

Curriculum Vitae

Alexandra P. Tsimpidi

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Education

- 2004 – 2009 **Ph.D.** in Chemical Engineering
Department of Chemical Engineering,
University of Patras, Greece
- Dissertation: Simulating the Atmospheric Primary and Secondary Organic Aerosols
 - Academic Advisor: Prof. Spyros Pandis
 - Research Interests: Air pollution; atmospheric particulate matter; regional atmospheric modeling; organic aerosol formation; semivolatile organics; volatility of primary organic aerosols; emission control strategies
- 2004 – 2009 **M.S.** in Chemical Engineering
Department of Chemical Engineering,
University of Patras, Greece
- Minor: Energy and Environment
 - Graduate Coursework: Analysis and Design of Chemical Reactors, Applied Mathematics, Physical Chemistry, Polymers, Inorganic Materials, Environmental Biotechnology, Alternative Energy Forms
- 1999 – 2004 **Dipl. Ing.** in Chemical Engineering
Department of Chemical Engineering,
University of Patras, Greece
- Diploma Thesis: “Transport of Bacteria in Granular Porous Media”
 - Minor: Process Simulation, Optimization and Control
 - Undergraduate Coursework for Minor: Mathematical Modeling & Simulations, Process Control, Process Optimization, Systems Dynamics

Work and Research Experience

- 2004 – 2009 **Graduate Research Assistant**
University of Patras, Greece: Dept. of Chemical Engineering
Air Quality Laboratory
- Atmospheric aerosol modeling using PMCAMx and CMAQ - Application in regional scale (Eastern United States) and in urban scale (Mexico City Metropolitan Area); Study of emission control strategies; Simulation of organic aerosol formation and partitioning.
- May - June 2008 **Graduate Research Assistant**
Finokalia Aerosol Measurement Experiment (FAME) field campaign
- Field measurements using Aerodyne's Aerosol Mass Spectrometer (AMS) and Dry – Ambient Aerosol Size Spectrometer (DAASS).
- June 2006 **Visiting Researcher**
Molina Center for Energy and the Environment, San Diego, CA
- Simulation of the Air Quality in Mexico City Metropolitan Area using PMCAMx.
- 2003 – 2004 **Undergraduate Research Assistant**
University of Patras, Greece: Dept. of Chemical Engineering
Laboratory of Transport Phenomena and Physicochemical Hydrodynamics
- Experimental study and theoretical simulation of the transport phenomena in porous media.
- July – August 2001 **Research Assistant**
Food Processing Agricultural Cooperative of Lakonia, Greece
- Determination of ascorbic acid in natural orange juice in proportion to pasteurization temperature

Teaching Experience

- 2005 **Graduate Teaching Assistant**
University of Patras, Greece: Dept. of Chemical Engineering
“Unit Operations”

- 2005 **Graduate Teaching Assistant**
University of Patras, Greece: Dept. of Chemical Engineering
“Numerical Analysis”
- 2004 **Graduate Teaching Assistant**
University of Patras, Greece: Dept. of Chemical Engineering
“Unit Operations”

Honors and Awards

- 2004 - 2009 Molina Center for Energy and the Environment Fellowship
2004 - 2005 Carnegie Mellon University Fellowship
2004 Technical Chamber of Greece Scholar Award
2003 National Scholarships Foundation Award

Professional Affiliations

- American Geophysical Union (AGU)
- European Geosciences Union (EGU)
- American Association for Aerosol Research (AAAR)
- Hellenic Association for Aerosol Research (HAAR)

