jana Stavova, Alena Kubatova, *University of North Dakota*
8IM.13 12:15	**The Potential of Bio-nanoparticles as Standard Reference Materials for Mobility Calibration.** MINGDONG LI, Suvajyoti Guha, George Mulholland, Michael Zachariah, *University of Maryland, College Park*
8IM.14 12:15	**Generation of Aerosol Particles of Controlled Mixed Composition.** VASANTHI SIVAPRAKASAM, John Tucker, Jay Eversole, *Naval Research Laboratory*
8IM.15 12:15	**Performance Analysis of a High-Flow Dual-Channel Differential Mobility Analyzer (HD-DMA).** ISHARA HUNGAMA MUDALIGE, Meilu He, Praney Dubey, Suresh Dhaniyala, *Clarkson University*
8IM.16 12:15	**Comparison of Two PM Inlets for Improved Airborne lead Sampling.** QUENTIN MALLOY, Andrew Dart, Jonathan Thornburg, Robert Vanderpool, April Corbett, *RTI International*
8IM.17 12:15	**An Intercomparison of Airborne Aerosol Inlet Performances During ICE-T (2011) campaign.** Arash Moharreri, Lucas Craig, David C. Rogers, SURESH DHANIYALA, *Clarkson University*

8IM.18 12:15 **Aerosol Growth Rate Calculations from HTDMA Data: Sensitivity to Operating Conditions and Quality of Inversion Algorithm.** RAGHAV RAMAN, Meilu He, Suresh Dhaniyala, *Clarkson University*

8IM.20 12:15 **Physico-chemical Assessment of Biodiesel Vehicle Fuel Exhaust Emissions and the Effect of New Emission Control Devices: The EMITTED Study.** NAOMI ZIMMERMAN, Krystal J. Godri, Terry Jung, Cheol-Heon Jeong, Josephine Cooper, James S. Wallace, Greg J. Evans, *SOCAAR, University of Toronto*

8IM.21 12:15 **The USEPA Coarse PM Pilot Speciation Study.** HILARY MINOR, Jay Turner, Steven Brown, Paul Roberts, Joann Rice, *Sonoma Technology, Inc.*

8IM.22 12:15 **Influence of Electrode and Carrier Gas Characteristics on the Measurement of Elemental Concentration of Aerosols Using Spark Plasma Spectroscopy.** Prasoon Diwakar, PRAMOD KULKARNI, *Centers for Disease Control and Prevention, NIOSH*

8IM.23 12:15 **Corona-assisted Microwave Plasma Spectroscopy for Spectrochemical Analysis of Aerosols.** PRAMOD KULKARNI, Philip Efthimion, *Centers for Disease Control and Prevention, NIOSH*

8IM.24 12:15 **Testing of a Battery Powered Data-Logging TSI Water-Based Ultrafine CPC for Mobile Outdoor Use.** ASHISH SINGH, Robert Bullard, Charles Stanier, *University of Iowa*

8IM.25 12:15 **Negative-ion Electrospray as an Ion Source for Chemical Ionization Mass Spectrometry of Atmospheric Gaseous Inorganic/organic Acids and Clusters.** JUN ZHAO, Coty Jen, Modi Chen, Michael J. Lawler, Peter McMurry, James N. Smith, *University of Minnesota*

8IM.26 12:15 **State-of-Art Toolbox for High Resolution De-convolution of Ion-Cluster Signal from Time-of-Flight Mass Spectrometry Data.** HEIKKI JUNNINEN, Gustaf Lönn, Mikael Ehn, Siegfried Schobesberger, Tuukka Petäjä, Douglas Worsnop, Markku Kulmala, *University of Helsinki*

8IM.27 12:15 **Drift Tube Ion Mobility Spectrometry of Sub-10 nm Nanoparticles.** DEREK OBERREIT, Peter McMurry, Christopher Hogan Jr., *University of Minnesota*

8IM.28 12:15 **Comparing Two Laser Ablation Time-of-Flight Aerosol Mass Spectrometers.** SOEREN ZORN, Klaus-Peter Hinz, Tabitha Schwinger, Philip Croteau, Alois Fendt, Bernhard Spengler, Douglas Worsnop, John Jayne, Achim Trimborn, *AeroMegt GmbH*

8IM.29 12:15 **Online Chemical Characterization of Sub-micron Organic Particles Using Direct Analysis in Real Time Mass Spectrometry (DART-MS).** THEODORA NAH, ManNin Chan, Stephen R. Leone, Kevin Wilson, *University of California, Berkeley*

8IM.30 12:15 **Toward In-Situ Characterization of Aerosol Optics with a Supercontinuum Light Source Covering Most of the Solar Spectrum.** Ian Arnold, HANS MOOSMULLER, Noopur Sharma, Claudio Mazzoleni, Patrick Arnott, *Desert Research Institute*

8IM.31 12:15 **Estimating the Primary Particle Size of an Agglomerate Using APM and SMPS.** MIKA IHALAINEN, Terttaliisa Lind, Jorma Jokiniemi, *Paul Scherrer Institut, Switzerland*

8IM.32 12:15 **Potential Effects of Agar Plate Volume on Bioaerosol Impactor Measurement Accuracy.** JENNIFER THERKORN, Gediminas Mainelis, *Rutgers University*

8IM.33 12:15 **Bipolar Neutralization of Spherical Particles <23 nm using Radioactive, X-ray and AC Corona Methods.** JACOB SWANSON, Jean de La Verpilliere, Adam M Boies, *University of Cambridge*

8IM.34 12:15 **New Detection Method of Filter Leak using the Schlieren Shadow-graph Technique.** SHIGERU KIMOTO, Lin Li, Joseph Peterson, David Pui, *University of Minnesota*

8NM NANOPARTICLES AND MATERIALS SYNTHESIS I: POSTERS
EXHIBIT HALL

8NM.1 12:15 **Fabrication of Micron Sized Porous Silicon Particles from Silicon Kerf Loss.** HEE DONG JANG, Dae-Sup Kil, Hankwon Chang, *Korea Institute of Geoscience and Mineral Resources*

8NM.2 12:15 **Inhibition of Thermal Charging of Gold Nanoparticles by Surface Modification.** CHI-TUNG CHIANG, Jeffrey Roberts, *Purdue University*

8NM.3 12:15 **Mass-Mobility Characterization of Flame-made ZrO2 Aerosols: the Primary Particle Diameter and Extent of Aggregation.** MAX L. EGGERSDORFER, Arto Groehn, Chris Sorensen, Peter McMurry, Sotiris E. Pratsinis, *ETH Zurich*

8NM.4 12:15 **A Novel Method for Bacteria Inactivation Using Engineered Water Nanostructures.** GEORGIOS PYRGIOTAKIS, James McDevitt, Toshiyuki Yamauchi, Yosuke Mitsuyama, Philip Demokritou, *Harvard University*

8NM.5 12:15 **Green Synthesis and Characterization of Silver Nanoparticle for Reference Material.** GUO-DUNG CHEN, Han-Fu Weng, *Center for Measurement Standards, ITRI, Taiwan*

8NM.6 12:15 **Aero-Sol-Gel Processing of Porous TiO2 Nanoparticles and Their Photovoltaic Properties in Dye-Sensitized Solar Cells.** KOOK JOO MOON, Ji Young Ahn, Ji Hoon Kim, Soo H. Kim, *Pusan National University*

8NM.7 12:15 **Multi-jet Electrospinning with High-Throughput Using a Coaxial Grooved Nozzle and Two Fluids.** INYONG PARK, Woojin Kim, Sang Soo Kim, *KAIST*

8NM.8 12:15 **Improvement of Amorphous Silica Encapsulation Efficiencies on Welding Fume Particles.** JUN WANG, Jianying Guan, Alex Theodore, Jessica Sharby, Chang-Yu Wu, Kathleen Paulson, Omar Es-Said, *University of Florida*

