

## ACKNOWLEDGEMENTS

First and foremost, I would like to thank Professor Gibson for not only giving me the opportunity to work in his laboratories but also being a great mentor. I would also like to thank my committee, Professors Kingston, McGrath, Riffle, and Ward for their guidance in my research. Special thanks go to Professor Marand for his helpful discussions on the thermal analyses of the supramolecular polymers in chapter 5.

I would like to thank my parents, Seizo and Yuuko Yamaguchi, for their love and support throughout my undergraduate and graduate studies in the States.

I also want to acknowledge the efforts of Mr. Tom Glass for his assistance with  $^1\text{H}$  NMR spectroscopy. My thanks also go to Mr. Steve McCartney for TEM and AFM analysis and Mr. Frank Cromer for SEM analysis. I am particularly grateful to Professor Rheingold and his coworkers at the University of Delaware for providing X-ray crystallography data in chapter 10.

I am also grateful to the following colleagues whose suggestions and encouragement were invaluable throughout my graduate career at Virginia Tech: Sang-Hun Lee, Jim Yang, Bill Bryant, Darin Dotson, Dev Nagvekar, Lesley Hamilton, Susmita Bhattacharjee, Reinaldo Rodrigues, Peter Balanda, Eric Mahan, Philip Mason, Caiguo Gong, Hong Wang, Jason Jones, and Melissa Witmer.