ACKNOWLEDGEMENTS

I am absolutely indebted to my guide Dr. K. Y. Rajpure for his most competent and foreseeing academic guidance coupled with incessant encouragement during every phase of this work. The tremendous effort and involvement that went into each of the drafts is greatly appreciated.

I would like sincere appreciation and thanks to Prof. C.H. Bhosale and Prof. B.K. Chougule for his excellent advice, invaluable discussion, and the time and effort they invested in helping carrying out thesis.

I am highly grateful to Prof. A.V. Rao, Head, Department of Physics, Shivaji University, Kolhapur for making me available the laboratory facilities.

I extend my sincere thanks to the entire faculty as well as the administrative staff of the Physics department for their co-operation. I am grateful to all my research colleagues Dr. A.V. Moholkar, Dr. S.M. Pawar, Dr. R.R. Sawant, Dr. P.S. Shinde, Mr. S. P. Yadav, Mr. C.A. Pawar, Mr. R.J. Deokate, Mr. S.S. Shinde, Mr. A.R. Babar, Mr. R.C. Kamble, Mr. K.P. Shinde and all research scholars of the physics department for their constant encouragement and valuable suggestions during the research work. I would also like to extend my thanks to all my friends and all my juniors who helped me with all possible ways during my work.

I express special thanks to technical staff of USIC and CFC Departments, Shivaji University, Kolhapur for providing the fabrication and characterization facilities.

Finally, I express my deep sense of love to the members of my family for their understanding, patience, moral support and encouragement without whom, my work would not have seen the light of the day.

better if you sign.

Place: Kolhapur Date: 29/6/09

Mr. Vijay S. Sawant