

# Wenjun Li

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## Education Background

- 8/2009–8/2011 Ph.D., North Carolina State University, Department of Chemical and Biomolecular Engineering (transfer). Advisor: Prof. Phillip R. Westmoreland. Exp. Grad.: 08/2011.  
*Thesis: Chemistry of molecular-weight growth in flames of key hydrocarbon fuels.*
- 9/2006–8/2009 Ph.D. studies (first three years), University of Massachusetts Amherst, Department of Chemical Engineering. Advisor: Prof. Phillip R. Westmoreland. GPA: 3.90/4.00.  
*Research: Molecular-beam mass spectrometry of hydrocarbon flames at UMass and Lawrence Berkeley National Lab; reactive flow modeling; mechanism development; improving kinetics; reaction flux analysis; and theoretical quantum chemistry modeling.*
- 9/2003–7/2006 M.S. Chem. Eng., Tsinghua Univ., China. “Characterization of BET surface area, pore size distribution and intra-particle diffusivity of porous materials”. Grades: 86/100.  
*Research: Modification and calibration of a self-built adsorption and TAP apparatus; characterization of surface area and pore-size distribution for catalysts; DFT study of adsorption isotherms; measuring intra-particle effective diffusivity with TAP reactors.*
- 9/1999–7/2003 B.E. Chem. Eng., Beijing Univ. of Chemical Technology. Grades: 91/100; rank: 3/180.  
*Thesis: Automatic control, data acquisition and online fast analysis of distilled towers.*

## Awarded Honors

- 11/2010 Catalysis & Reaction Eng. division travel award for 2010 AIChE meeting, Salt Lake City.
- 05/2009 Travel Award for the 6th U.S. National Combustion Meeting, Ann Arbor, Michigan.
- 10/2004 Tsinghua University, the Third-Class Dongkong Scholarship, Beijing, China.
- 07/2003 BUCT Excellent Undergraduate Thesis Award, Beijing, China.
- 07/2003 Excellent Graduated Students Award of Beijing Region, China.
- 12/2000 The Third-Class Award in College Physics Matches of Beijing Region, China.
- 1999-2003 BUCT Excellent Study Scholarships, Excellent Student Honors, six times, Beijing.

## Publications

- **W. Li**, P. R. Westmoreland, N. Hansen, T. A. Cool, K. Kohse-Höinghaus. “Understanding of acetylene chemistry using MBMS analysis and simulation”. *Combustion and Flame* (2011), in preparation.
- D. R. Yeates, **W. Li**, P. R. Westmoreland, M. Frenklach. “Uncertainty-quantified analysis of complex systems: A case of Advanced Light Source flame experiments.” *JPCA* (2011), soon to submit.
- **W. Li**, P. R. Westmoreland, B. Yang, J. Wang, T. A. Cool, T. Kasper, N. Hansen, K. Kohse-Höinghaus. “Comparison of fuel-rich and lean toluene combustion”. *Combustion and Flame* (2011), soon to submit.
- **W. Li**, M. E. Law, P. R. Westmoreland, T. Kasper, N. Hansen, K. Kohse-Höinghaus. “Multiple benzene formation paths in a fuel-rich cyclohexane flame”. *Combustion and Flame*, accepted.
- N. Hansen, **W. Li**, M. E. Law, T. Kasper, P. R. Westmoreland, B. Yang, T. A. Cool, A. Lucassen. “The Importance of Fuel Dissociation and Propargyl + Allyl Association for the Formation of Benzene in a Fuel-Rich 1-Hexene Flame,” *Phys. Chem. Chem. Phys.* **12(38)** (2010) 12112-12122.
- N. Hansen, T. Kasper, B. Yang, T. A. Cool, **W. Li**, P. R. Westmoreland, P. Oßwald, K. Kohse-Höinghaus, “Fuel-Structure Dependence of Benzene Formation Processes in Premixed Flames Fueled by C<sub>6</sub>H<sub>12</sub> Isomers,” *Proc. Combust. Inst.* **33** (2011) (585-592).

