

Acknowledgments

I am deeply grateful for the assistance and contributions of many people to the work in this dissertation and to the adventure that is graduate school—without you, it would not have been possible!

First and foremost, I want to thank Prof. Bob Grubbs for being a wise advisor and mentor. He provided me with the freedom to pursue my own ideas, yet at the same time, steered me in the right direction at several critical points. I feel fortunate to have had the opportunity to work in his group and participate in the exciting field of olefin metathesis.

I appreciate the support of my committee—Profs. John Bercaw, Peter Dervan, and Jackie Barton. A special thanks also goes to Prof. Harry Gray for his encouragement with respect to Chapter 5, his contributions at the Friday organometallics seminars, and for picking up the bar tab at the Ath.

It has been a great privilege to be part of the Grubbs group. In particular, I would like to acknowledge Erika Bellman, Helen Blackwell, Arnab Chatterjee, Paul Choi, Tae-Lim Choi, Brian Connell, Eric Connor, Justin Gallivan, Amy Giradello, Steve Goldberg, Prof. Han, Andy Hejl, Sebastian Koltzenberg, Ghee Zhong Lai, Choon Woo Lee, Jennifer Love, Dave Lynn, Adam Matzger, Heather Maynard, Andrew Morehead, John Morgan, Dan Sanders, Melanie Sanford, Jon Seiders, Dean Toste, Mike Ulman, Bill Ward, Tom Wilhelm, Todd Younkin, and Prof. Xumu Zhang. These people have been there to share the frustrations of research—the late nights, the uncooperative computers, the faulty equipment—as well as those exciting and precious moments when the reactions actually worked. I have valued their enthusiasm about chemistry, and I thank them for helpful suggestions, their comments on many manuscripts and proposals, and the experiences of some very memorable camping trips.

There are many crystal structures in this dissertation, which is in large part due to the crystallographic expertise and dry wit of Larry Henling. I also thank Dr. Mike Day for his efforts in solving these structures and Dr. Robert Lee for setting up the 400 MHz NMR for ^{95}Mo . The rest of the staff deserves a great deal of credit for keeping the department running and for being a pleasure to interact with—especially Linda Syme, Dian Buchness, Steve Gould, Tom Dunn, and

Rick Gerhart. In addition, Materia, Inc. continues to generously supply ruthenium starting materials to the group, and Dr. Sharad Hajela was especially helpful by sharing many of his catalyst development results.

I have been fortunate to collaborate with two research groups outside of Caltech. Prof. Toshio Masuda and his student Toshikazu Sakaguchi at Kyoto University, Japan, contributed to the polymerization studies in Chapter 4. The expertise of Prof. Dennis Lichtenberger and his student Tonja Bill at the University of Arizona was essential to the photoelectron spectroscopy in Chapter 5.

I would not have made it to Caltech without the support and inspiration of my parents, who have always encouraged me to pursue my interests. I am especially grateful to my mom for her incredible love and her strength during difficult times. In addition, John Morgan has been the “special someone” in my life during graduate school, and I cannot thank him enough for his love, confidence, and companionship.

Finally, I sincerely acknowledge the financial support of the U.S. Department of Defense in the form of an NDSEG fellowship, as well as the U.S. National Science Foundation and National Institutes of Health for additional research funding.