

ACKNOWLEDGEMENT

The words cannot express my deep sense of gratitude to my supervisor **Prof. Pradip Kumar Jain**, Department of Electronics Engineering, Indian Institute of Technology (BHU), Varanasi, for his excellent guidance, inspiration, valuable suggestions, and support during the completion of the research work. I would never be able to forget his affectionate behavior towards me. I am incredibly thankful to my Co-supervisor, **Dr. Somak Bhattacharyya**, Department of Electronics Engineering, for his priceless guidance, discussions, encouragements, and facilitating all experimental requirements during the research.

I would like to thank Prof. V.N. Mishra, Head, Department of Electronics Engineering, IIT (BHU), Varanasi, for providing all the necessary facilities for my research work. I am indebted to my Research Program Committee members Dr. M. Thottappan and Prof. R. Mahanti, for their valuable advice towards my research work. My sincere thanks to Prof. S. P. Singh and Dr. Sanjeev Sharma of our Department to provide me an open platform for technical discussion. I wish to extend my gratitude to all revered teachers of the Electronics Engineering Department for their help in some way or the other.

I want to express my special thanks to Dr. Madan Singh Chauhan, Dr. Gargi Dixit, Dr. Amit Arora, Dr. Swati, Dr. Manpura Mahto, Mr. Siva V. Rao, Dr. Rajan Agrahari, Dr. Akhilendra Singh, Dr. Vikram Kumar, Mr. Anshu Sharan Singh, Dr. Naresh K. Pilli, Dr. Bhagirath Sahu and Dr. Mayank Agrawal for their valuable assistance at my early stage of research work.

I am thankful to my colleagues Mr. Prabhakar Tripathi, Mr. Rajanish Kumar Singh, Mr. Arjun Kumar, Mr. Akash, Mr. Mumtaz Ali Ansari, Mr. Prince Kumar Singh, Dr. Rahul Pal, Dr. Aman Sikari, Mr. Deepak Jarwal, Mr. Amit Kumar, Mr. Kamalaksha Baral, Mr. Ashwini Mishra and Mr. Smrity Ratan for their personal and technical support.

I am very much thankful to many research scholars of the CRMT laboratory for providing a stimulating and friendly environment. My thanks go to Mr. Sambit Kumar Ghosh, Mr. Nilotpal, Mr. Diptiranjana Samantaray, Mr. Soumojit Shee, Mr. Shyam Gopal Yadav, Mr. Veerababu, Mr. Gundu Venkatesh, Mr. Nishith, Mr. Priyatesh Jain.

I wish to gratefully acknowledge the Ministry of Human Resource Development, Government of India, for the financial support in the form of teaching assistantship. I also acknowledge Dr. Akhilendra Singh, Aman, Pragati, and Purnendu Mishra from Electronics Engineering, IIT (BHU), for their technical help during my research work.

My thanks and sincere appreciations also go to all staff members of the Department, especially Mr. Gyanji Vishwakarma, Mr. Ajit Kumar, and Mr. Purnawasi for their help during the setup of the anechoic chamber and other assistance; without their kind support, this research work was not possible. I also like to thank the staff of the CRMT laboratory, especially Mr. Rajesh Kumar. Rai, for their kind co-operation.

My most profound appreciation towards my brothers Mr. Pankaj Singh, Dr. Vinay Singh, my wife Ankita, and other family members, for providing their continuous support and encouragement in all the aspects of life. They are the source of strength for me and remain an invaluable asset to me.

Finally, I heartily express my gratitude to my father (Late) Shri Rajendra Singh, whose invisible presence and blessings inspire me to attain this goal. I wish to express my indebtedness to my mother, Smt. Sneh Lata Singh for her unconditional love, extreme patience, and constant support over the years. She provides me the strength and confidence to attain this task.

Date:

(Vineet Singh)