8NM.9 12:15 **Synthesis of Nanostructured Metal Oxide Films by Electrospray Deposition of Nanoparticles.** JUSTIN TANG, Alessandro Gomez, *Yale University*

8NM.10 12:15 **Near-field Electrospray Printing of Polymer Derived Ceramics.** CHENG LI, Hongxu Duan, Weiwei Yang, Johan Rodriguez, Brandon Lojewski, Linan An, Weiwei Deng, *University of Central Florida*

8NM.11 12:15 **Comparison of Release Profiles of Drug-Loaded PLGA Polymer Particles in Well-Mixed and Encapsulated Forms.** JENNIFER HEAD, Da-Ren Chen, *Washington University*

8NM.12 12:15 **Synthesis of Spherical Mesoporous Silica Particles by Spray Pyrolysis from Aqueous Silicic Acid.** HANKWON CHANG, Jin Woo Lee, Hee Dong Jang, Dae-Sup Kil, Jeong Woo Choi, *Korea Institute of Geoscience and Mineral Resources*

8NM.13 12:15 **Aerosol Synthesis of Surface Modified Lipid Nanoparticles.** Amol Ashok Pawar, Pranav Asthana, CHANDRA VENKATARAMAN, *Indian Institute of Technology Bombay*

8NM.14 12:15 **To Maximize Triple-Phase Interfaces Between Fuel, Electrolyte, and Electrode of Direct Coal Fuel Cell Through CeO2 Coating.** CHENGGUO LI, Donggeun Lee, *Pusan National University, Busan, South Korea*

8NM.15 12:15 **Aerosol-Gel Synthesis of Pt-Based Catalysts for Hydrocarbon-Based Selective Catalytic Reduction of Nitrogen Mono-Oxide.** RIYAN ZAHAF, Jae Wook Jung, Dudi Adi Firmansyah, Yongho Kim, Donggeun Lee, *Pusan National University, Busan, South Korea*

8NM.16 12:15 **A Cost-Effective Method of Aerosolizing Dry Powdered Nanomaterials.** Andrea Tiwari, LINSEY MARR, Caleb Fields, *Virginia Tech*

8RA REMOTE AND REGIONAL ATMOSPHERIC AEROSOLS I: POSTERS
EXHIBIT HALL

8RA.1 12:15 **Studies of the Optical Properties of Mineral Dust Aerosol from the IR to the Visible.** JENNIFER ALEXANDER, Olga Laskina, Brian Meland, Vicki Grassian, Mark Young, Paul Kleiber, *University of Iowa*

8RA.3 12:15 **Measurement of Free Tropospheric Aerosols in the North Atlantic at the Pico Mountain Observatory.** KATJA DZEPINA, Sumit Kumar, Claudio Mazzoleni, Paulo Fialho, Mike Dziobak, Jacques Hueber, Detlev Helmig, Louisa Kramer, Seth Olsen, Lynn Mazzoleni, *Michigan Technological University*

8RA.4 12:15 **Source Identification and Long-term Trend Analysis of Finnish Arctic Aerosols.** JAMES R. LAING, Philip K. Hopke, Liaquat Husain, Vincent A. Dutkiewicz, Jussi Paatero, Tanveer Ahmed, *Clarkson University*

8RA.5 12:15 **Aerodynamic Chracteristics of Fugitive Dusts by the Types of Animal Feed Stuffs Duing Gravitational Settle Down.** Hak-Joon Kim, Bangwoo Han, YONG-JIN KIM, *Korea Institute of Machinery and Materials*

8RA.6 12:15 **Aerosol Emissions by Bitter-Salty Lakes in the Altai Territory in the Summer of 2011.** ALEXANDR SAFATOV, Galina Buryak, Sergei Olkin, Irina Reznikova, Yurii Marchenko, Boris Desyatkov, Natalya Lapteva, Irina Andreeva, Alexander Kozlov, Sergei Malyshkin, Igor Sutorihin, Vladimir Bukatyi, Svetlana Litvinenko, Boris Smolyakov, Marina Shinkorenko, *FBRI SRC VB Vector*

8RA.7 12:15 **Assimilation of TES Ammonia and Ground-based Aerosol Observations during CalNEX to Refine Emissions Estimates.** SHANNON CAPPS, Daven Henze, Armistead Russell, Athanasios Nenes, *Georgia Institute of Technology*

8RA.8 12:15 **Determination of Seasonal and Height Resolved Number Concentration Patterns in a Pollution Impacted Rural Continental Location.** ROBERT BULLARD, Charles Stanier, Patrick Sheridan, John Ogren, *University of Iowa*

8RA.9 12:15 **Characterizing the Influence of Transport Variability on Aerosol Concentrations at Mauna Loa Observatory.** LAUREN POTTER, Sonia Kreidenweis, Molly Morman, Barry Huebert, Steven Howell, John Zhuang, *Colorado State University*

8RA.10 12:15 **Application of an Ultrafine V-TDMA to Atmospheric Aerosols in Eastern Iowa.** ASHISH SINGH, Robert Bullard, Charles Stanier, *University of Iowa*

8RA.11 12:15 **Two Years of Measurements of Atmospheric Aerosols at a Remote Mountain Site in NE of Spain.** ANNA RIPOLL, Jorge Pey, Andrés Alastuey, María-Cruz Minguillón, Xavier Querol, *IDAEA-CSIC*

8RA.12 12:15 **Characterization of Tropospheric Aerosols in a Remote Mountain Site in NE of Spain with an Aerosol Chemical Speciation Monitor.** ANNA RIPOLL, María-Cruz Minguillón, Jorge Pey, Marco Pandolfi, Andrés Alastuey, Xavier Querol, Jose-Luis Jimenez, Douglas Day, *IDAEA-CSIC*

8RA.13 12:15 **Characterization of Bioaerosols Isolated from Atacama Desert, Chile.** GUISELLA ESCALANTE, Carla León, Victor Campos, Roberto Urrutia, María Angélica Mondaca, *Universidad de Concepción, Chile*

8RA.14 12:15 **Development of a Process-Based Model for the Estimation of Beef Cattle Ammonia Emissions.** ALYSSA MOORE, Peter Adams, *Carnegie Mellon University*

8RA.15 12:15 **Free Tropospheric Aerosol Measurements at the Pico Mountain Observatory, Azores (2225m asl).** CLAUDIO MAZZOLENI, Lynn Mazzoleni, Paulo Fialho, Sumit Kumar, Katja Dzepina, Mike Dziobak, Louisa Kramer, Seth Olsen, Robert Owen, Detlev Helmig, Jacques Hueber, Swarup China, *Michigan Technological University*

8SA SOURCE APPORTIONMENT III: POSTERS
EXHIBIT HALL

8SA.1 12:15 **Improving Particulate Matter Source Apportionment: A Hybrid Approach Utilizing Chemical Transport and Receptor Models with Geostatistical Methods.** CESUNICA IVEY, Heather Holmes, Yongtao Hu, Armistead Russell, James Mulholland, *Georgia Institute of Technology*

8SA.2 12:15 **Status of Air Quality: Experience in Bangladesh.** BILKIS ARA BEGUM, Philip K. Hopke, Andreas Markwitz, *Atomic Energy Centre*

8SA.3 12:15 **Identifying Key Sources of Ambient PM1 During Foggy and Clear Winter Days and Nights at Kanpur (India).** TARUN GUPTA, Anil Mandaria, *IIT Kanpur*

8SA.4 12:15 **Chemical Source Profiles for Airborne Crustal Material Over a Region in Central India.** RAMYA SUNDER RAMAN, Rohit Sirvaiya, Masood Ayub Kaloo, *Indian Institute of Science Education and Research, Bhopal*

