

ManNin Chan

CONTACT INFORMATION

Chemist Postdoctorate
Chemical Sciences Division
Lawrence Berkeley National Laboratory
email: mnchan@lbl.gov

EDUCATION

Ph.D., Environmental Science and Engineering, California Institute of Technology, 2012
M.Phil., Environmental Engineering, Hong Kong University of Science and Technology, 2004
B.S., Chemical Engineering, Hong Kong University of Science and Technology, 2000

RESEARCH EXPERIENCE

Lawrence Berkeley National Laboratory

- *Chemist Postdoctorate*, January 2012 – Present
- Real-Time Chemical Characterization of Organic Aerosol using the Direct Analysis in Real Time
- Advisor: Kevin R. Wilson

California Institute of Technology

- *Ph.D. Student*, September 2007 – December 2011
- Thesis: Mass Spectrometric Analysis of Organic Aerosol Composition: Laboratory and Ambient
- Advisor: John H. Seinfeld

Hong Kong University of Science and Technology

- *Research Assistant*, July 2004 – August 2007
- Research topic: Hygroscopic Measurement of Organic Compounds of Atmospheric Relevance using an Electrodynamic Balance
- Advisor: Chak K. Chan

Hong Kong University of Science and Technology

- *M.Phil. Student*, September 2002 – June 2004
- Thesis: Experimental Measurements of Phase Transition and Hygroscopic Growth of Water-Soluble Organic Compounds in Atmospheric Aerosols
- Advisor: Chak K. Chan

PUBLICATIONS

Chan, M. N., Nah, T., Wilson, K. R. (2013) "Real Time In-Situ Chemical Characterization of Sub-micron Organic Aerosols using Direct Analysis in Real Time Mass Spectrometry (DART-MS): The Effect of Aerosol Size and Volatility", submitted to *Analyst*

Yee, L. D., Kautzman, K. E., Loza, C. L., Schilling, K. A., Coggon, M. M., Chhabra, P. S., **Chan, M. N.**, Chan, A. W. H., Hersey, S. P., Crounse, J. D., Wennberg, P. O., Flagan, R. C., Seinfeld, J. H. "Secondary Organic Aerosol Formation from Biomass Burning Intermediates: Phenol and Methoxyphenols, submitted to *Atmospheric Chemistry and Physics*

Chan, K. M., Huang, D. D., Li, Y. J., **Chan, M. N.**, Seinfeld, J. H., Chan, C. K. "Oligomeric Products and Formation Mechanisms from Acid-Catalyzed Reactions of Methyl Vinyl Ketone on Acidic Sulfate particles", *Journal of Atmospheric Chemistry*, accepted

Nah, T., **Chan, M. N.**, Leone, S.R., Wilson, K. R. (2013) "Real Time In Situ Chemical Characterization of Sub-micron Organic Particles Using Direct Analysis in Real Time Mass Spectrometry(DART-MS)", *Analytical Chemistry*, DOI: 10.1021/ac302560c

Eddingsaas, N. C., Loza, C. L., Yee, L. D., **Chan, M. N.**, Schilling, K. A., Chhabra, P. S., Seinfeld, J. H., Wennberg, P. O. (2012) " α -pinene Photooxidation Under Controlled Chemical Conditions – Part 2: SOA Yield and Composition in Low- and High-NO_x Environments", *Atmospheric Chemistry and Physics*, 12, 7413–7427.

Hatch, L. E., Creamean, J. M., Ault, A. P., Surratt, J. D., **Chan, M. N.**, Seinfeld, J. H., Edgerton, E. S., Su, Y., Prather, K. A. (2011) “Measurements of Isoprene–Derived Organosulfates in Ambient Aerosols by Aerosol Time–of–Flight Mass Spectrometry, Part 2: Temporal Variability and Formation Mechanisms”, *Environmental Science and Technology*, 45, 8648–8655.

Hatch, L. E., Creamean, J. M., Ault, A. P., Surratt, J. D., **Chan, M. N.**, Seinfeld, J. H., Edgerton, E. S., Su, Y., Prather, K. A. (2011) “Measurements of Isoprene–Derived Organosulfates in Ambient Aerosols by Aerosol Time–of–Flight Mass Spectrometry, Part 1: Single Particle Observations”, *Environmental Science and Technology*, 45, 5105–5111.

Hersey, S. P., Craven, J. S., Schilling, K., Metcalf, A. R., Sorooshian, A., **Chan, M. N.**, Flagan, R. C., Seinfeld, J. H. (2011) “The Pasadena Aerosol Characterization Observatory (PACO): Chemical and Physical Analysis of the Western Los Angeles Basin Aerosol”, *Atmospheric Chemistry and Physics*, 11, 7417–7443.

Chan, M. N., Surratt, J. D., Chan, A. W. H., Schilling, K., Offenberg, J. H., Lewandowski, M., Edney, E. O., Kleindienst, T., Jaoui, M., Edgerton, E.S., Tanner, R. L., Shaw, S. L., Zheng, M., Knipping, E. M., Seinfeld, J. H. (2011) “Influence of Aerosol Acidity on the Chemical Composition of Secondary Organic Aerosol from β -caryophyllene”, *Atmospheric Chemistry and Physics*, 11, 1735–1751.

Chan, A. W. H., **Chan, M. N.**, Surratt, J. D., Chhabra, P. S., Loza, C. L., Crouse, J. D., Yee, L. D., Flagan, R. C., Wennberg, P.O., Seinfeld, J. H. (2010) “Role of Aldehyde Chemistry and NO_x Concentrations in Secondary Organic Aerosol Formation”, *Atmospheric Chemistry and Physics*, 10, 7169–7188.