Publications

- Tsimpidi A.P.**; Karydis V.A.; Zavala M.; Lei W.; Molina L.T.; Ulbrich I.M.; Jimenez J.L.; Pandis S.P. Evaluation of the Volatility Basis-Set Approach for the Simulation of Organic Aerosol Formation in the Mexico City Metropolitan Area; *Atmos. Chem. Physics*, 10, 525-546, 2010.
- Karydis V.A.; **Tsimpidi A.P.**; Fountoukis C.; Nenes A.; Zavala M.; Lei W.; Molina L.T.; Pandis S.P. Simulating the fine and coarse inorganic particulate matter concentrations in a polluted megacity; *Atmos. Environ.*, 44, 608-620, 2010.
- Tsimpidi, A.P.**; Karydis, V.A.; Pandis S.N. Response of fine particulate matter to emission changes of oxides of nitrogen and anthropogenic volatile organic compounds in the eastern United States; *J. Air Waste Manage. Assoc.*, 58, 1463-1473, 2008.
- Tsimpidi, A.P.**; Karydis, V.A.; Pandis S.N. Response of inorganic fine particulate matters to emission changes of SO₂ and NH₃: The eastern United States as a case study; *J. Air Waste Manage. Assoc.*, 57, 1489-1498, 2007.
- Karydis, V.A.; **Tsimpidi, A.P.**; Pandis, S.N. Evaluation of a three-dimensional chemical transport model (PMCAMx) in the Eastern United States for all four seasons; *J. Geophys. Res.*, 112, D14211, 2007.
- Pikridas M., Kostenidou E., Psichoudaki M., **Tsimpidi A.P.**, Karydis V.A., Hildebrandt L., Engelhart G., Pandis S.N., Kouvarakis G., Bougiatioti A., Mihalopoulos N., Mohr C., Prevot A., DeCarlo P., Baltensperger U. Finokalia Aerosol Measurement Experiment – 2008 (FAME – 2008): An Overview; *Atmos. Chem. Physics*, to be submitted, 2009.

Conference Presentations

- Tsimpidi A.P.**; Karydis V.A.; Zavala M., Lei W.; DeCarlo P.F.; Ulbrich I.; Jimenez J.L.; Molina L.T.; Pandis S.N., Simulating the Formation of Semivolatile Primary and Secondary Organic Aerosol using the Volatility Basis-Set Approach: Mexico City as a case study, 7th Greek Scientific Chemical Engineering Conference, 2009 (oral presentation).
- Karydis V.A.; **Tsimpidi A.P.**; Fountoukis C.; Nenes A.; Zavala M.; Lei W.; Molina L.T.; Pandis S.P. Simulating the effects of mineral dust on the semivolatile inorganic aerosol components using ISORROPIA II in PMCAMx, 7th Greek Scientific Chemical Engineering Conference, 2009 (oral presentation).
- Tsimpidi A.P.**; Karydis V.A.; Zavala M., Lei W.; DeCarlo P.F.; Ulbrich I.; Jimenez J.L.; Molina L.T.; Pandis S.N., Evaluation of Organic Aerosol Formation and Apportionment in a polluted Megacity, European Geosciences Union (EGU) Meeting, 2009 (oral presentation).
- M. Zavala, W. Lei, N. Bei, G. Li, **A. P. Tsimpidi**, V. A. Karydis, S. Pandis, and L. T. Molina, Modeling of secondary organic aerosols from mobile sources in Mexico City, European Geosciences Union (EGU) Meeting, 2009.
- V.A. Karydis, **A.P. Tsimpidi**, C. Fountoukis, A. Nenes, M. Zavala, W. Lei, L.T. Molina, and S.N. Pandis, Effects of mineral dust on the semivolatile inorganic aerosol components in a polluted Megacity, European Geosciences Union (EGU) Meeting, 2009.
- G Li, M Zavala, W Lei, VA Karydis, **AP Tsimpidi**, S Pandis, and LT Molina, Simulations of aerosols and their effects on photolysis and ozone formation in Mexico City, European Geosciences Union (EGU) Meeting, 2009.
- B. Murphy, **A. Tsimpidi**, V. Karydis, and S. Pandis, Simulating the Formation of Semivolatile Primary and Secondary Organic Aerosol in a Regional Chemical Transport Model, European Geosciences Union (EGU) Meeting, 2009.
- L. Hildebrandt, B.-H. Lee, C. Mohr, E. Kostenidou, **A. Tsimpidi**, V. Karydis, U. Baltensperger, N. M. Donahue, N. Mihalopoulos, S. N. Pandis and the [FAME-08 AMS and Volatility Team](#), Characterizing the Composition and Volatility of Aged Organic Aerosol from Different Source Regions: The Finokalia Aerosol Measurement Experiment – 2008, European Geosciences Union (EGU) Meeting, 2009.
- Karydis V.A.; **Tsimpidi A.P.**; Fountoukis C.; Nenes A.; Zavala M.; Lei W.; Molina L.T.; Pandis S.P. Effects of mineral dust, NO_x, and NH₃ emissions on the formation of secondary inorganic aerosol components, , American Assoc. for Aerosol Research (AAAR) 27th Annual Conference, 2008 (oral presentation).
- Tsimpidi A.P.**; Karydis V.A.; Zavala M.; Lei W.; Ulbrich I.M.; Jimenez J.L.; Molina L.T.; Pandis S.P. Organic Aerosols in Mexico City: Sources, Formation Processes and Responses to Emission Controls, American Assoc. for Aerosol Research (AAAR) 27th Annual Conference, 2008 (oral presentation).

