# High Pressure Ignition Chemistry of Alternative Fuels Bryan William Weber, Ph.D. University of Connecticut, 2014

Abstract

#### High Pressure Ignition Chemistry of Alternative Fuels

#### Bryan William Weber

B.S., Case Western Reserve University, 2009M.S., University of Connecticut, 2010

#### A Dissertation

Submitted in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy at the

University of Connecticut

# Copyright ©2014 Bryan William Weber

This work is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License.

http://creativecommons.org/licenses/by-nc-nd/4.0/deed.en\_US

#### APPROVAL PAGE

# Doctor of Philosophy Dissertation High Pressure Ignition Chemistry of Alternative Fuels

## Presented by Bryan William Weber, B.S., M.S.

Major Advisor		
	Chih-Jen Sung	
Associate Advisor		
	Baki Cetegen	
Associate Advisor		
	Michael Renfro	

University of Connecticut 2014

### Acknowledgements

So long, and thanks for all the fish.

#### **Contents**

Acknowledgements		ii
1	Introduction	1
2	Experimental Facilities	2
3	Butanol	3
4	Pentanol	4
5	MCH	5
6	Conclusions	6

#### Introduction

### **Experimental Facilities**

#### **Butanol**

#### **Pentanol**

#### **MCH**

#### **Conclusions**

#### **Bibliography**

- [1] Weber, B. W., Kumar, K., Zhang, Y., and Sung, C.-J. *Combust. Flame*, vol. 158, no. 5 (Mar. 2011), pp. 809–819. DOI: 10.1016/j.combustflame.2011.02.005.
- [2] Sarathy, S. M., Park, S., Weber, B. W., Wang, W., Veloo, P. S., Davis, A. C., et al. *Combust. Flame*, vol. 160, no. 12 (Dec. 2013), pp. 2712–2728. DOI: 10.1016/j.combustflame. 2013.06.022.