Acknowledgements

I owe my deepest gratitude to my supervisor, Professor Amit Kumar Mishra who has provided me an opportunity to pursue Ph.D. under his guidance at Indian Institute of Technology Jodhpur. His immense support became the key for success in my research work that I am presenting here. I extend my gratitude to Mr. Bharat Pareek, Ajay Prakash Joshi, Arun Kumar Upadhyay, Ayeman Amanullah, Vibhuti Joshi, Sachin Chinchwadkar, Rahul Sathyababu, Ribhav Mishra and all other laboratory members who have helped me throughout my research work, at various levels.

I, hereby, thank all the scientists and professors who helped me by providing research related materials. I thank my Ph.D. committee for their valuable suggestions at different stages during my Ph.D. work. They have always been encouraging and helpful. I am grateful all the sips at *Sangam Tea* to Patra bhaiya's food, which kept me consistent in my job.

I pay my sincere gratitude to my parents and my sisters for being there all the time, and silently supporting every step of mine, ignoring all the consequences happening to them. I am indebted to Giriraj, Abdul, Jagdish, Suresh, Belal and all my friends for their moral support, suggestions and appreciation that propelled my work towards appropriate direction. Last but not least, I thank Indian Institute of Technology Jodhpur and Ministry of Human Resource Development, Government of India.

> Deepak Kumar Chhangani Ph.D. Student