Chan, M. N., Surratt, J. D., Claeys, M., Edgerton, E.S., Tanner, R. L., Shaw, S. L., Zheng, M., Knipping, E. M., Eddingsaas, N. C., Wennberg, P.O., Seinfeld, J. H. (2010) “Characterization and Quantification of Isoprene–Derived Epoxydiols in Ambient Aerosol in the Southeastern United States”, *Environmental Science and Technology*, 44, 4590–4596.

Wang, X. F., Gao, S., Yang, X., Chen, H., Chen, J., Zhuang, G., Surratt, J. D., **Chan, M. N.**, Seinfeld, J. H. (2010) “Evidence for High Molecular Weight Nitrogen–Containing Organic Salts in Urban Aerosols”, *Environmental Science and Technology*, 44, 4441–4446.

Surratt, J. D., Chan, A. W. H., Eddingsaas, N. C., **Chan, M. N.**, Loza, C. L., Kwan, A. J., Hersey, S. P., Flagan, R. C., Wennberg, P. O., Seinfeld, J. H. (2010) “Secondary Organic Aerosol Formation from Isoprene: Role of Reactive Intermediates Revealed”, *Proceedings of the National Academy of Sciences of the United States of America*, 107, 6640–6645.

Kautzman, K. E., Surratt, J. D., **Chan, M. N.**, Chan, A. W. H., Hersey, S. P., Chhabra, P. S., Dalleska, N. F., Wennberg, P. O., Flagan, R. C., Seinfeld, J. H. (2009) “Chemical Composition of Gas– and Aerosol–Phase Products from the Photooxidation of Naphthalene”, *Journal of Physical Chemistry A*, 114, 913–934.

Chan, M. N., Chan, A. W. H., Chhabra, P. S., Surratt, J. D., Seinfeld, J. H. (2009) “Modeling of Secondary Organic Aerosol Yields from Laboratory Chamber Data”, *Atmospheric Chemistry and Physics*, 9, 5569–5580.

Chan, A. W. H., Kautzman, K. E., Chhabra, P. S., Surratt, J. D., **Chan, M. N.**, Crouse, J. D., Kürten, A., Wennberg, P. O., Flagan, R. C., Seinfeld, J. H. (2009) “Secondary Organic Aerosol Formation from Photooxidation of Naphthalene and Alkyl naphthalenes: Implications for Oxidation of Intermediate Volatility Organic Compounds (IVOCs)”, *Atmospheric Chemistry and Physics*, 9, 3049–3060.

- Chan, M. N.**, Kreidenweis, S. M., Chan, C. K. (2008) “Measurements of the Hygroscopic and Deliquescence Properties of Organic Compounds of Different Solubilities in Water and their Relationship with Cloud Condensation Nuclei Activities”, *Environmental Science and Technology*, 42, 3602–3608.
- Kelly, J., Wexler A. S., Chan C. K., **Chan M.N.** (2008) “Aerosol Thermodynamics of Potassium Salts, Double Salts, and Water Content near the Eutectic”, *Atmospheric Environment*, 42, 3717–3728.
- Chan, M. N.**, Chan, C. K. (2007) “Mass Transfer Effects on the Hygroscopic Growth of Ammonium Sulfate Particles with a Water-Insoluble Coating”, *Atmospheric Environment*, 41, 4423–4433.
- Wu, H. B., **Chan, M. N.**, Chan, C. K. (2007) “FTIR Characterization of Polymorphic Transformation of Solid Ammonium Nitrate”, *Aerosol Science and Technology*, 41, 581–588.
- Chan, M. N.**, Lee, A. K. Y., Chan, C. K. (2006) “Responses of Ammonium Sulfate Particles Coated With Glutaric Acid to Cyclic Changes in Relative Humidity: Hygroscopicity and Raman Characterization”, *Environmental Science and Technology*, 40, 6983–6989.
- Hartz, K. E. H., Tischuk, J. E., **Chan, M. N.**, Chan, C. K., Donahue, N. M., Pandis, S. N. (2006) “Cloud Condensation Nuclei Activation of Limited Solubility Organic Aerosol”, *Atmospheric Environment*, 40, 605–617.
- Chan, M. N.**, Chan, C. K. (2005) “Mass Transfer Effects in the Hygroscopic Measurement of Aerosol Particles”, *Atmospheric Chemistry and Physics*, 5, 2703–2712.
- Chan, M. N.**, Choi, M. Y., Ng, N. L., Chan, C. K. (2005) “Hygroscopicity of Water-Soluble Organic Compounds in Atmospheric Aerosols: Amino Acid and Biomass Burning Derived Organic Species”, *Environmental Science and Technology*, 39, 1555–1562.
- Chan, C. K., **Chan, M. N.** (2004) “New directions: Polymorphic Transformation of Ammonium Nitrate in Atmospheric Aerosols”, *Atmospheric Environment*, 38, 1387–1388.
- Chan, M. N.**, Chan, C. K. (2003) “Hygroscopic Properties of Two Model Humic-Like Substances and Their Mixtures with Inorganics of Atmospheric Importance”, *Environmental Science and Technology*, 37, 5109–5115.
- Peng, C., **Chan, M. N.**, Chan, C. K. (2001) “The Hygroscopic Properties of Dicarboxylic and Multifunctional Acids: Measurements and UNIFAC Predictions”, *Environmental Science and Technology*, 35, 4495–4501.

PROFESSIONAL
ACTIVITIES

Member

- American Association for Aerosol Research (AAAR)
- American Geophysical Union (AGU)

Reviewer for Scientific Journals

- Atmospheric Chemistry and Physics
- Atmospheric Environment
- Environmental Chemistry
- Geophysical Research Letters