

ACKNOWLEDGEMENTS

Foremost, I would like to express my immense gratitude to my Ph.D. thesis supervisor Prof. V. N. Mishra for his excellent guidance throughout my research work. The insightful discussions with his always provided me great enthusiasm. I will always be in debt of his cognitive and motivational support given during my stay at IIT (BHU).

Besides my supervisor, I would like to express my sincerest thank to Dr. R. Dwivedi for his continuous support throughout my research work. The completion of this research work is indeed an outcome of his valuable ideas, and suggestions during my research work.

I would like to thank my thesis committee member: Prof. R. R. Das and external expert Prof. K. K. Shukla for their encouragement and insightful comments.

I am grateful to my senior IOFS officer, Mr. Prem Prakash, for his continuous support and encouragement to complete my thesis work.

I am also grateful to Dr. B. Mukherjee for allowing me to work in his lab.

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

I would like to express my special thanks to Dr. Sunny, Dr. Vinod Kumar Chaudhary, Dr. Mregendra Kumar, Dr. Kunal Singh, Dr. Divya Somvanshi, Dr. Purnima Hazra, Mr. Gopal Rawat, Mr. Sanjay Kumar, Ms. Ekta Goel, Mr. Yogesh Kumar and Mr. Hemant Bhatt for their valuable assistance from personal to the technical level.

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

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.

I would also like to extend huge, warm thanks to my neighbourhoods and colleague Mr. Subiman Chatterjee as well as Mr. Gorav Modanwal, who rendered fun-

full support to me. I am indebted to some of my good friends Mr. Sudhir Bhaskar, Mr. Rajan Agrawal, Mr. Anshu Kumar, Mr. Vikram Kumar, and Mr. Akhilendra Pratap singh for their constant encouragement and support.

Finally, I heartily express sincere thanks to my big family for their unconditional love, extreme patience and constant support over the years. They provide me the strength and confidence to attain this task.

Above all, I thank *Lord Mahadev and Lord Sankat-Mochan* for providing me strength and courage in completing the work.

Date:

(Lalit Chandra)