

PROGRAM
**23rd Informal Symposium on Kinetics and Photochemical Processes in the
Atmosphere (2006)**

February 15, 2006

Beckman Institute Auditorium, California Institute of Technology

Sponsored by: The Foster and Coco Stanback Environmental Studies Student Fund

WELCOME AND REGISTRATION

7:30 – 8:25 Continental Breakfast, BI Courtyard/Lobby,
Poster setup

SESSION I Chair: Jesse Kroll, California Institute of Technology

8:25 Opening Remarks

8:30 – 9:15 *Photochemistry of Secondary Organic Aerosol Particles*
Sergey Nizkorodov, University of California, Irvine

9:15 – 10:30 ***Poster presentations and viewing***

1. Teresa Barone, *Ultrafine Aerosol Morphology at Los Angeles International Airport*, Teresa Barone, UCLA; Sheldon K. Friedlander, UCLA

5. David Medina, *Real time monitoring of alkyl nitrates(ANs) and peroxy acyl nitrates(PNs) in particulates*, James M. Hargrove, UCR, David Medina, UCR, Aiko Matsunaga, UCR, Paul Ziemann, UCR, and Jingsong Zhang, UCR

9. MaggieWalser, *Oxidative and Photochemical Aging of Various Organic Aerosol Systems*, Maggie Walser, Anthony Gomez, Jiho Park, Ashley Russell, and Sergey Nizkorodov, UCI

13. Steve Mang, *Single Particle Analysis using Microwave Plasma Torch Atomic Emission Spectroscopy*, Stephen Mang, Jiho Park and Sergey Nizkorodov, UCI

17. Raffaella D'Auria, *A theoretical study of the reaction between chloride anion and hydroxyl radical*, Raffaella D'Auria, UCI; Douglas J. Tobias, UCI

21. Gretchen Aleks, *Aerosol extinction and angstrom exponent retrieved from ground-based near-infrared solar absorption spectra*, Gretchen Aleks, Caltech; Geoffrey Toon, JPL; Rebecca Washenfelder, Caltech; Paul Wennberg, Caltech; Antony Clarke, U Hawaii

25. Lance Christensen, *Experimental and ab Initio Study of the HO₂-CH₃OH Complex: Thermodynamics and Kinetics of Formation*, Lance E. Christensen, JPL; Mitchio Okumura, Caltech; Jaron C. Hansen, BYU; Stanley P. Sander, JPL; Joseph S. Francisco, Purdue

29. Coleen Roehl, *UV Cross Sections and Vibrational Overtone Photodissociation Spectra and Analysis of Hydroxymethyl Hydroperoxide*, Coleen M. Roehl, Caltech; Juliane L. Fry, Caltech; Paul O. Wennberg, Caltech; Jamie Matthews, UCSD; Amitabha Sinha, UCSD, Joseph R. Lane, U. of Otago; and Henrik G. Kjaergaard, U. of Otago

33. Chris Fernandez, *Development of Laser Ionization/Mass Spectrometry for Studying Atmospheric Radicals*, Chris Fernandez, Branden Smith, Guy Dadson, and Scott Hewitt, CSUF

37. Shuhui Wang, *Nocturnal Chemistry in the Urban Boundary Layer and the Budgets of O₃, NO_x, and Ox*, Shuhui Wang, UCLA; Jochen Stutz, UCLA

41. Danie Liang, *Revisiting the Photochemical Processes in the Atmosphere of Titan*. Mao-Chang Liang and Yuk L. Yung (Caltech)

45. Julie Lee, *Kinetics of Cl Atom Reactions with Chlorotoluenes*. Julie Lee, Jason Clemons, Rosa Aguilera, Guy Dadson, Fu-Ming Tao, and Scott Hewitt (Cal State Fullerton)

SESSION II

Chair: Eileen McCauley, Air Resources Board

10:30 – 11:15

Remote Sensing and Global Air Pollution: A New View with TES and Other Satellite Instruments

Annmarie Eldering, NASA Jet Propulsion Laboratory

11:15 – 12:30

Poster presentations and viewing

2. Alan Kwan, *Organic Aerosols: A source of oxygenated volatile organic compounds?*, Alan Kwan, Caltech; John Crouse, Caltech; Paul Wennberg, Caltech;

6. Kwangsam Na, *Effect of Ammonia on the Formation of Secondary Organic Aerosols in Alkene/Ozone Reactions*, Chen Song, Cameron Switzer, David R. Cocker Ш

