

TAMI C. BOND

CURRICULUM VITAE

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SCIENTIFIC BACKGROUND

Tami Bond's research has centered on the measurement and prediction of aerosols, particularly emissions, and their atmospheric impacts. Dr. Bond has constructed global and regional emission inventories of particulate matter, and has studied the combustion and control processes that lead to emissions. She has also conducted sampling to characterize optical and chemical properties of particulate matter in both the laboratory and field. Ongoing work involves understanding how optics, physics, and chemistry of particulate matter are linked, and developing global emission inventories to link engineering decisions with models of atmospheric chemistry and climate.

PROFESSIONAL PREPARATION

Ph.D., Interdisciplinary (Atmospheric Sciences, Civil Engineering, and Mechanical Engineering), University of Washington, Seattle, 2000.
M. S., Mechanical Engineering (Combustion), University of California at Berkeley, 1995.
B. S., Mechanical Engineering (*summa cum laude*), University of Washington, Seattle, Washington, 1993.

ACADEMIC & PROFESSIONAL APPOINTMENTS

2007-present	Affiliate Professor, Department of Atmospheric Sciences, University of Illinois at Urbana-Champaign
2003-present	Assistant Professor, Department of Civil & Environmental Engineering, University of Illinois at Urbana-Champaign, 2003-present.
2002-2003	Visiting Scientist, National Center for Atmospheric Research, 2002-2003.
2000-2002	NOAA Climate and Global Change Postdoctoral Fellow, NOAA/Pacific Marine Environmental Laboratories
2000-2002	Affiliate Associate Professor, University of Washington, Mechanical Engineering
1996-2000	Fannie and John Hertz Foundation Graduate Fellow, University of Washington
1993-1996	National Science Foundation Graduate Fellow
1990-1993	Research Assistant, Ecotope, Inc., Seattle, Washington, 1990-1993.

HONORS

Center for Advanced Study Fellow, University of Illinois, 2008
Xerox Award for Faculty Research, 2007
Arthur and Virginia Naumann Endowed Faculty Scholar, 2006-present
Incomplete List of Teachers Ranked as Excellent, University of Illinois, Spring 2004, Spring 2005, Fall 2005, Spring 2007
National Science Foundation CAREER award, 2004-present
Fannie and John Hertz Foundation Award for Outstanding Dissertation, 2000

SYNERGISTIC ACTIVITIES AND SERVICE

Aerosol Science & Technology (Journal)

Associate Editor, April 2009-present

NAS/NRC Committee on Significance of the International Transport of Air Pollutants, June 2008-present

Atmospheric Brown Cloud Expert Working Group on Emissions

Member, 2008-present

Atmospheric Chemistry and Physics (Journal)

Associate Editor, March 2008-present

Commission on Atmospheric Chemistry and Global Pollution

Member, 2006-present

Engineers in Technical and Humanitarian Opportunities of Service (ETHOS)

Board of Directors, 2004-2006

Technical Committee on Cookstove Performance Testing, Chair, 2007-present

International Conference on Carbonaceous Particles in the Atmosphere

Scientific Committee (Eighth Conference), 2004

Program Chair (Ninth Conference), 2008

Testimony before U.S. House of Representatives Committee on Oversight and Government Reform, Hearing on Black Carbon and Climate Change, October 18, 2007

PUBLICATIONS (BOND GROUP MEMBERS IN BOLD)

R. Subramanian, E. Winijkul, T. C. Bond, W. Thiansathit, N. T. Kim Oanh, I. Paw-armart and KG Duleep, Diesel emission characterization to quantify co-benefits: a piggyback study in Bangkok, Thailand, in press at *Environmental Science and Technology*, April 2009.

T. C. Bond, D. S. Covert, and T. Mueller, Technical note: Truncation and angular-scattering corrections for absorbing aerosol in the TSI 3563 nephelometer, in press at *Aerosol Science and Technology*, February 2009.

G. Lammel, A.M. Sehili, **T. C. Bond**, J. Feichter, and H. Grassl, Gas/particle partitioning and global distribution of polycyclic aromatic hydrocarbons – a modelling approach, *Chemosphere*, in press, 2009.

C. A. Roden, T. C. Bond, S. Conway, A. B. Osorto, N. MacCarty, and D. Still, Laboratory and field investigations of particulate and carbon monoxide emissions from traditional and improved cookstoves (2009), *Atmospheric Environment*, 43 (1170-1181).

N. Mahowald, T. D. Jickells, A. R. Baker, P. Artaxo, C. Benitez-Nelson, G. Bergametti, **T. C. Bond**, Y. Chen, D. D. Cohen, B. Herut, N. Kubilay, R. Losno, C. Luo, W. Maenhaut, K. A. McGee, G. S. Okin, R. Siefert, S. Tsukuda, (2008) The global distribution of atmospheric phosphorus sources, concentrations and deposition rates, and anthropogenic impacts, *Global Biogeochemical Cycles*, 22, doi:10.1029/2008GB003240.