8SA.5 12:15 **Verification of Fire Weather Forecasts Using PM2.5 Sensitivity Analysis.** SIVARAMAN BALACHANDRAN, Karsten Baumann, Jorge Pachon, James Mulholland, Armistead Russell, *Georgia Institute of Technology*

8SA.6 12:15 **Characterization of Re-suspended Soil Dust Samples from Sources Common in the Desert Southwest United States.** ANDREA CLEMENTS, Matthew Fraser, Nabin Upadhyay, Pierre Herckes, Paul A. Solomon, *Arizona State University*

8SA.7 12:15 **Sources of Ultrafine Particles in the Atmosphere over the Eastern United States.** LAURA POSNER, Spyros Pandis, *Carnegie Mellon University*

8SA.8 12:15 **Source Apportionment of Particles in London Paddington Station.** UVEN CHONG, Jacob Swanson, Adam M Boies, *University of Cambridge*

8SA.9 12:15 **Positive Matrix Factorization of PM2.5 -- Uncertainty and Bias Assessment of Factor Contribution.** MINGJIE XIE, Joshua Hemann, Steven Dutton, Jana Milford, Shelly Miller, Michael Hannigan, *University of Colorado at Boulder*

Thursday 1:45 PM - 3:00 PM
Session 9: Platform

9AC AEROSOL CHEMISTRY VII
NICOLLET A

Yong Liu and Andrew Lambe, chairs

9AC.1 1:45 **Effects of Thermal Decomposition and Ion Fragmentation on Elemental Ratios and Chemical Compositions Measured with High Resolution Aerosol Mass Spectrometry.** MANJULA CANAGARATNA, Paola Massoli, Leah Williams, Sean Kessler, Edward Fortner, John Jayne, Kevin Wilson, Jesse Kroll, Douglas Worsnop, *Aerodyne Research, Inc.*

9AC.2 2:00 **MOVI-CIMS Measurements of Organic Aerosol Generated by a Potential Aerosol Mass (PAM) Reactor.** PUNEET CHHABRA, Andrew Lambe, Timothy Onasch, Manjula Canagaratna, John Jayne, Scott Herndon, Douglas Worsnop, Paul Davidovits, *Aerodyne Research, Inc.*

9AC.3 2:15 **A Source of Oxygenated Organic Aerosol and Oligomers from Primary Emitted Gases.** JOHN LIGGIO, Shao-Meng Li, Alexander Vlasenko, *Environment Canada*

9AC.4 2:30 **Oligomer-like Aerosol Formation from the Reactions of Secondary and Tertiary Amines with Hydroxyl and Nitrate Radicals.** DEREK PRICE, Xiaochen Tang, David R. Cocker III, Kathleen Purvis-Roberts, Philip Silva, *University of California, Riverside*

9AC.5 2:45 **Particle Size-Dependent Incorporation of Dimethylamine into Ammonium Sulfate and Nitrate Nanoparticles.** BRYAN R. BZDEK, Andrew Horan, M. Ross Pennington, Murray Johnston, *University of Delaware*

9AP AEROSOL PHYSICS IV
MIRAGE ROOM

Rajan Chakrabarty and Kihong Park, chairs

9AP.1 1:45 **Agglomerate and Spherical Nanoparticle Penetration Through Nuclepore Filters: Models and Experiment.** SHENG-CHIEH CHEN, Jing Wang, Heinz Fissan, David Pui, *University of Minnesota*

9AP.2 2:00 **Variation in Aerosol Nucleation and Growth in Coal-Fired Power-Plant Plumes due to Background Aerosol, Meteorology and Emissions: Sensitivity Analysis and Parameterization.** ROBIN STEVENS, Jeffrey Pierce, *Dalhousie University*

9AP.3 2:15 **A Study on Mixing Structure of Atmospheric Ultrafine Particles by Using the Thermo-Denuder HTDMA System.** Kihong Park, JAE-SEOK KIM, *School of Environmental Science and Engineering, Gwangju Ins*

9AP.4 2:30 **Reconciling Surface-Based Aerosol Retrievals with In-situ Aircraft Measurements in the Baltimore-Washington Area during DISCOVER-AQ.** SUZANNE CRUMEYROLLE, Luke Ziemba, Andreas Beyersdorf, Lee Thornhill, Edward Winstead, Gao Chen, Joel Schafer, Brent Holben, Richard Moore, Bruce Anderson, *NASA Langley Research Center*

9AP.5 2:45 **Validation of the Particle-Resolved Aerosol Model PartMC With Data from Chamber Experiments.** JIAN TIAN, Nicole Riemer, Benjamin T. Brem, Tami Bond, Mark Rood, Martin Schnaiter, Karl-Heinz Naumann, *University of Illinois at Urbana-Champaign*

9CA CARBONACEOUS AEROSOLS IN THE ATMOSPHERE III
NICOLLET B/C

James Allan and Dave Worton, chairs

9CA.1 1:45 **Soot Aggregate Restructuring: Effect of Surface Chemistry and Water Condensation.** XIAOFEI MA, Christopher Zangmeister, George Mulholland, Michael Zachariah, *University of Maryland-College Park*

9CA.2 2:00 **Soot Aggregate Restructuring Due to Coatings of Oleic Acid and Dioctyl Sebacate.** Rouzbeh Ghazi, JASON OLFERT, *University of Alberta*

9CA.3 2:15 **Characterization of Black Carbon Aging Processes with a Size-Dependent Timescale.** LAURA FIERCE, Nicole Riemer, Tami Bond, *University of Illinois at Urbana-Champaign*

9CA.4 2:30 **Diurnal Variations and the Effect of Atmospheric Transport on Black Carbon Mixing State: Observations from the 2010 Carbonaceous Aerosols and Radiative Effects Study (CARES).** R. SUBRAMANIAN, Arthur Sedlacek, Rahul Zaveri, *RTI International*

9CA.5 2:45 **Black Carbon Optical Properties Measured in Pasadena, Los Angeles During CalNex.** Jonathan Taylor, JAMES ALLAN, Michael Flynn, Patrick Hayes, Jose-Luis Jimenez, Barry Lefer, Hugh Coe, *University of Manchester*

9HA HEALTH RELATED AEROSOLS III: HEALTH EFFECTS
LAKE SUPERIOR

Gediminas Mainelis and David Alburty, chairs

9HA.1 1:45 **Effects of Ambient Air Pollution on Daily Morbidity in a Developing Mega City.** HAIDER A KHWAJA, Daniel Malashock, Zafar Fatmi, Azhar Siddique, Zafar Aminov, David Carpenter, *Wadsworth Center, University at Albany*

9HA.2 2:00 **Characterization of Ambient Air Pollution Measurement Error in a Time-Series Health Study using a Geostatistical Simulation Approach.** GRETCHEN GOLDMAN, James Mulholland, Armistead Russell, Katherine Gass, Matthew Strickland, Paige Tolbert, *Georgia Institute of Technology*

9HA.3 2:15 **Toxicological Effects of Fresh and Aged Particulate Matter Emissions from a Wood Stove in Two Different Combustion Conditions.** PASI, I JALAVA, Oskari Uski, Joakim Pagels, Erik, Z Nordin, Axel Eriksson, Christoffer Boman, Robin Nyström, Jorma Jokiniemi, Maija-Riitta Hirvonen, *University of Eastern Finland, Kuopio, Finland*

9HA.4 2:30 **Investigation of Air and Soil Pollution Control and Health Effects of the Population in Mitrovica.** AFRIM SYLA, Rizah Hajdini, *University of Prishtina, Kosovo*

