Acknowledgements

I wish to express my deep sense of gratitude and sincere appreciations to my research guide, Prof. R. V. Anavekar, Professor and Chairman, Department of Physics, Bangalore University, Bangalore for the constant encouragement guidance and critics with moral support. Without his continuous motivation and close co-operation, this would not have resulted in the same manner as it is now. I am greatly indebted to him not only for his valuable guidance but also for his personal care towards me. He has given me wide exposure to the scientific community, which greatly helped me for not only to complete my work but also to understand the subject in depth through the useful discussions.

I would also like to express my gratitude to Prof. M. C. Radhakrishna, Prof. Ramani and Prof. B.A. Kagali, former Chairpersons of the Physics Department. I wish to record my thanks to Prof. Sharath Ananth Murthy and Prof. Ramakrishna Damle for encouragement. I also thank all the faculty members of the Department for their valuable suggestions at the time of preparedness colloquium.

My special thanks to Dr. B. Eraih and Dr. Basavaraj Angadi for their good helping nature in all aspects. Thanks and appreciations are also extended to all Lab Assistants and Office Staff of the Department for their support during my stay in the Department.
My deepest gratitude to Dr. C. Narayana Reddy, Dr. K. C. Radha, Dr. Veerana Gowda, Mr. R. S. Muralidhara who were my senior research colleagues, for their valuable advice and contributions throughout my research work. I thank the authorities of Dept. of Physics, I.I.Sc, Banagalore for helping me to take up the characterization of our samples such as XRD and ESR. I also thank Mr. Raghavendra K, NAL, Bangalore for helping me to get SEM images.

I express my sincere gratitude to Prof. B. S. Krishnamurthy, Former Chairman, Department of Physics, Gulbarga University, Gulbarga for guiding and encouraging me to continue the research work.

I take this opportunity to thank my fellow research scholars from this Department: Dr. K. T. Sathyjith, Dr. Raghu, Dr. Madhu, Dinesh, Prashanth, Harish V, Shivaprasad N. G, Ashok, Shashidhar, Chandrashekar, Kiran K. S, Praveen, Yogesh, Prof. Shigihalli, R. Rajaramakrishna R, Satish M, Venugopal, Lakshimakantha R, Shiddaling Mattepanavar and others for their timely help and encouragement throughout my stay in the campus.

I am highly indebted to the Principals and ex-colleagues of SJR College, AMC Engineering College, BNM Institute of Technology, Special thanks to my presently working college Principals and colleagues of GFGC, Hitnal and GFGC, Magadi for their kind support and encouragement.
The sacrifice of my parents Sri. Y. Rudrappa and Smt. Parvathamma, great concern, understanding and moral support of my beloved wife Smt. Prema, Lovely company of my sons Kushal and Tanush, constant support of my younger brother Sri. Y. Ramesh and sister-in-law Smt. Anuradha Ramesh, elder sister Smt. Y. Suvarna and brother-in-law Sri. D. Onkareshwar, love and affection of Nandushri, Chiranth, Anwita and Adithy are really unforgettable and worth recalling at this junction.

Finally, I thank each one who has directly or indirectly become the reasons for me in making my dream come true.

Y. Shivaprabhakar