10. Ahmad Alshawa, *Aerosolized inverted micelles as model systems for probing atmospheric reactions of ultrafine organic particles*, Ahmad Alshawa (UCI), Joelle Underwood (UCI), Steven Ng (UCI), and Sergey Nizkorodov (UCI)

14. David Bones, *OH radical yields for aqueous sodium nitrate aerosol*, David Bones, UC; Leon Phillips, UC

18. Hiroshi Furutani, *Enhanced Incorporation of Oceanic Matter into Sea Salt Aerosols by Air Bubble Bursting at the Sea Surface*, Hiroshi Furutani, UCSD; Jessica Charrier, UCSD; Lihini Aluwihare, SIO; Kimberly A Prather, UCSD/SIO

22. Rebecca Washenfelder, *Regional Drawdown in Carbon Dioxide Observed from Total Column Measurements*, Rebecca Washenfelder, Caltech; Paul Wennberg, Caltech; Geoffrey Toon, NASA JPL

26. Laurie Kovalenko, *Photochemistry in the Mid-Latitude Stratosphere: What Might Models be Missing?*, L.J. Kovalenko, N.J. Livesey, R.J. Salawitch, J.W. Waters, J.-F. Blavier, B. Sen, G.C. Toon, R.A. Stachnik, J.J. Margitan, JPL; I.A. MacKenzie, U of Edinburgh; M.P. Chipperfield, U of Leeds; K.W. Jucks, Harvard Smithsonian CFA; D.G. Johnson, NASA Langley

30. Javier Morales, *Theoretical Study of the Stability of Oxalic Acid in the Presence of Water Using Density Functional Theory*

34. Brandon Finley, *Detection of Molecular Chlorine in Coastal Urban Air*, Brandon Finley, UCI; Eric Saltzman, UCI

38. Kana Takematsu, *Understanding the Electronic Structure of the Nitrate Radical*, Kana Takematsu, David Robichaud, Mitchio Okumura, Caltech Pin Chen, JPL

42. Sivakumaran Valluvadasan, *Kinetics study of the reaction OH + NO₂ + M: pressure- and temperature-dependent falloff parameters*, Sivakumaran Valluvadasan (Siva), Daniel B. Milligan, William J. Bloss and Stanley P. Sander

LUNCH

12:30 – 1:15 DABNEY LOUNGE

SESSION III

1:30 – 2:15

Chair: Jesse L. Beauchamp, California Institute of Technology
Probing Aerosol Nanoparticle Chemistry with Vacuum Ultraviolet Light
Stephen R. Leone, University of California, Berkeley and Lawrence Berkeley National Laboratory

2:15 – 3:30

Poster presentations and viewing

3. Aiko Matsunaga, *Secondary Organic Aerosol Formation from the Reactions of NO₃ Radicals with Alkenes*, Aiko Matsunaga, UCR; Paul Ziemann, UCR

7. Nga Lee (Sally)Ng, *Contribution of first- versus second-generation products to secondary organic aerosols formed in the oxidation of biogenic hydrocarbons*, Nga L. Ng, Jesse H. Kroll, Melita D. Keywood, Roya Bahreini, Varuntida Varutbangkul, Richard C. Flagan, and John H. Seinfeld, Caltech; Anita Lee and Allen H. Goldstein, UC Berkeley

11. Jack Beauchamp, *New approaches for studying chemical reactions in liquid and solid aerosols*, Ronald Grimm, Caltech and UCI; Hugh Kim, Caltech; Jack Beauchamp, Caltech

15. Karen Callahan, *Effects of magnesium dication on the interfacial propensity of chloride anion: a molecular dynamics simulation study*, Karen Callahan, UCI; Martina Roeselova, Academy of Sciences of the Czech Republic; Douglas J. Tobias, UCI

19. Lisa Wingen, *Investigating the Heterogeneous Chemistry and Photochemistry of Surface-Adsorbed Species Formed During Heterogeneous NO₂ Hydrolysis*, Lisa M. Wingen, UCI; Kevin A. Ramazan, UCI; Yifat Miller, Hebrew University; Galina M. Chaban, NASA Ames Research Center; R. Benny Gerber, Hebrew University and UCI; Sotiris S. Xantheas, Pacific Northwest National Lab; Barbara J. Finlayson-Pitts, UCI

23. James Hargrove, *Water Vapor Continuum Absorption in Violet Light*, James Hargrove, UCR; David Medina, UCR; Jingsong Zhang, UCR.