9HA.5 2:45 **Traffic Related Emissions and the Risk of Pulmonary Impairment Among Traffic Wardens in Two Selected Local Councils in South Western Nigeria.** GODSON ANA, John Olamijulo, *University of Ibadan*

9IM INSTRUMENTATION AND METHODS VIII
REGENCY ROOM

Markus Petters and Mike Cubison, chairs

9IM.1 1:45 **Droplet Growth Kinetics from Scanning Flow CCN Analysis Data Using an Instrument Model.** Tomi Raatikainen, Terry Lathem, Jack Lin, Richard Moore, ATHANASIOS NENES, *Georgia Institute of Technology*

9IM.2 2:00 **Accurate Determination of Aerosol Activity Coefficients at Relative Humidities up to 99% Using the Hygroscopicity Tandem Differential Mobility Analyzer Technique.** SARAH SUDA, Markus Petters, Timothy Wright, *North Carolina State University*

9IM.3 2:15 **A Novel Compact Aerosol Mass Spectrometer - the ToF-ACSM: Instrument Performance and First Field Deployment.** Roman Fröhlich, MICHAEL CUBISON, Jay Slowik, Andre Prévôt, Urs Baltensperger, Urs Rohner, Marc Gonin, Joel Kimmel, Douglas Worsnop, John Jayne, *Tofwerk AG*

9IM.4 2:30 **First Field Application of a Thermal Desorption Resonance-Enhanced Multiphoton-Ionisation Single Particle Time-of-Flight Mass Spectrometer for On-line Measurements of Particle Bound Polycyclic Aromatic Hydrocarbons and Source Identification.** MARKUS OSTER, Michael Elsasser, Jürgen Schnelle-Kreis, Ralf Zimmermann, *Helmholtz Zentrum München*

9IM.5 2:45 **Laser Ablation Aerosol Mass Spectrometry for Molecular Analysis of Biological Materials.** LIZABETH ALEXANDER, Matthew Newburn, Douglas Day, Jose-Luis Jimenez, Manjula Canagaratna, Douglas Worsnop, Vanessa Bailey, *Pacific Northwest National Laboratory*

9SA SOURCE APPORTIONMENT IV
NICOLLET D

Jason Surratt and Steven Trabue, chairs

9SA.1 1:45 **Chemical Characterization of Ice-Nucleating Bacteria by Aerosol Mass Spectrometry.** ROBERT WOLF, Jay Slowik, Johannes Schneider, Caroline Oehm, Ottmar Möhler, Andre Prévôt, Urs Baltensperger, *Paul Scherrer Institute*

9SA.2 2:00 **Real-time Continuous Characterization and Quantification of Isoprene Epoxydiol (IEPOX)-Derived Secondary Organic Aerosol in Downtown Atlanta, Georgia Using the Aerodyne Aerosol Chemical Speciation Monitor (ACSM).** SRI HAPSARI BUDISULISTIORINI, Manjula Canagaratna, Philip Croteau, Wendy Marth, Karsten Baumann, Eric Edgerton, Stephanie Shaw, Eladio Knipping, John Jansen, Roger Tanner, Douglas Worsnop, John Jayne, Jason Surratt, *University of North Carolina at Chapel Hill*

9SA.3 2:15 **Characterizing Carbonaceous Materials Emitted from Animal Feeding Operations.** STEVEN TRABUE, Kenwood Scoggin, Laura McConnell, Ronaldo Maghirang, Alam Hasson, Segun Ogunjemiyo, *USDA-ARS*

9SA.4 2:30 **Source Apportionment of EC and OC in Beijing: Comparison between 14C Measurement and Chemical Transport Model.** YU MORINO, Toshimasa Ohara, Shuichi Hasegawa, Akihiro Fushimi, Miyuki Kondo, Masao Uchida, Kiyoshi Tanabe, Kazuyo Yamaji, Bin Zhao, Jiayu Xu, Jiming Hao, *National Institute for Environmental Studies*

9SA.5 2:45 **Off-Line Organic Aerosol Analyses of Filter Samples Using Aerosol Mass Spectrometry.** IMAD EL HADDAD, Kaspar Dällenbach, Peter Zotter, Jay Slowik, Urs Baltensperger, Andre Prévôt, *Paul Scherrer Institute*

Thursday 3:00 PM - 3:30 PM
Coffee Break

Thursday 3:30 PM - 5:00 PM
Session 10: Platform

10AC AEROSOL CHEMISTRY VIII
NICOLLET A

Markus Petters and Lea Hildebrandt-Ruiz, chairs

10AC.1 3:30 **Potential Aerosol Mass (PAM) Chamber Measurement in the Ambient Air for the Secondary Aerosol Formation and Oxidation Potential of Air Masses Transported from Korea and China.** EUNHA KANG, William Brune, Taehyoung Lee, Joon-young Ahn, Meehye Lee, *Korea University, South Korea*

10AC.2 3:45 **Volatility and Gas-Particle Partitioning of Organic Acids in a Ponderosa Pine Forest.** LAXMINARASIMHA YATAVELLI, Harald Stark, Samantha Thompson, Joel Kimmel, Douglas Day, Pedro Campuzano-Jost, Michael Cubison, Joel A. Thornton, John Jayne, Douglas Worsnop, Jose-Luis Jimenez, *University of Colorado, Boulder*

10AC.3 4:00 **Closing the Gas Phase Organic Carbon Budget in Aircraft Engine Exhaust: Characterizing Low Volatility Organic Compounds (LVOCs).** EBEN CROSS, James Hunter, Jonathan Franklin, Scott Herndon, Richard Miake-Lye, Michael Timko, Yu Zhenhong, Edward Fortner, John Jayne, Douglas Worsnop, Jesse Kroll, *MIT*

10AC.4 4:15 **Atmospheric Chemistry of Sea Salt Particles Internally Mixed with Secondary Organic Material: Surprising Reactivity of NaCl with Weak Organic Acids.** Alexander Laskin, BINGBING WANG, Alla Zelenyuk, Jacqueline Wilson, John Shilling, Rahul Zaveri, Jerome Fast, Alexei Tivanski, Mary Gilles, Ryan Moffet, Steven Kelly, Nigge Pascal, *Pacific Northwest National Laboratory*

10AC.5 4:30 **Contribution of Cooking Emissions to Primary and Secondary Organic Aerosol in Urban Atmospheres.** IMAD EL HADDAD, Stephen Platt, Jay Slowik, Claudia Mohr, Monica Crippa, Brice Temime-Roussel, Anaïs Detournay, Nicolas Marchand, Urs Baltensperger, Andre Prévôt, *Paul Scherrer Institute*

10AC.6 4:45 **Real-Time Secondary Organic Aerosol Formation from Ambient Air using the Potential Aerosol Mass (PAM) – Aerosol Mass Spectrometer.** JOSE-LUIS JIMENEZ, Amber Ortega, Brett Palm, Douglas Day, Pedro Campuzano-Jost, Patrick Hayes, William Brune, Rui Li, Daniel Bon, Joost de Gouw, Lisa Kaser, Thomas Karl, Juliane L. Fry, Kyle Zarzana, Steven Brown, et al., *University of Colorado*

10AP AEROSOL PHYSICS V

MIRAGE ROOM

Will Cantrell and Weiwei Deng, chairs

10AP.1 3:30 **Polarized Elastic Scatter Measurements from Optically Trapped Micron Sized Individual Particles.** VASANTHI SIVAPRAKASAM, Jozsef Czege, Jay Eversole, *Naval Research Laboratory*

10AP.2 3:45 **Infrared Extinction Spectra of Mineral Dust Aerosol.** OLGA LASKINA, Jennifer Alexander, Mark Young, Paul Kleiber, Vicki Grassian, *University of Iowa*

