

Acknowledgements

Upon finishing this dissertation, my sincere gratitude goes to my advisor, Dr. Anbo Wang. Without his faith, patience, and generous support, this dissertation could never be done. His encouragement and valuable guidance have made each every day of the last four years worth and count. With his confidence, determination, dedication, and incredible achievements, he will continue to serve as my mentor who sheds light on my journey in front.

I would also like to thank Dr. Russell G. May, Dr. Ira Jacobs, Dr. Wing Ng, and Dr. Ioannis M. Besieris for serving on my committee and for the encouragements and valuable suggestions that I received from them.

My gratitude should also go to all my colleagues and friends at the Photonics Lab, which we have shared as our home. Among them, I would like to thank Russell May, Gary Pickrell, Jiangdong Deng, Ming Luo, Wei Huo, Zhiyong Wang, Po Zhang, Bing Qi, Yuhong Duan, Yibing Zhang, and Wei Peng, for their valuable suggestions and support. I am also grateful to Debbie Collins, who with her patience and thoughtfulness has made the Photonics Lab a place with pleasure.

With all my love, I am in debt to my wife, Ming, who always gently holds my hands through the years behind and into the years to come; to my parents, who raised me with their humble salary, educated with their limited knowledge, and shaped me with their heart and love; and to my special brother, JD, whom I am blessed to have.