

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, 2009

M.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

2014

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

Chapter 1

Introduction

This is the start of the introduction. [1–3]. Sarathy et al. [4] found that blah.

Bibliography

- [1] Bryan William Weber, Kamal Kumar, Yu Zhang, and Chih-Jen Sung. "Autoignition of n-butanol at elevated pressure and low-to-intermediate temperature". In: *Combustion and Flame* 158.5 (Mar. 2011), pp. 809–819. ISSN: 00102180. DOI: 10.1016/j.combustflame.2011.02.005.
- [2] Bryan William Weber and Chih-Jen Sung. "Comparative Autoignition Trends in Butanol Isomers at Elevated Pressure". In: *Energy & Fuels* 27.3 (Mar. 2013), pp. 1688–1698. ISSN: 0887-0624. DOI: 10.1021/ef302195c.
- [3] Taku Tsujimura et al. "Development of Isopentanol Reaction Mechanism Reproducing Autoignition Character at High and Low Temperatures". In: *Energy & Fuels* 26.8 (Aug. 2012), pp. 4871–4886. ISSN: 0887-0624. DOI: 10.1021/ef300879k.
- [4] S. Mani Sarathy et al. "A comprehensive experimental and modeling study of iso-pentanol combustion". In: *Combustion and Flame* 160.12 (Dec. 2013), pp. 2712–2728. ISSN: 00102180. DOI: 10.1016/j.combustflame.2013.06.022.