10AP.3 4:00 **Toward Understanding the Role of Turbulence in Enhancing Particle Deposition onto Vegetation.** Eric Pardyjak, John Veranth, TIM PRICE, Sean Moran, *University of Utah*

10AP.4 4:15 **Coulombic Fission of Ionic Salt Solution Droplets at Super-Rayleigh Limits.** ASIT RAY, Kuo-Yen Li, *University of Kentucky*

10AP.5 4:30 **The Effects of Small Scale Interactions on Liquid Particle Formation in Spray.** WANJIAO LIU, Sean Garrick, Michael Cloeter, *University of Minnesota*

10AP.6 4:45 **The Effect of Shape on the Electrical Mobility "Diameter" of Mineral Dust.** Swarup China, Kristopher Bunker, Claudio Mazzoleni, ALEXANDER KOSTINSKI, Will Cantrell, *Michigan Technological University*

10CA CARBONACEOUS AEROSOLS IN THE ATMOSPHERE IV
NICOLLET B/C

Andre Prevot and Jason Olfert, chairs

10CA.1 3:30 **Differences in the Carbon Finger Print for Different Soot Sources.** AMEWU A. MENSAH, Joel Corbin, Berko Sierau, *Institute of Atmospheric and Climate Science*

10CA.2 3:45 **The Examination of Mass Spectral Signatures With Different Black Carbon Sources Utilizing a SP-AMS Instrument.** EDWARD FORTNER, Timothy Onasch, Leah Williams, Paola Massoli, William Brooks, Manjula Canagaratna, Puneet Chhabra, Jonathan Franklin, Achim Trimborn, Scott Herndon, John Jayne, Douglas Worsnop, *Aerodyne Research, Inc.*

10CA.3 4:00 **Characterization of Black Carbon Containing Particles Measured by the Soot Particle Aerosol Mass Spectrometer on Board the R/V Atlantis during the 2010 CalNex Study.** TIMOTHY ONASCH, Paola Massoli, Shao-Meng Li, Katherine Hayden, Christopher Cappa, Ibraheem Nuaanman, Donna Sueper, Douglas Worsnop, *Aerodyne Research, Inc.*

10CA.4 4:15 **Transformation of Diesel Soot Investigated in a Smog Chamber.** JOAKIM PAGELS, Axel Eriksson, Jenny Rissler, Jonathan Carlsson, Cerina Wittbom, Erik, Z Nordin, Patrik Nilsson, Pontus Roldin, Birgitta Svenningsson, Erik Swietlicki, *Lund University, Lund, Sweden*

10CA.5 4:30 **Speciated Characterization of Primary Organic Aerosol Emissions from on Road Gasoline and Diesel Vehicles.** DAVID WORTON, Gabriel Isaacman, Drew Gentner, Arthur Chan, Chris Ruehl, Timothy Dallmann, Thomas Kirchstetter, Kevin Wilson, Robert Harley, Allen H. Goldstein, *University of California, Berkeley*

10CA.6 4:45 **Chemical Characterization of Aircraft Engine Soot from JP-8, Fischer-Tropsch and Alternative Fuel Surrogates by Micro-FTIR Spectroscopy.** JEREMY CAIN, Alexander Laskin, Edwin Corporan, David Blunck, Paul Gassman, William Roquemore, *Air Force Research Laboratory/Propulsion Directorate*

10HA HEALTH RELATED AEROSOLS IV: LUNG DEPOSITION
LAKE SUPERIOR

Yung-Sung Chen and Chong Kim, chairs

10HA.1 3:30 **Motion of Ellipsoidal Fibers in Human Tracheobronchial Tree.** LIN TIAN, Goodarz Ahmadi, Philip K. Hopke, Yung-Sung Cheng, *Clarkson University*

10HA.2 3:45 **Respiratory Deposition of Fine and Coarse Particles During Moderate Exercise.** CHONG KIM, Shu-Chieh Hu, *USEPA*

10HA.3 4:00 **Deposition of Carbon Nanotubes in a Human Nasal Airway Replica.** WEI-CHUNG SU, Bahman Asgharian, Yung-Sung Cheng, *Lovelace Respiratory Research Institute*

10HA.4 4:15 **Comparative Total Lung Deposition for the Two In-vivo Nano-Aerosol Inhalation Studies.** VLADIMIR MIKHEEV, William Forsythe, Kevin Minard, Wei Wang, *Battelle Memorial Institute*

10HA.5 4:30 **Idealized Infant and Child Throats for Mimicking Average Extrathoracic Deposition.** Warren Finlay, Laleh Golshahi, Emad Javaheri, CONOR RUZYCKI, *University of Alberta*

10HA.6 4:45 **Evaluation of Drug Particle Deposition in Mouse Lung via Inhalation.** JINGJIE ZHANG, Da-Ren Chen, Yian Wang, *Washington University in St. Louis*

10IM INSTRUMENTATION AND METHODS IX
REGENCY ROOM

Miriam Freedman and Derek Oberreit, chairs

10IM.1 3:30 **The Effects of Ammonium Nitrate Equilibrium on Real-Time Measurements Particulate Nitrate.** YONG J. LI, Berto Lee, Chak K. Chan, *Hong Kong University of Science and Technology*

10IM.2 3:45 **Evaluation of a Particle Trap Laser Desorption Mass Spectrometer (PT-LDMS) for Online Measurements of Aerosol Composition.** NOBUYUKI TAKEGAWA, Takuma Miyakawa, Naoki Takeda, Masahiko Takei, Noritomo Hirayama, *RCAST, University of Tokyo*

10IM.3 4:00 **Photophoretic Trapping of Absorbing Particles in Air and Measurement of Their Single-Particle Raman Spectra.** YONG-LE PAN, Steve Hill, Mark Coleman, *US Army Research Laboratory*

10IM.4 4:15 **Laboratory Evaluation of Selected Methods for Determining Black Carbon Source Emissions.** JOHN KINSEY, Jelica Pavlovic, *U.S. EPA*

10IM.5 4:30 **The Use of Cavity Ring-Down Spectroscopy to Quantify Mineral Dust Optical Properties.** Daniel P. Veghte, MIRIAM A. FREEDMAN, *The Pennsylvania State University*

10IM.6 4:45 **A Balloon-Borne Platform for Measuring Vertically Resolved Concentrations of Black Carbon in the Troposphere.** DANIEL WILSON, Odelle Hadley, Craig Corrigan, Jeff Blair, Thomas Kirchstetter, *Lawrence Berkeley National Laboratory*

10RA REMOTE AND REGIONAL ATMOSPHERIC AEROSOLS II

NICOLLET D

Lynn Russell and Allen Robinson, chairs

10RA.1 3:45 **Regional Signatures from Seawater in Atmospheric Particles.** AMANDA FROSSARD, Lynn Russell, Patricia Quinn, Timothy Bates, Scott Elliot, *Scripps Institution of Oceanography*

10RA.2 3:30 **Chlorophyll-a and Other Ocean Color Products as Predictive Tools of the Organic Mass Fraction in Submicron Sea Spray.** MATTEO RINALDI, Sandro Fuzzi, Stefano Decesari, Salvatore Marullo, Rosalia Santoleri, Antonello Provenzale, Jost von Hardenberg, Darius Ceburnis, Colin O'Dowd, M. Cristina Facchini, *CNR-ISAC*

10RA.3 4:00 **Aerosol Hygroscopicity in a Mixed-Deciduous Forest During CABINEX 2009.** George R. Mwaniki, Rosenkrance Chelsea, Mark E. Erupe, Shelley Pressley, TIMOTHY M. VANREKEN, *Washington State University*

