ACKNOWLEDGEMENTS

I deeply indebted to Prof. N. Veeraiah, for kindly suggesting the problem, and for his inspiring guidance, constant encouragement and affectionate care throughout the progress of this research work, without whose help this work could not have taken this shape.

I express my heart felt thanks to my senior scholars, now the faculty members of the Physics Department, Dr. V. Ravi Kumar and Dr. G. Naga Raju.

I am highly grateful to Sri N. Narsi Reddy, Principal, Sri N. Satyanarayana Reddy, Correspondent, Vikas Educational Institutions, Vissannapet, for their invaluable help and encouragement through out the course of this work.

I express my sincere thanks to Mr. D. Krishna Rao, University of Hyderabad, who facilitate to take the ESR, IR, optical absorption and photoluminescence measurements. I am indebted a lot to Mr. N. Venkatramaiah of Pondicherry University for his help in recording the X-ray diffraction and SEM photographs for the samples used in the present work.

I owe a lot to Prof. G. Ramana Rao, Dr. B.V. Rami Reddy, J.K. Ojha of Kakatiya University and Dr. T.V. Appa Rao, P. Syam Prasad of National Institute of Technology, Warangal for their encouragement and moral support.
I also express my deep sense of gratitude to my co-scholars and friends of the Department, Sri Y. Gandhi, Dr. M. Srinivasa Reddy, Dr. S.V.G.V.A. Prasad, Dr. N. Krishna Mohan, Dr. G. Murali Krishna, Dr. K. Sambasiva Rao, Dr. G. S. Baskaran, Dr. G. Little Flower, Dr. A. V. Rao, M.V.N. Padma Rao, P. Venkateswara Rao, K.S.V. Sudhakar, A. Padhmanabham, G. Nagarjuna, N. Srinivasa Rao, M. Nagarjuna, M.V. Ramu, T. Satyanarayna, Y. Saritha, P. Naresh, Ch. Murali, B. Sudheer and P. Raghava for their cooperation and help.

I thank all of my friends N. Narasimha Rao, L. Pulla Rao, R. Uday Bhaskar and to my well wishers L. Nagendra Rao, L. Krishna Kumari, N. Ram Babu, N. Padhma, B. Pulla Rao, B. Sujatha and L. Janaki Ramulu, for their encouragement.

I articulate heartfelt thanks to my Parents Sri L. Seetha Ramulu and Smt. L. Laxmi Bai for their blessings. I am also thankful to my wife L. Sravani and to my daughter L. Prabhatha Sindhu, for cooperation and support extended during the course of this work.

I wholeheartedly thank Mrs. Veeraiah, Chandu, family members of my Research Director, who provided me the conducive atmosphere to dedicate myself to research.

L. Srinivasa Rao