- Karydis V.A.; **Tsimpidi A.P.**; Fountoukis C.; Nenes A.; Zavala M.; Lei W.; Molina L.T.; Pandis S.P. Simulating the effects of mineral dust on the semivolatile inorganic aerosol components using ISORROPIA II in PMCAMx, European Aerosol Conference, 2008 (oral presentation).
- Tsimpidi A.P.**; Karydis V.A.; Zavala M.; Lei W.; Molina L.T.; Pandis S.P. Effects of NO_x levels, volatility distribution and aging of the organic emissions on primary and secondary organic aerosols in the Mexico City Metropolitan Area, European Aerosol Conference, 2008.
- Pandis, S. N.; **Tsimpidi A. P.**; Karydis, V. A.; Zavala, M.; Lei, W.; Molina, L. T. Air quality in Mexico City: Insights from the combination of field measurements and Chemical Transport Models, European Geosciences Union (EGU) Meeting, 2008 (oral presentation).
- Tsimpidi A.P.**; Karydis V.A.; Zavala M.; Lei W.; Molina L.T.; Pandis S.P. Evaluation of the Volatility Basis-Set Approach for Modeling Primary and Secondary Organic Aerosol in the Mexico City Metropolitan Area, American Geophysical Union (AGU) Fall Meeting, 2007 (oral presentation).
- Karydis V.A.; **Tsimpidi A.P.**; Nenes A.; Pandis S.P.; Zavala M.; Lei W.; Molina L.T. Simulating Inorganic Aerosol Components Using ISORROPIA II in a Chemical Transport Model (PMCAMx) - Evaluation for the MILAGRO Campaign 2006 in Mexico City, American Geophysical Union (AGU) Fall Meeting, 2007.
- Karydis, V.A.; **Tsimpidi, A.P.**; Pandis, S.N. Evaluation of a three-dimensional chemical transport model (PMCAMx) in the Eastern United States for all four seasons, 6th Greek Scientific Chemical Engineering Conference, 2007 (oral presentation).
- Tsimpidi, A.P.**; Karydis, V.A.; Pandis S.N. Response of inorganic fine particulate matters to emission changes of SO₂ and NH₃: The eastern United States as a case study, 6th Greek Scientific Chemical Engineering Conference, 2007 (oral presentation).
- Zavala M.; Lei W.; Bei N.; **Tsimpidi A.P.**; Karydis V.A.; Pandis S.P.; Molina L.T. Development and Evaluation of a Gas and PM Emissions Inventory for Mexico City, American Geophysical Union (AGU) Spring Meeting, 2007 (oral presentation).
- Tsimpidi A.P.**; Karydis V.A.; Lane T.; Racherla P.; Zavala M.; Lei W.; Molina L.T.; Pandis S.P. Chemical Transport Model (PMCAMx) versus Measurements: Insights about the Sources and Production of Particulate Matter in Mexico City, American Geophysical Union (AGU) Spring Meeting, 2007 (oral presentation).
- Pandis S.P.; Karydis V.A.; **Tsimpidi A.P.**; Zavala M.; Lei W.; Molina L.T. Evaluation of a Three-Dimensional Chemical Transport Model (PMCAMx) in the Mexico City Metropolitan Area, 2nd MILAGRO Science Meeting, 2007 (oral presentation).
- Karydis V.A.; **Tsimpidi A.P.**; Zavala M.; Lei W.; Molina L.T.; Pandis S.P. Evaluation of a Three-Dimensional Chemical Transport Model (PMCAMx) in the Mexico City Metropolitan Area, 2nd MILAGRO Science Meeting, 2007.

- Takahama S.; Pandis S.N.; Karydis V.A.; **Tsimpidi A.P.** Liquid-to-solid phase transitions of ambient aerosols, American Assoc. for Aerosol Research (AAAR) 24th Annual Conference, 2005.
- Karydis V.A.; **Tsimpidi A.P.**; Pandis S.N. Evaluation of a three-dimensional chemical transport model (PMCAMx) in the Eastern United States for all four seasons, American Assoc. for Aerosol Research (AAAR) 24th Annual Conference, 2005.
- Tsimpidi A.P.**; Karydis V.A.; Pandis S.N. Predicted responses of inorganic PM_{2.5} in the Eastern United States to emission changes using a three dimensional chemical transport model (PMCAMx) , American Assoc. for Aerosol Research (AAAR) 24th Annual Conference, 2005.