10RA.4 4:15	**LADCO Winter Nitrate Study – Sensitivity of 2009 Winter PM2.5 to Modeled Reductions in NOx and and Ammonia.** CHARLES STANIER, Scott Spak, Yoo Jung Kim, Jessica Carlson, Jaemeen Baek, Gregory Carmichael, Abigail Fontaine, Mark Janssen, Michael Koerber, Nicole Riemer, Stephanie Shaw, *University of Iowa*
10RA.5 4:30	**Current and Future Impacts of Natural Gas Drilling in the Marcellus Shale on Regional NOx, VOC and PM2.5 Emissions.** ANIRBAN ROY, Peter Adams, Allen Robinson, *Carnegie Mellon University*
10RA.6 4:45	**Real-World Emission Characterization in the Canadian Oil Sands Region.** XIAOLIANG WANG, Steven Kohl, Judith Chow, John Watson, *Desert Research Institute*

Friday 8:00 AM - 9:15 AM
Plenary IV

8:00	**Multiphase Oxidation Chemistry: Impacts on Both the Gas Phase and Aerosol** Jonathan Abbatt. *University of Toronto, Canada.*
	Moderator Alexander Laskin. *Pacific Northwest National Laboratory.*
9:00	**Student Poster Competition Award Presentation** Peter DeCarlo, Student Poster Program Chair. *Drexel University.*
9:10	**Concluding Remarks and Preview for 2013** Sergey Nizkorodov and Murray Johnston, 2012 & 2013 Conference Chairs. *University of California, Irvine and University of Delaware.*

Friday 9:15 AM - 9:45 AM
Coffee Break

Friday 9:45 AM - 11:00 AM
Session 11: Platform

11AC AEROSOL CHEMISTRY IX
NICOLLET A

Ryan Sullivan and Jesse Kroll, chairs

11AC.1 9:45	**Laboratory and Field Studies of Organic Aerosol Aging Using Nanospray-DESI High-Resolution Mass Spectrometry.** ALEXANDER LASKIN, Julia Laskin, Peter Eckert, Tran Nguyen, Paula Lee, Katelyn Updyke, David Bones, Sergey Nizkorodov, Rachel O'Brain, Allen H. Goldstein, *Pacific Northwest National Laboratory*
11AC.2 10:00	**Brown Carbon Formation from Reactions of Limonene-derived Ketoaldehydes with Ammonium Sulfate and Amino Acids.** TRAN NGUYEN, Sergey Nizkorodov, *University of California, Irvine*
11AC.3 10:15	**Real Refractive Indices and Volatility of Secondary Organic Aerosol Generated from Ozonolysis and Photooxidation of Limonene, Alpha-Pinene and Toluene upon Heating.** Hwajin Kim, SUZANNE PAULSON, *University of California Los Angeles*

11AC.4 10:30 **Measurements of Nitrogen-Containing Organic Particle and Gas Phase Compounds with a New MOVI-HR-ToF-CIMS.** CLAUDIA MOHR, Felipe Lopez-Hilfiker, Julia. D. Wargo, Nga Lee Ng, Lu Xu, Matthew Kollman, Peter Zotter, Andre Prévôt, Scott Herndon, Jonathan Franklin, Mark Zahniser, Leah Williams, Douglas Worsnop, Joel A. Thornton, *University of Washington*

11AC.5 10:45 **Quantification of Organosulfate Formation in the SOA with Preexisting Acidic Sulfate Aerosol.** JIAYING LI, Myoseon Jang, *University of Florida*

11CA CARBONACEOUS AEROSOLS IN THE ATMOSPHERE V

NICOLLET B/C

Tim Onasch and Arthur Chan, chairs

11CA.1 9:45 **Primary to Secondary Organic Aerosol: Evolution of Emissions from Combustion Sources.** ALBERT A. PRESTO, Timothy Gordon, Christopher Hennigan, Marissa Miracolo, Allen Robinson, *Carnegie Mellon University*

11CA.2 10:00 **Road Vehicle Primary and Secondary Organic Aerosol.** ANDRE PRÉVÔT, Stephen Platt, Alessandro Zardini, Clairotte Michael, Covadonga Astorga, Robert Wolf, Imad El Haddad, Jay Slowik, Brice Temime-Roussel, Nicolas Marchand, Irena Jezek, Luka Drinovec, Grisa Mocnik, Ottmar Möhler, Urs Baltensperger, *Paul Scherrer Institute*

11CA.3 10:15 **Organic Aerosol Formation and Processing in the Los Angeles Basin: Role of Gasoline vs. Diesel Emissions.** ROYA BAHREINI, Ann Middlebrook, Joost de Gouw, Carsten Warneke, Michael Trainer, Charles Brock, Harald Stark, Steven Brown, William P. Dube, Jessica Gilman, Katharine Hall, John Holloway, William C. Kuster, Anne Perring, Andre Prévôt, Joshua P. Schwarz, J. Ryan Spackman, Soenke Szidat, Nick Wagner, Rodney Weber, Peter Zotter, David D. Parrish, *CU CIRES- NOAA ESRL*

11CA.4 10:30 **Unresolved Complex Mixture Emissions from Combustion Sources and Their Potential to Form Secondary Organic Aerosol.** SHANTANU JATHAR, Havala Pye, Peter Adams, Allen Robinson, *Carnegie Mellon University*

11CA.5 10:45 **On-Road Gasoline and Diesel Engine Exhaust Naphthalene Emissions: Contributions to Regional SOA Formation in Southern California.** Alexander Cohan, Donald Dabdub, Arantzazu Eiguren-Fernandez, ANTONIO H. MIGUEL, *University of California, Irvine*

11HA HEALTH RELATED AEROSOLS V: NANOAEROSOLS AND HEALTH
LAKE SUPERIOR

Bahman Asgharian and Michael Oldham, chairs

11HA.1 9:45 **An in Vitro Model for Tracking Translocation of Industrially Relevant Engineered Nanomaterials across the Alveolar Epithelium: The Importance of Size, Surface Chemistry, and Particle Kinetics.** JOEL COHEN, Ramon Molina, Joseph Brain, Philip Demokritou, *Harvard University*

11HA.2 10:00 **Transport Properties of Airborne Nanomaterials.** BON KI KU, Pramod Kulkarni, *Centers for Disease Control and Prevention, NIOSH*

11HA.3 10:15 **Aerosol Emission Monitoring in the Production of Silicon Carbide Nanoparticles by Induction Plasma Synthesis.** DREW THOMPSON, Jing Wang, Jelena Buha, Christian Jaeggi, Marc Leparoux, David Pui, *University of Minnesota*

11HA.4 10:30 **An Inhalation Toxicological Characterization of Nano CeO2 Using the Harvard VENGES Toxicological Platform.** Georgios Pyrgiotakis, Samuel Gass, William Goldsmith, David Frazer, Jane Ma, Walter McKinney, Mark Barger, Bridget Dolash, Vincent Castranova, PHILIP DEMOKRITOU, *Harvard University*

11HA.5 10:45 **Evaluation of the Toxicological Potential of Silver Nanoparticles.** STEFANIE KASURINEN, Pasi, I Jalava, Kari Kuuspalo, Ari Leskinen, Kati Huttunen, Jorma Jokiniemi, Kari Lehtinen, Maija-Riitta Hirvonen, *University of Eastern Finland, Kuopio, Finland*

11IM INSTRUMENTATION AND METHODS X
REGENCY ROOM

Jelica Pavlovic and Yue Zhou, chairs

11IM.1 9:45 **Development of Variable-Flow Rate Isokinetic Sampling System for 0.5-15 Micro-Meter Particles.** HIROKAZU ICHITSUBO, Yoshio Otani, *Japan Tobacco Inc.*

11IM.2 10:00 **Aspiration Efficiency Evaluation of Two Specific Personal Samplers.** YUE ZHOU, Hammad Irshad, Chuen-Jinn Tsai, Shao-Ming Hung, Bean Chen, Yung-Sung Cheng, *Lovelace Respiratory Research Institute*

