

Bryan W. Weber

CONTACT INFORMATION

University of Connecticut
Department of Mechanical Engineering
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RESEARCH INTERESTS

Combustion Engineering: Alternative biofuels including alcohols and biodiesel; design of novel experimental methods for combustion analysis

EDUCATION

University of Connecticut, Storrs, CT, USA

Doctor of Philosophy, Mechanical Engineering, 2014 (Planned)

Working Dissertation Title: *High Pressure Ignition Chemistry of Alternative Fuels*

Master of Science, Mechanical Engineering, 2010

Thesis Title: *Autoignition of n-Butanol at Low to Intermediate Temperature and Elevated Pressure*

Advisor: Dr. Chih-Jen (Jackie) Sung

Case Western Reserve University, Cleveland, OH, USA

Bachelor of Science, Aerospace Engineering, 2009

Senior Project Title: *Analysis of Heavy Hydrocarbon Fuels using Gas Chromatography with Mass Spectrometry*

Advisor: Dr. Chih-Jen (Jackie) Sung

RESEARCH EXPERIENCE

Combustion Diagnostics Laboratory

2007-Present

University of Connecticut, Storrs, CT, USA

Case Western Reserve University, Cleveland, OH, USA

Projects:

- Experimentally and computationally studying the ignition properties of the butanol isomers over a wide pressure range
- Designing a species sampling apparatus for time-resolved species measurements in the rapid compression machine
- Experimentally investigating the autoignition of iso-pentanol in the rapid compression machine
- Experimentally investigating the autoignition of methyl-cyclohexane in the rapid compression machine
- Characterized the components of heavy hydrocarbon fuels, including conventional and synthetic jet fuels, using gas chromatography/mass spectrometry

TEACHING EXPERIENCE

University of Connecticut, Storrs, CT, USA

- ENGR 1166: Introduction to Mechanical Engineering
Lecturer and Grader

Spring 2013

- ME 3239: Combustion for Energy Conversion
Teaching Assistant and Substitute Lecturer

Fall 2012

ADMINISTRATIVE EXPERIENCE

Combustion Energy Frontier Research Center
Co-chair, Junior Associates Committee

2012-Present

AWARDS AND FELLOWSHIPS	First Place, Mechanical Engineering Graduate Research Competition	Spring 2013
	Graduate Assistantship in Areas of National Need Awarded in the area of Sustainable Energy Technologies	Spring 2010
	Fred H. Vose Prize Awarded to the senior in Mechanical and Aerospace Engineering at Case Western Reserve University showing the most promise for future leadership	Spring 2009
JOURNAL PUBLICATIONS	B.W. Weber and C.J. Sung. <i>Comparative Autoignition Trends in Butanol Isomers at Elevated Pressure</i> . Energy and Fuels, vol. 27, no. 3, pp. 1688-1698. doi:10.1021/ef302195c	
	T. Tsujimura, W.J. Pitz, F. Gillespie, H.J. Curran, B.W. Weber , Y. Zhang, and C.J. Sung. <i>Development of Isopentanol Reaction Mechanism Reproducing Autoignition Character at High and Low Temperatures</i> . Energy and Fuels, vol. 26, no. 8, pp. 4871-4886. doi:10.1021/ef300879k	
	B.W. Weber , K. Kumar, Y. Zhang, and C.J. Sung. <i>Autoignition of n-butanol at elevated pressure and low-to-intermediate temperature</i> . Combustion and Flame, vol. 158, no. 5, pp. 809-819. doi: 10.1016/j.combustflame.2011.02.005	
CONFERENCE PRESENTATIONS	B.W. Weber , W.J. Pitz, C.J. Sung, M. Mehl, E.J. Silke, A.C. Davis. <i>Experiments and Modeling of the Autoignition of Methyl-Cyclohexane at High Pressure</i> . Paper 3A02, 8 th US National Technical Meeting of the Combustion Institute, Park City, UT, May 2013.	
	B.W. Weber , S.S. Merchant, C.J. Sung, and W.H. Green. <i>An Autoignition Study of iso-Butanol: Experiments and Modeling</i> . Paper 3A01, 8 th US National Technical Meeting of the Combustion Institute, Park City, UT, May 2013.	
	S.M. Sarathy, S. Park, W. Wang, P. Veloo, A.C. Davis, C. Togbé, B.W. Weber , C.K. Westbrook, O. Park, G. Dayma, Z. Luo, M.A. Oehlschlaeger, F. Egolfopoulos, T. Lu, W.J. Pitz, C.J. Sung, P. Dagaut. <i>A Comprehensive Experimental and Modeling Study of iso-Pentanol Combustion</i> . Paper 2A12, 8 th US National Technical Meeting of the Combustion Institute, Park City, UT, May 2013.	
	B.W. Weber and C.J. Sung. <i>Comparative Investigation of the High Pressure Autoignition of the Butanol Isomers</i> . Paper A-01, Fall Technical Meeting of the Eastern States Section of the Combustion Institute, Storrs, CT, October 2011.	
	M.R. Harper, W.H. Green, K.M. Van Geem, B.W. Weber , C.J. Sung, I. Stranic, D.F. Davidson, R.K. Hanson. <i>Combustion of the butanol isomers: Reaction pathways at elevated pressures from low-to-high temperatures</i> . Paper #84, 7 th International Conference on Chemical Kinetics, Massachusetts Institute of Technology, Cambridge, MA, July 2011.	
	B.W. Weber and C.J. Sung. <i>A Rapid Compression Study of the Butanol Isomers at Elevated Pressure</i> . Paper 1B13, 7 th US National Technical Meeting of the Combustion Institute, Georgia Institute of Technology, Atlanta, GA, March 2011.	
	B.W. Weber , K. Kumar, and C.J. Sung. <i>Autoignition of Butanol Isomers at Low to Intermediate Temperature and Elevated Pressure</i> . Paper AIAA-2011-0316, 49 th Annual Aerospace Sciences Meeting, Orlando, FL, January 2011.	
POSTER PRESENTATIONS	B.W. Weber and C.J. Sung. <i>Validation of Kinetic Models of the Butanol Isomers At High Pressure using a Rapid Compression Machine</i> . Poster T40, 7 th International Conference on Chemical Kinetics, Massachusetts Institute of Technology, Cambridge, MA, July 2011.	
	B.W. Weber . <i>Autoignition of n-Butanol at Elevated Pressure and Low to Intermediate Temperature</i> . 1 st Combustion Energy Frontier Research Center Annual Meeting, Princeton University, Princeton, NJ, September 2010.	