ACKNOWLEDGEMENTS

I wish to start my sincere thanks to my major advisor -- Dr. Audrey Zink-Sharp, who gave me whatever kinds of support that I needed, and whenever I needed, during the whole process of the project's going. Without her consistent encouragement and deep concern, I would never be able to get to this point of my life.

The sincere thanks are extended to all of my committee members -- Dr. Robert L. Youngs, Dr. Frederick A. Kamke, Dr. Fred M. Lamb and Dr. Thomas E. Diller. Valuable advices and great encouragements were given to me from their priceless life and scientific research experience. Discussions with everyone of them when I was in deep struggling with the project gave me bright ideas to start with.

Next I want to express my many thanks to Prof. Juergen Sell and his wood team at EMPA (Swiss Federal Institute for Material testing), Switzerland. With their unlimited help for my testing samples and a lot of SEM tests, I could be able to finish my project on time.

Thanks are also given to the technical staffs working at the Forest Products Brooks Center -- Carlile Price, Kenneth L. Albert and Robert S. Carner -- for their immediate help for any technical requests. I would also like to thank Linda Caudill, Angie Reigel, and Sharon Daley for the best friendships and entertainments given to me during my hard times. Appreciations are given to the fellow graduate students -- Christian P. Heine and Balazs G. Zombori, for sharing their valuable thoughts with me on the research studies.

Finally, I own the big appreciation to my parents. The hard working spirits and intelligence inherited from them made me coming through all the way here. Their great expectations pushed me through all the difficult times. The big thanks was also owed to my husband. Without his completely unselfish support and sincerely encouragement at all my difficult times, I would never be able to become current me.