G. Habib, C. Venkataraman, **T. C. Bond**, and J. J. Schauer, (2008) Chemical, microphysical and optical properties of primary particles from the combustion of biomass fuels, *Environmental Science and Technology*, 42(23), 8829-8834.

P. Boparai, J. Lee, and T. C. Bond (2008), Revisiting thermal-optical analysis of carbonaceous aerosol using a physical model, *Aerosol Science and Technology*, 42, 930-948.

N. MacCarty, D. Ogle, D. Still, **T. Bond**, and **C. A. Roden** (2008), A laboratory comparison of the global warming impact of five major types of biomass cooking stoves, *Energy for Sustainable Development XII* (2), 5-14.

Luo, C., N. Mahowald, **T. Bond**, P.Y. Chuang, P. Artaxo, R. Siefert, Y. Chen, and J. Schauer (2008), Combustion iron distribution and deposition, *Global Biogeochemical Cycles*, 22 (GB1012), doi:10.1029/2007GB002964.

Luo, C., N. Mahowald, **T. Bond**, P. Chuang, P. Artaxo, R. Siefert, Y. Chen, J. Schauer, Combustion iron distribution and deposition (2007), *Global Biogeochemical Cycles*, 22 (GB1012), doi:10.1029/2007GB002964.

T. C. Bond, Can warming particles enter global climate discussions? (2007), *Environmental Research Letters*, 2, 045030.

Bergstrom, R.W., P. Pilewskie, P.B. Russell, J. Redemann, **T.C. Bond**, P.K. Quinn, and B. Sierau (2007), Spectral absorption properties of atmospheric aerosols, *Atmos. Chem. Phys.*, 7, 5937-5943.

PUBLICATIONS (CONT'D)

