## **ACKNOWLEDGEMENTS**

Foremost, I hearty express my sincerest regards and love for my guardian Shri. Abasahab (Mama Ji) and Smt. Anguri Devi (Mami Ji) for their constant support, and love throughout my life. They provide me the strength and confidence to attain this task.

Besides my guardian, I would like to express my immense gratitude to my supervisor Prof S. Jit and co-supervisor Dr. Bhola Nath Pal for their excellent guidance and motivation. The completion of this research work is indeed an outcome of their constant untiring support, valuable ideas, and suggestions during my research work. The insightful discussions with them always provided me great enthusiasm.

I am grateful to Prof. S. K. Balasubramanian for his kind support, motivation and fruitful discussion. He is always there, when I was entangled in any kind of problem and provided valuable suggestions.

I would like to thank my thesis committee: Prof. V. N. Mishra, Prof. R. Mahanty for their encouragement and insightful comments.

I am grateful to Dr. B. Mukherjee for allowing me to work in his lab and for enlightening me the first glance of research.

I would like to express my deep appreciation to my colleague, lab mate, and group partner Mr. Hemant Kumar who helped me in every phase of the Ph.D. duration.

I would like to express my special thanks to Dr. Mregendra Kumar, Dr. Anirudh Yadav, Dr. Kunal Singh, Dr. Sunny, Mr. Sanjay Kumar, Mr. Gopal Rawat, Mr. Praveen Sahu, and Mr. Chandan Kumar for their valuable assistance from personal to the technical level.

I am indebted to many research scholars for providing a stimulating and fun-filled environment. My thanks go to Mr. Ashutosh Mishra, Mr. Lalit Chandra, Mr. Amit Kumar, Mr. Deepak Kumar, Mr. Ashwini Kumar Mishra, Mr. Smriti Ratan, Mr. Prince Kumar Singh, Mr. Kamalaksha Baral, Mr. Abhishek Singh, Mr. Abhinav Pratap Singh, Mr. Rishibrind Upadhyay, and Mr. Manas Tripathi.

My thanks and sincere appreciations also go to all staff members of CRME Lab, especially to Mr. M. K. Saxena, Mr. Shyam Narayan, Mr. S. C. Yadav, and Mr. Sanjeev Srivastava for their kind co-operation.

My deepest appreciation towards my wife Mrs. Shobhna for her continuous support and patience. She always being a source of strength for me and still remain an invaluable asset to me. I have a deep appreciation for my elder sisters Ms. Durgesh, Ms. Saroj, and my elder brother Mr. Pankaj Sahab for providing enormous moral support to me.

Above all, I thank Lord Vishwanath for providing me strength and courage in completing the work.

Date:	(Yogesh Kumar)
-------	----------------