11IM.3 10:15 **Examination of Sampler Efficiency of Thin-Walled Reference Samplers in Low Velocity Freestreams.** KIMBERLY ANDERSON, T. Renee Anthony, *University of Iowa*

11IM.4 10:30 **Experimental Study of a Miniature Dumbbell Electrical Aerosol Classifier (Dumbell EAC).** SIQIN HE, Da-Ren Chen, *Washington University*

11IM.5 10:45 **Bipolar Charge Measurement for DPI (Dry Powder Inhaler) Particles.** JONNA KANNOSTO, Ville Niemelä, Henna Isherwood, Jaakko Yli-Ojanperä, Jorma Keskinen, Risto Hillamo, Anna Frey, Steve Layzell, David Prime, Ari Ukkonen, *Dekati Ltd., Tampere, Finland*

11NM NANOPARTICLES AND MATERIALS SYNTHESIS II

MIRAGE ROOM

Xiaofei Ma and Jun Wang, chairs

11NM.1 9:45 **The Sintering Rate of Aerosol Nanoparticles.** Beat Buesser, Arto Groehn, SOTIRIS E. PRATSINIS, *ETH Zurich*

11NM.2 10:00 **A Safer Formulation Concept for Flame-Generated Engineered Nanomaterials (ENMs).** Samuel Gass, GEORGIOS PYRGIOTAKIS, Joel Cohen, Georgios A. Sotiriou, Sotiris E. Pratsinis, Philip Demokritou, *Harvard University*

11NM.3 10:15 **Highly Efficient Pt-TiO2 Nanostructured Films for CO2 Conversion to Hydrocarbon Fuels.** WEI-NING WANG, Woo-Jin An, Balavinayagam Ramalingam, Somik Mukherjee, Dariusz M. Niedzwiedzki, Shubhra Gangopadhyay, Pratim Biswas, *Washington University*

11NM.4 10:30 **Ultrasonic Spray Pyrolysis Synthesis of Ag-Ce Co-modified TiO2 Nanocomposites for Syngas Production Under Solar Irradiation.** Daniel Pitts, Cunyu Zhao, Huilei Zhao, Lianjun Liu, YING LI, *University of Wisconsin-Milwaukee*

11NM.5 10:45 **In situ Ambient Pressure XPS Investigations of PdAg Alloy Nanoparticles: Towards Cheaper Catalysts.** MARIA E MESSING, Sara Blomberg, Natalia M Martin, Johan Gustafson, Jesper Andersen, Lars Erik Walle, Anne Borg, Henrik Grönbeck, Michael E Grass, Zhi Liu, Edvin Lundgren, Knut Deppert, *Lund University*

11RA REMOTE AND REGIONAL ATMOSPHERIC AEROSOLS III

NICOLLET D

David Cocker and Rick Saylor, chairs

11RA.1 9:45 **Influences of SO2 and NH3 Levels on Ambient Isoprene Epoxydiol (IEPOX)-Derived SOA Formation in the Rural Southeastern United States.** YING-HSUAN LIN, Eladio Knipping, Eric Edgerton, Stephanie Shaw, Jason Surratt, *University of North Carolina at Chapel Hill*

11RA.2 10:00 **Performance of High Resolution Time-of-Flight Aerosol Mass Spectrometer during Chemical Characterization of Particle Emissions from Controlled Biomass Burning.** POORNIMA DIXIT, Seyedehsan Hosseini, Ping Tang, David R. Cocker III, Li Qi, *University of California, Riverside*

11RA.3 10:15 **Characterization of Transboundary Biomass Burning Smoke on Organic Aerosols in a Tropical Urban Environment: Dicarboxylic Acids, Malic Acid, and Photooxidation Intermediates of Levoglucosan.** Liming Yang, Wei Hong Fan, Shiguo Jia, Duc Minh Nguyen, Jeffrey Reid, LIYA YU, *National University of Singapore*

11RA.4 10:30 **Long Term Measurements of Aerosol Optical Properties in Amazonian.** PAULO ARTAXO, Luciana Rizzo, Erik Swietlicki, Andrea Arana, Elisa Sena, Glauber Cirino, Alfred Wiedensohler, *Institute of Physics, University of Sao Paulo*

11RA.5 10:45 **Fine Particles Over an Ecologically Sensitive Zone in Bhopal, India-Characterization and Temporal Variability.** RAMYA SUNDER RAMAN, Balram Ambade, Masood Ayub Kaloo, *Indian Institute of Science Education and Research, Bhopal*

Friday 11:15 AM - 12:30 AM
Session 12: Platform

12AC AEROSOL CHEMISTRY X
NICOLLET A

Peter DeCarlo and Timothy VanReken, chairs

12AC.1 11:15	**Kinetics and Products of Multiphase Aging Reactions of Organic Aerosol.** JESSE KROLL, James Hunter, Kelly Daumit, Sean Kessler, Anthony Carrasquillo, Eben Cross, Theodora Nah, Douglas Worsnop, Kevin Wilson, *MIT*
12AC.2 11:30	**Aging of Secondary Organic Aerosol from Small Aromatic VOCs: Changes in Chemical Composition, Mass Yield, Volatility and Hygroscopicity.** LEA HILDEBRANDT RUIZ, Andrea Paciga, Benjamin Murphy, Kate Cerully, Athanasios Nenes, Neil Donahue, Spyros Pandis, *Carnegie Mellon University*
12AC.3 11:45	**Rapid Modification of Cloud-Nucleating Ability of Aerosols by Biogenic Emissions.** SARAH D. BROOKS, Yan Ma, German Vidaurre, Alexei F. Khalizov, Lin Wang, Jun Zheng, Renyi Zhang, *Texas A&M University*
12AC.4 12:00	**Sustained Chemical Evolution of alpha-Pinene Ozonolysis Products - Evidence for Bulk Phase Reaction.** PETER DECARLO, Torsten Tritscher, Lisa Pfaffenberger, Arnaud Praplan, Peter Barmet, Kaytlin Henry, Josef Dommen, Neil Donahue, Andre Prévôt, Urs Baltensperger, *Drexel University*
12AC.5 12:15	**New Information on Cr Speciation in the Presence of Ozone and Reactive Oxygen Species during Atmospheric and Sampling Aging.** Mehdi Amouei Torkmahalleh, Lin Lin, Thomas M. Holsen, Don H. Rasmussen, PHILIP K. HOPKE, *Clarkson University*

12CA CARBONACEOUS AEROSOLS IN THE ATMOSPHERE VI
NICOLLET B/C

Roya Bahreini and Andrey Khlystov, chairs

12CA.1 11:15 **Phase, Viscosity, Morphology, and Room Temperature Evaporation Rates of SOA Particles generated from different Precursors, at Low and High Relative Humidities, and their Interaction with Hydrophobic Organics.** ALLA ZELENYUK, Dan Imre, Josef Beranek, Jacqueline Wilson, Evan Abramson, *Pacific Northwest National Laboratory*

12CA.2 11:30 **Effect of Relative Humidity on the Evaporation Kinetics of Alpha-Pinene Secondary Organic Aerosol.** ELLIS SHIPLEY ROBINSON, Neil Donahue, *Carnegie Mellon University*

12CA.3 11:45 **Implementing Volatility Basis Set Algorithm for Organic Aerosol Formation in CMAQ 5.0.** BONYOUNG KOO, Greg Yarwood, Eladio Knipping, *ENVIRON International Corporation*

12CA.4 12:00 **Contribution of Uncertainties in Anthropogenic Emission Inventories to SOA Simulations for the Los Angeles Basin.** RAVAN AHMADOV, Stuart McKeen, Roya Bahreini, Ann Middlebrook, Joost de Gouw, Carsten Warneke, Jose-Luis Jimenez, Patrick Hayes, Allen Robinson, Michael Trainer, *NOAA ESRL*

