

# Bryan W. Weber

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CONTACT INFORMATION	University of Connecticut Department of Mechanical Engineering 191 Auditorium Road U-3139 Storrs, CT 06269 USA		<i>Email:</i> bryan.weber@uconn.edu <i>Work:</i> (860) 486-2492 <i>Cell:</i> (412) 443-6447 <i>Web:</i> <a href="http://bryanwweber.com">http://bryanwweber.com</a>
RESEARCH INTERESTS	<b>Combustion Engineering:</b> Alternative biofuels including alcohols and biodiesel; design of novel experimental methods for combustion analysis		
EDUCATION	<b>University of Connecticut, Storrs, CT, USA</b> Doctor of Philosophy, Mechanical Engineering, 2013 (Planned) Working Dissertation Title: <i>High Pressure Ignition Chemistry of Alternative Fuels</i>  Master of Science, Mechanical Engineering, 2010 Thesis Title: <i>Autoignition of n-Butanol at Low to Intermediate Temperature and Elevated Pressure</i>  Advisor: Dr. Chih-Jen (Jackie) Sung  <b>Case Western Reserve University, Cleveland, OH, USA</b> Bachelor of Science, Aerospace Engineering, 2009 Senior Project Title: <i>Analysis of Heavy Hydrocarbon Fuels using Gas Chromatography with Mass Spectrometry</i> Advisor: Dr. Chih-Jen (Jackie) Sung		
RESEARCH EXPERIENCE	<b>Combustion Diagnostics Laboratory</b> University of Connecticut, Storrs, CT, USA Case Western Reserve University, Cleveland, OH, USA <b>Ongoing Projects:</b> <ul style="list-style-type: none"><li>• Computationally and experimentally studying the ignition properties of the butanol isomers over a wide pressure range</li><li>• Experimentally investigating the high-pressure autoignition of actual and surrogate bio-diesel fuels (planned)</li><li>• Designing a species sampling apparatus for time-resolved species measurements in the rapid compression machine</li></ul> <b>Completed Projects:</b> <ul style="list-style-type: none"><li>• Characterized the components of heavy hydrocarbon fuels, including conventional and synthetic jet fuels, using gas chromatography/mass spectrometry</li><li>• Experimentally investigated the autoignition of iso-pentanol in the rapid compression machine</li></ul>		<b>2007-Present</b>
TEACHING EXPERIENCE	<b>University of Connecticut, Storrs, CT, USA</b> <ul style="list-style-type: none"><li>• ME 3239: Combustion for Energy Conversion Teaching Assistant and substitute lecturer</li></ul>		<b>2012-Present</b>  Fall 2012
ADMINISTRATIVE EXPERIENCE	<b>Co-chair, Combustion Energy Frontier Research Center Junior Associates Committee</b> <b>2012-Present</b>		
AWARDS, FELLOWSHIPS, AND GRANTS	<b>Graduate Assistantship in Areas of National Need</b> Awarded in the area of Sustainable Energy Technologies		<b>Spring 2010</b>

**Fred H. Vose Prize****Spring 2009**

Awarded to the senior in Mechanical and Aerospace Engineering at Case Western Reserve University showing the most promise for future leadership

**Summer Undergraduate Research in Energy Sciences Grant****Summer 2008**

Awarded for research to analyze the composition of traditional petroleum-based hydrocarbon fuels using GC/MS

**JOURNAL  
PUBLICATIONS**

T. Tsujimura, W.J. Pitz, F. Gillespie, H.J. Curran, **B.W. Weber**, Y. Zhang, and C.J. Sung. Development of Isopentanol Reaction Mechanism Reproducing Autoignition Character at High and Low Temperatures. *Energy and Fuels*, vol. 26, no. 8, pp. 4871-4886, Aug. 2012. doi:10.1021/ef300879k

**B.W. Weber**, K. Kumar, Y. Zhang, and C.J. Sung. Autoignition of n-butanol at elevated pressure and low-to-intermediate temperature. *Combustion and Flame*, vol. 158, no. 5, pp. 809-819, Mar. 2011. doi:10.1016/j.combustflame.2011.02.005

**CONFERENCE  
PRESENTATIONS**

**B.W. Weber** and C.J. Sung. Comparative Investigation of the High Pressure Autoignition of the Butanol Isomers. 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. Combustion of the butanol isomers: Reaction pathways at elevated pressures from low-to-high temperatures. Paper #84 7<sup>th</sup> International Conference on Chemical Kinetics, Massachusetts Institute of Technology, Cambridge, MA, July 2011.

**B.W. Weber** and C.J. Sung. A Rapid Compression Study of the Butanol Isomers at Elevated Pressure. Paper 1B13, 7<sup>th</sup> 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. Autoignition of Butanol Isomers at Low to Intermediate Temperature and Elevated Pressure. Paper AIAA-2011-0316, 49<sup>th</sup> Annual Aerospace Sciences Meeting, Orlando, FL, January 2011.

**POSTER  
PRESENTATIONS**

**B.W. Weber** and C.J. Sung. Validation of Kinetic Models of the Butanol Isomers At High Pressure using a Rapid Compression Machine. Poster T40, 7<sup>th</sup> International Conference on Chemical Kinetics, Massachusetts Institute of Technology, Cambridge, MA, July 2011.

**B.W. Weber**. Autoignition of n-Butanol at Elevated Pressure and Low to Intermediate Temperature. 1<sup>st</sup> Combustion Energy Frontiers Research Center Annual Meeting, Princeton University, Princeton, NJ, September 2010.

**B.W. Weber**, K. Kumar, and C.J. Sung. An Investigation of Hydrocarbon Flames using Probe Sampling and Gas Chromatography/Mass Spectrometry. Support of Undergraduate Research and Creative Endeavors Symposium and Poster Session, Case Western Reserve University, Cleveland, OH, April 2009.

**OTHER  
PRESENTATIONS**

**B.W. Weber** and C.J. Sung. Analysis of Hydrocarbon Fuels using Gas Chromatography/Mass Spectrometry. Summer Undergraduate Research in Energy Sciences, Dominion Energy East Ohio Branch, Cleveland, OH, August 2008.