

Acknowledgement

*It is a great pleasure for me to express my deep sense of indebtedness and heartfelt gratitude to my guide **Dr. Biswajit S. Chakarabarty**, Head, Department of Applied Physics, Faculty of Technology and Engineering, The M. S. University of Baroda. His enlightened approach, keen interest and constant encouragement made it possible for me to complete this work. Words are not enough to express my gratitude towards him.*

*I am very much thankful to **Prof. Arun Pratap**, Dean, Faculty of Technology and Engineering, The M. S. University of Baroda, for providing me all the facilities for my experimental research work and valuable guidance as and when required with warm feelings.*

I am also thankful to Dr. Avani Umatt, Dr. Ashwin Prajapati, Dr. Navin Acharya, Dr. Arun Anand, Dr. N. D. Chavda, Dr. Limbachiya, Dr. Jignesh Pandya, Dr. Kirit Lad and Dr. Vandana Rao, for their kind and generous co-operation and inspiration during the research work.

At this stage, I cannot forget my colleagues Dr. Johnson Kuruvilla, Dr. Laxmi J. Tomar and Dr. Harshal N. Deota for their support and help during this work. I wish to thank from the bottom of my heart my dear friends and colleagues, Ms. Kavita Kolte, Avani, Shivangi, Hitesh, Gunjan, Vismay, Nakul, Chaitanya, Rahul, Dhaval, Piyush, Sonal, Supriya, Priyanka, Nimit and Kevil for their moral support and help during this work.

I wish to record my wholehearted thanks to Dr. J. R. Shukla, Mr. S. B. Patel, Mr. A. G. Baria, Dr. N. A. Gohel and Dr. L. M. Raj from Shri C. N. P. F. Arts and D. N. Science College, Dabhoi for their kind help whenever I required.

I express my deep gratitude and appreciation for all the non-teaching staff members of Applied Physics Department for their kind support and co-operation during my research work.

I would like to acknowledge UGC – New Delhi for sponsoring RFSMS fellowship.

I am much more grateful to my parents. Without their blessings, I cannot achieve this academic milestone and reach up to my ambitions. Their goodwill and inspiration far exceed what the words of appreciation can express.

It will be unfair if I forget to mention my wife Abha Chauhan and my little angel Tanishka Chauhan who have remained with me in difficult moments. Thank you so much for being with me in all situations.

I am also thankful to Rajendra Chauhan and Harsha Chauhan for their kind and generous co-operation and inspiration and valuable support during the research work.

I am also thankful to all the persons who supported me directly or indirectly throughout the tenure of this work. Most importantly, at the end, I thank the almighty Supreme soul, whose thought keeps me energetic and enthusiastic at every moment in my life.

Sohan M. Chauhan