27. Kevin Hickson, *Temperature dependence of the ClO + HO₂ reaction*, Kevin M Hickson, Leon F Keyser and Stanley P Sander

31. Katie Gallagher, *The Synthesis of Dimethylnitronaphthalenes (DMNNs) as an Aid to Their Identification in Ambient Air.*, Katie Gallagher, UCR; Janet Arey, UCR

35. Thomas Pongetti, *Ground-based measurements of NO₂ column abundance over Table Mountain, California*, C. Chen, R.P Cageao, T. Pongetti, and S.P.Sander JPL

39. Sumitpal Singh, *Kinetic Study of OH Radical Reactions with n-octane, n-nonane and n-decane at 240-340K Using Relative Rate/Discharge Fast Flow/Mass Spectrometer Technique*, Sumitpal Singh, Lan Dang, William Woodward, Zhuangjie Li, California State University, Fullerton

43. Andrew Mollner, *Pressure-dependent yield of HOONO in the reaction OH + NO₂ + M*, Andrew Mollner, Caltech; Lin Feng, Caltech; Mitchio Okumura, Caltech; Stanley P. Sander, NASA JPL

SESSION IV Chair: Jingsong Zhang, University of California, Riverside
3:30 – 4:15 *Beyond vinyl: Electronic structure of unsaturated propen-1-yl, propen-2-yl, 1-buten-2-yl, and trans-2-buten-2-yl hydrocarbon radicals*
Anna Kryloy, University of Southern California
4:15 – 5:30 **Poster presentations and viewing**

4. Theresa M. McIntire, *Impact of Substrates on the Heterogeneous Chemistry of Organics on Proxies for Airborne Dust*, Theresa M. McIntire, UCI; S. Rachelle Smalley, UCI; John Newberg, UCI; A. Scott Lea, Pacific Northwest National Laboratories; and Barbara J. Finlayson-Pitts* UCI

8. Rainer Volkamer, *Anthropogenic Air Pollution enhanced formation of Secondary Organic Aerosol*, Rainer Volkamer, UCSD; Paul Ziemann, UCR; Jose Jimenez, UC; Ken Docherty, UC; Kim Prather, UCSD; Kerry Denkenberger, UCSD; Mario Molina, UCSD

12. Kerri Denkenberger, *Characterization of ambient organic aerosols by ATOFMS at the Study of Organic Aerosols in Riverside (SOAR) I and II*, Kerri A. Denkenberger, UCSD; J. Alex Huffman, CU; Jose L. Jimenez, CU; Kimberly A. Prather, UCSD

16. Jessica Charrier, *The Size Dependent Incorporation of Soluble and Surface-Active Chemical Species into Salt Particles Produced by Bubble Bursting*, Jessica G. Charrier, UCSD; Hiroshi Furutani, UCSD; Lihini Aluwihare, SIO-UCSD; Kimberly A. Prather, UCSD

20. Marcelo Guzman, *Carbon Dioxide Emissions From Illuminated Frozen Pyruvic Acid Solutions Above -140 °C*, Marcelo I. Guzman, Caltech; Agustin J. Colussi, Caltech; and Michael R. Hoffmann, Caltech

24. Meher Prakash Ayalasomayajula, *Isotopologue fractionation in the UV photolysis of N₂O: theory and experiment*, M. K. Prakash, J. D. Weibel and R. A. Marcus, Caltech

28. Francis Pope, *Re-determination of the UV Absorption Cross Sections of ClOOCl*, Francis Pope, JPL; Jaren Hansen, JPL; Kyle Bayes, JPL; Randy Friedl, JPL; Stanley Sander, JPL;

32. Lin Wang, *Atmospheric Chemistry of Phthalaldehyde, 2-Acetylbenzaldehyde, 1, 2-Diacetylbenzene and Phthalide*, Lin Wang, Janet Arey and Roger Atkinson, UCR

36. Laura Lawrence, *Boundary Layer and Total Column NO₃ at Table Mountain, CA*, Laura Lawrence, UCLA; Jochen Stutz, UCLA; Tom Pongetti, JPL; Claudine Chen, JPL; and Stanley Sander, JPL

40. Bao Quan Zhang, *Theoretical mechanisms of the formation of nitrous acid from the gas phase reactions of NO₂ -H₂O and the role of NH₃ in the system*, Bao Quan Zhang and Fu-Ming Tao, CSU, Fullerton

44. Laura Lazarus, *Pyrolysis of Iodopropane*, Laura Lazarus (CSULA), Scott Nickolaisen (CSULA)