12CA.5 12:15 **Assessment of Biogenic Secondary Organic Aerosol in the Himalayas.** ELIZABETH STONE, Tony Nguyen, Bidya Banmali Pradhan, Pradeep Man Dangol, *University of Iowa*

12HA HEALTH RELATED AEROSOLS VI: HEALTH EFFECTS
LAKE SUPERIOR

Carlos Lange and Zuocheng Wang, chairs

12HA.1 11:15 **Multistage Cyclone Array for the Simultaneous Collection of Aerosol Mass in the Ultrafine, Submicron, Respirable, and Coarse Region.** EMANUELE CAUDA, Steven Mischler, *NIOSH*

12HA.2 11:30 **Contribution of water-soluble and insoluble species and their hydrophobic/hydrophilic sub-fractions in the toxicological properties of ambient atmospheric aerosols.** VISHAL VERMA, Neel Kotra, Laura King, Jiumeng Liu, Roberto Rico-Martinez, Terry Snell, Rodney Weber, *Georgia Institute of Technology*

12HA.3 11:45 **On-line Measurements of Particle Bound Reactive Oxygen Species in Ambient and Combustion Aerosols.** STEPHEN FULLER, Jenny Nutter, Stephen Platt, Lisa Pfaffenberger, Peter Barmet, Josef Dommen, Urs Baltensperger, Andre Prévôt, Markus Kalberer, *University of Cambridge*

12HA.4 12:00 **The Complex Role of Vegetation in Mitigating Near Road Air Pollution.** ZHEMING TONG, Max Zhang, Patrick MacRae, Thomas Whitlow, *Cornell University*

12HA.5 12:15 **Relation Between Carbonaceous Aerosol Characterization and Lung Injury Endpoints in an In Vivo Model.** ANDRÉS HENRÍQUEZ, Matías Tagle, Felipe Reyes, Thomas Kuhlbusch, Bryan Hellack, Claudio Hetz, Pedro Oyola, *Centro Mario Molina*

12IM INSTRUMENTATION AND METHODS XI

REGENCY ROOM

Igor Paprotny and John Carpin, chairs

12IM.1 11:15 **Ultrafine Particle Generation Through Atomization Technique: The Influence of the Solution.** LUCA STABILE, Giorgio Buonanno, Conchita Vargas Trassierra, Gianfranco Dell'Agli, Aldo Russi, *University of Cassino and Southern Lazio*

12IM.2 11:30 **A Piezoelectrically Actuated Nebulizer for Inductively Coupled Plasma (ICP) Spectrometry.** SANAZ ARABZADEH, Hamid Badiei, Kaveh Kahen, Javad Mostaghimi, *PerkinElmer Inc.*

12IM.3 11:45 **A Micro-Liter Vaporization Condensation Aerosol Generator.** JOHN CARPIN, *US Army*

12IM.4 12:00 **Measurements of Particulate Matter in Diluted Cigarette Smoke and Diesel Exhaust Emissions Using a MEMS-Based Microfluidic Sensor.** IGOR PAPROTNY, Frederick Doering, Paul A. Solomon, Richard White, Lara Gundel, *University of California, Berkeley*

12IM.5 12:15 **Computational Fluid Dynamics Analysis of High-Volume Inlets for Atmospheric Aerosol Sampling Application.** IGOR NOVOSSELOV, Riley Gorder, Anna Gannet Hallar, *Enertechnix Inc*

12NM NANOPARTICLES AND MATERIALS SYNTHESIS III
MIRAGE ROOM

Ying Li and Wei-Ning Wang, chairs

12NM.1 11:15 **Laser-Plasma Synthesis of Sb Nanoparticles.** A.M. Baklanov, O.V. BOROVKOVA, G.N. Grachev, A.A. Onischuk, A.L. Smirnov, M.I. Zimin, *Institute of Chemical Kinetics and Combustion, Novosibirsk*

12NM.2 11:30 **Preparation of Novel SiC and Carbon Nanostructures by Induction Heating of Preceramic Silicon-Carbon Nanoparticles.** ANNA LÄHDE, Mirella Miettinen, Jouni Hokkinen, Tommi Karhunen, Unto Tapper, Jorma Jokiniemi, *University of Eastern Finland*

12NM.3 11:45 **Low-Temperature Hydrolysis of AlCl3 Vapor in an Aerosol Reactor to Produce Spherical Preforms for Ceramic-Grade Alumina.** HOEY KYUNG PARK, Kyun Young Park, Kyeong Youl Jung, *Kongju National University, South Korea*

12NM.4 12:00 **Monodisperse Poly(lactide–co–glycolic acid)–based Nanocarriers for Gene Transfection.** JEONG HOON BYEON, Jeffrey Roberts, *Department of Chemistry, Purdue University*

12NM.5 12:15 **A Novel Method to Measure Effective Density of Engineered Nanomaterials in Liquid Suspensions: Implications for In Vitro Dosimetry and Nanotoxicology.** Glen DeLoid, Joel Cohen, PHILIP DEMOKRITOU, *Harvard University*

12RA REMOTE AND REGIONAL ATMOSPHERIC AEROSOLS IV
NICOLLET D

Philip Hopke and Jason Surratt, chairs

12RA.1 11:15 **Long-term Trends in the Chemical Composition of Finnish Arctic Aerosols.** JAMES R. LAING, Philip K. Hopke, Liaquat Husain, Vincent A. Dutkiewicz, Jussi Paatero, Tanveer Ahmed, *Clarkson University*

12RA.2 11:30 **Ultra-High Resolution Mass Spectrometry Analysis of PM1 Finnish Boreal Forest Aerosol.** IVAN KOURTCHEV, Stephen Fuller, Juho Aalto, Taina Ruuskanen, Willy Maenhaut, Markku Kulmala, Markus Kalberer, *University of Cambridge*

12RA.3 11:45 **Long-term Volatility Measurements of Submicron Atmospheric Aerosol in Boreal Forest.** SILJA HÄKKINEN, Mikko Äijälä, Katrianne Lehtipalo, Heikki Junninen, John Backman, Aki Virkkula, Tuomo Nieminen, Mika Vestenius, Hannele Hakola, Mikael Ehn, Douglas Worsnop, Markku Kulmala, Tuukka Petäjä, Ilona Riipinen, *University of Helsinki*

12RA.4 12:00 **An Investigation of Secondary Organic Aerosol Precursors and Formation Processes in and above Deciduous Forest Canopies.** RICK SAYLOR, Ariel Stein, *NOAA Air Resources Laboratory*

12RA.5 12:15 **Spatial Extent of New Particle Formation and Growth Events.** JAMES SCHWAB, G. Garland Lala, Kenneth Demerjian, Brian P. Frank, H. Dirk Felton, Oliver Rattigan, *University at Albany, SUNY*

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AAAR FUTURE CONFERENCES

2013 – Oregon Convention Center
Portland, OR
September 30-October 4, 2013

2014 – Rosen Shingle Creek Resort
Orlando, FL
October 13-17, 2014

2015 – Hyatt Regency Minneapolis
Minneapolis, MN
October 12-16, 2015

2016 – Oregon Convention Center
Portland, OR
Dates to be determined

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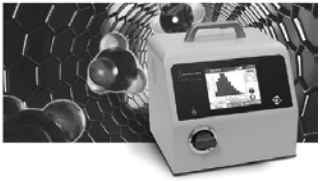

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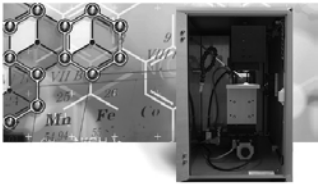

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