I would like to express my deep sense of gratitude to the authorities of the University of Mysore, Mysore, for permission and facilities, without which I would not have accomplished the present work.

I feel, indeed, blessed and privileged to have research supervisor Dr. K. Basavaiah, M.Sc., Ph.D, Professor of Chemistry, Department of Studies in Chemistry, University of Mysore, Mysore. With his constant religious presence in the laboratory to inspire, motivate and guide research scholar to explore and research in true sense, Prof. K. Basavaiah had infused me scientific temper and scientific spirit. With his timely feedback and follow up action provided with abundant patience and compassion, Prof. K. Basavaiah had instilled in me self-confidence and a tremendous sense of joy in pursuing the research. I, remain, forever indebted to him.

I feel highly privileged to extend my gratitude and cordial thanks to Prof. H.S. Yathirajan, Chairman, Department of Studies in Chemistry, University of Mysore, Mysore for his encouragement, appreciation and help during this research work. I also express my thanks to the former Chairperson - Prof. D. Channe Gowda for providing the facilities to carry out the research and his keen interest and encouragement. I am deeply indebted to the Doctoral Committee members Prof. H.S. Yathirajan, Prof. H.D. Revanasiddappa and Dr. K.N. Mohan for their valuable suggestions. I am also grateful to Prof. K.M. Lokanath Rai for his cooperation, valuable suggestions and help during my work.

I am also thankful to Dr. N. Rajendra Prasad, Dr. K.B. Vinay, Dr. A.M.A Sameer, Dr. O.Z. Devi my laboratory mates M.S. Raghu, P. J. Ramesh, M.X. Cijo, N. Swamy and P. Vamsi Krishna, and all my friends for their support and valuable advice. I am also thankful to all teaching, non-teaching staff and research scholars in the Department of Studies in Chemistry, University of Mysore, Mysore for their support and cooperation.

Finally, I would like to express my heartfelt gratitude and honest appreciation to my beloved father (Mr. Nagaraj K.C.), sweetest mother (Mrs. Sharada), my sister, father-in-law, mother-in-law and brother-in-law, whose hands always raised to pray for my success.

At last, but not least, I pay special thanks to my loving wife (Mrs. Sushma S.N) and my sweet daughter (Nidhi) for their patience, cooperation, moral support and constant encouragement throughout my research work.

Prashanth K.N