

Acknowledgments

I would like to express my deep sense of gratitude to my thesis supervisor, *Dr. Amit Kumar Mishra*, for supporting me throughout my Ph.D. duration at Indian Institute of Technology Jodhpur. His patience, immense knowledge, and motivation are the major reasons behind my scientific credentials. I am heartily thankful to my laboratory members *Mr. Bharat Pareek, Dr. Deepak Chhangani, Arun Kumar Upadhyay, Ayeman Amanullah* and *Ribhav Mishra* for their help in the lab works and continuous support at every step of my Ph.D. duration.

In my extended gratitude, I, hereby, thankful to our collaborators *Prof. R.N. Sharan* and *Dr. Amit Kumar* for their critical inputs in research work. Sincere thanks to Director, Indian Institute of Technology Jodhpur for administrative support and my Ph.D. committee members *Dr. Meenu Chhabra, Dr. Sushmita Jha* and *Dr. Samanwita Pal* for their critical suggestions and motivation at different stages of my Ph.D. work.

I would like to thank all the staff members of Indian Institute of Technology Jodhpur for their administrative support in my Ph.D. tenure. I express my deep gratitude towards my funding agencies, Council of Scientific and Industrial Research and University Grants Commission (CSIR-UGC) and Ministry of Human Resource Development, for providing me fellowship throughout the Ph.D.

A very special and emotional thank to *my parents, family, Dr. Deepak* and friends *Arun, Divya* and *Ankisha* for their continuous support, motivation and crucial suggestions in this long journey of five years, that I am able to accomplish at Indian Institute of Technology Jodhpur. Last, but most deeply I want to thank *Lord Ganesha* for being with me at every step and I also pray for his support in future.

Vibhuti Joshi
Ph.D. Student