- Sun, H., L. Biedermann, and T. C. Bond**, The color of brown carbon: a model for ultraviolet and visible light absorption by organic carbon aerosol, *Geophys. Res. Let.* (34), L17813, doi: 10.1029/2007GL029797.
- T. C. Bond, E. Bhardwaj, R. Dong, R. Jogani, S. Jung, C. Roden, D.G. Streets, S. Fernandes, and N. Trautmann**, Historical emissions of black and organic carbon aerosol from energy-related combustion, 1850-2000. *Global Biogeochemical Cycles 21*: GB2018, doi:10.1029/2006GB002840, 2007.
- Fernandes, S.M., N.M. Trautmann, D.G. Streets, **C.A. Roden**, and **T.C. Bond**, Global biofuel use, 1850-2000. *Global Biogeochemical Cycles 21*: GB2019, doi:10.1029/2006GB002836, 2007.
- Subramanian, R., C. A. Roden, P. Boparai and T. C. Bond**, Yellow beads and missing particles: Trouble ahead for filter-based absorption measurements, *Aer. Sci. Tech.* 41, 630-637, 2007.
- Koch, D., **T. C. Bond**, D. G. Streets, and N. Unger, Linking future aerosol radiative forcing to shifts in source activities, *Geophys. Res. Let.* 34 : L05821, doi:10.1029/2006GL028360, 2007.
- D. Koch, **T. C. Bond**, D. Streets, N. Bell, G. van der Werf, Global impacts of aerosols from particular source regions and sectors, *J. Geophys. Res.* 112: D02205, doi:10.1029/2005JD007024, 2007.
- Roden, C.A., **T.C. Bond**, S. Conway, and A.B.O. Pinel, Emission factors and real-time optical properties of particles emitted from traditional wood burning cookstoves. *Environ. Sci. Tech.* 40 : 6750-6757, 2006.
- Bond, T.C., G. Habib**, and R.W. Bergstrom, Limitations in the enhancement of visible light absorption due to mixing state. *J. Geophys. Res.* 111: D20211, doi:10.1029/2006JD007315, 2006.
- Dentener, F., S. Kinne, **T. Bond**, O. Boucher, J. Cofala, S. Generoso, P. Ginoux, S. Gong, J.J. Hoelzemann, A. Ito, L. Marelli, J.E. Penner, J.-P. Putaud, C. Textor, M. Schulz, G.R.v.d. Werf, and J. Wilson, Emissions of primary aerosol and precursor gases in the years 2000 and 1750: prescribed data-sets for AeroCom. *Atmos. Chem. Phys.* 6, 4321-4344, 2006.
- Fuzzi, S., M.O. Andreae, B.J. Huebert, M. Kulmala, **T.C. Bond**, M. Boy, S.J. Doherty, A. Guenther, M. Kanakidou, K. Kawamura, V.-M. Kerminen, U. Lohmann, L.M. Russell, and U. Pöschl, Critical assessment of the current state of scientific knowledge, terminology, and research needs concerning the role of organic aerosols in the atmosphere, climate, and global change. *Atmos. Chem. Phys.* 6: 2017–2038, 2006.
- Bond, T.C., B. Wehner, A. Plewka, A. Wiedensohler, J. Heintzenberg, and R.J. Charlson**, Climate-relevant properties of primary particulate emissions from oil and natural gas combustion, *Atmospheric Environment* (40), 3574-3587, 2006.
- Bates, T.S., T.L. Anderson, T. Baynard, **T. Bond**, O. Boucher, G. Carmichael, A. Clarke, C. Erlick, H. Guo, L. Horowitz, S. Howell, S. Kulkarni, H. Maring, A. McComiskey, A. Middlebrook, K. Noone, C.D. O'Dowd, J. Ogren, J. Penner, P.K. Quinn, A.R. Ravishankara, D.L. Savoie, S.E. Schwartz, Y. Shinozuka, Y. Tang, R.J. Weber, and Y. Wu, Aerosol direct radiative effects over the northwest Atlantic, northwest Pacific, and North Indian Oceans: estimates based on in-situ chemical and optical measurements and chemical transport modeling. *Atmos. Chem. Phys.* 6: 1657-1732, 2006.
- Bond, T.C.** and R. W. Bergstrom. Light absorption by carbonaceous particles: an investigative review, *Aerosol Science and Technology*, **40** (1), 27-67, 2006.
- Bond, T.C.** and **H. Sun**, Can reducing black carbon emissions counteract global warming?, *Environmental Science and Technology* **39**, 5921-5926, 2005.
- Girolamo, L.D., **T.C. Bond**, D. Bramer, D.J. Diner, F. Fettingner, R.A. Kahn, J.V. Martonchik, M.V. Ramana, V. Ramanathan, and P.J. Rasch, Analysis of Multi-angle Imaging SpectroRadiometer (MISR) aerosol optical depths over greater India during winter 2001-2004. *Geophys. Res. Let.* 31 : L23115, doi:10.1029/2004GL021273, 2004.
- Bond, T. C., C. Venkataraman, and O. Masera**, Global atmospheric impacts of residential fuels, *Energy for Sustainable Development VIII* (3), 54-66, 2004.
- Streets, D.G., **T.C. Bond**, T. Lee, and C. Jang, On the future of carbonaceous aerosol emissions, *Journal of Geophysical Research*, **109** (D24), D24212, doi:10.1029/2004JD004902, 2004.
- Bond, T.C., D. G. Streets, K. F. Yarber, S. M. Nelson, J.-H. Woo, and Z. Klimont**, A technology-based global inventory of black and organic carbon emissions from combustion, *Journal of Geophysical Research* **109**, D14203, doi:10.1029/2003JD003697, 2004.
- Streets, D.G., **T. C. Bond**, G. R. Carmichael, S. D. Fernandes, Q. Fu, D. He, Z. Klimont, S. M. Nelson, N. Y. Tsai, M. Q. Wang, J.-H. Woo, and K. F. Yarber, An inventory of gaseous and primary aerosol emissions in the year 2000, *Journal of Geophysical Research* **108**(D21), 8809, doi: 10.1029/2002JD003093, 2003.

PUBLICATIONS (CONT'D)

- Bond, T.C.**, D. S. Covert, J. C. Kramlich, T. V. Larson, and R. J. Charlson, R. J., Primary particle emissions from residential coal burning: optical properties and size distributions, *Journal of Geophysical Research* 107 (D21): doi:10.1029/2001JD000571, 2002.
- Bond, T.C.**, Spectral dependence of visible light absorption by carbonaceous particles emitted from coal combustion, *Geophysical Research Letters* 28 (21): 4075-4078, 2001.
- Streets, D.G., S. Gupta, S. T. Waldhoff, M. Q. Wang, **T. C. Bond**, and Y. Bo. Black Carbon Emissions in China. *Atmospheric Environment* 35, 4281-4296, 2001.
- Bond, T.C.**, T. L. Anderson, and D. Campbell, D., Calibration and intercomparison of filter-based measurements of visible light absorption by aerosols, *Aerosol Sci. and Tech.* 30: 582-600, 1999.
- Bond, T.C.**, M. Bussemer, B. Wehner, S. Keller, R. J. Charlson, and J. Heintzenberg, Light absorption by primary particle emissions from a lignite burning plant, *Environ. Sci. Tech.* 33: 3887-3891, 1999.
- Bond, T.C.**, R. J. Charlson, and J. Heintzenberg, Quantifying the emission of light-absorbing particles: measurements tailored to climate studies, *Geophysical Research Letters* 25 (3): 337-340, 1998.

SOFTWARE PACKAGES

Speciated Pollutant Emission Wizard (SPEW) for global emission inventories, primary developer. Includes modules SPEW Historical Builder (for emissions 1850-present) and SPEW-Trend (for future projections present-2050).