- Y. Liu, Y. Wang, Y. Liu, **W. Li**, W. Zhou, F. Wei. Purifying double-walled carbon nanotubes by vacuum high-temperature treatment. *Nanotechnology* **18(17)** (2007) 175704.
- J. Zhu, Y. Wang, **W. Li**, F. Wei, Y. Yu. “A density functional study of nitrogen adsorption in Single-Wall Carbon Nanotubes”. *Nanotechnology* **18** (2007) 095707.
- R. Hu, X. Zhao, S. Ding, **W. Li**, Y. Chen, D. Wang. “Determination of a catalyst powder’s active site concentration with a pulse reactor in Knudsen flow”. *Chem. Eng. Sci.* **121** (2007) 5317-5321.
- **W. Li**, L. Xie, L. Gao, X. Zhao, R. Hu, Y. Cheng, D. Wang. “The measurement of gas diffusivity in porous materials by temporal analysis of products (TAP).” *Catalysis Today* **121(3-4)** (2007) 246-254.
- **W. Li**, Y. Wang, F. Wei, D. Wang. “Adsorption manometry apparatus for high resolution and low pressure adsorption isotherms.” *Chinese Journal of Catalysis* **27(3)** (2006) 200-202.
- X. Zhao, **W. Li**, D. Wang. “The advantages of micro-kinetics study for reactor design.” *Chemical Engineering of Oil & Gas*, **33(S1)** (2004) 68~70.

## Presentations

- **W. Li**, M. E. Law, P. R. Westmoreland, T. Kasper, N. Hansen, K. Kohse-Höinghaus. “Multiple benzene-formation paths in a fuel-rich cyclohexane flame.” *The 7th U.S. National Combustion Meeting*, Atlanta, March 20-23, 2011.
- D. R. Yeates, **W. Li**, P. R. Westmoreland, M. Frenklach. “Predictions of raw experimental premixed-laminar-flame data with quantified uncertainties.” *The 7th U.S. National Combustion Meeting*, Atlanta, March 20-23, 2011.
- **W. Li**, P. R. Westmoreland, B. Yang, T. Kasper, N. Hansen. “Comparison of fuel rich and stoichiometric premixed toluene flat flames.” *AIChE Annual Meeting*, Salt Lake City, UT, Nov. 7-12, 2010.
- **W. Li**, M. E. Law, P. R. Westmoreland, T. Kasper, N. Hansen, J. Wang, T. A. Cool, K. Kohse-Höinghaus. “Competing paths for benzene formation in cyclohexane premixed flat flames.” *33rd International Symposium on Combustion*, Poster W5P006, Beijing, China, August 1-6, 2010.
- **W. Li**, N. Labbe, P. R. Westmoreland, B. Yang, J. Wang, T. A. Cool, T. Kasper, N. Hansen, K. Kohse-Höinghaus. “Inferring fuel-rich toluene flame chemistry from photo-ionization MBMS analysis and modeling.” *AIChE Annual Meeting*, Nashville TN, Nov. 8-13, 2009.
- **W. Li**, M. E. Law, P. R. Westmoreland, T. Kasper, N. Hansen, T. A. Cool, K. Kohse-Höinghaus. “Determining oxidation and growth kinetics through photo-ionization MBMS analysis and modeling of cyclohexane flames.” *The 6th U.S. National Combustion Meeting*, Ann Arbor, May 17-21, 2009.
- P. R. Westmoreland, **W. Li**, N. Hansen, T. Kasper, T. A. Cool, A. Lucassen, K. Kohse-Höinghaus. “Advances in understanding ethyne chemistry from 45 years of MBMS flame research.” *The 6th U.S. National Combustion Meeting*, Ann Arbor, May 17-21, 2009.
- **W. Li**, P. R. Westmoreland. “Measurement and modeling of fuel-rich cyclo-hexane combustion.” *The 27th Eastern State Regional Kinetics and Dynamics Meeting*, UMass Amherst, January, 2009.
- N. Labbe, **W. Li**, P. R. Westmoreland, A. Lucassen, P. Oßwald, U. Struckmeier, K. Kohse-Höinghaus, T. Kasper, N. Hansen, T. A. Cool. “Development of a combustion mechanism for morpholine.” *32nd International Symposium on Combustion*, Montreal, Canada, August 3-8, 2008. Poster W5P111.
- P. R. Westmoreland, M. E. Law, **W. Li**, M. Chaos, F. L. Dryer, T. A. Cool, J. Wang, B. Yang, N. Hansen, T. Kasper, K. Kohse-Höinghaus, P. Oßwald, C. K. Westbrook. “Using MBMS for characterization and kinetics in hydrocarbon and oxygenate flames.” *Central States of Combustion Institute*, 2008.
- **W. Li**, Y. Wang, D. Wang, F. Wei. “High resolution adsorption isotherm characterization.” *The 2nd Chinese National Chemical & Biochemical Engineering Conference*, 2005.