Acknowledgements

I would like to express my deepest graduate to my supervisor, Professor Rakesh Kumar Sharma for his support, encouragement and patience throughout my PhD study. His careful attention to details, constructive criticisms, trust, freedom, dedication and enthusiasm for research became key factors to reach this point. I am also thankful to Dr. Pragati Sharma and family for their hospitality and love.

I must also thank Dr. Ritu Gupta for her invaluable up-keep and suggestions. I am extremely thankful to Dr. Mahesh Roy and Dr. Mahesh Kumar for their support and suggestions. I am very grateful to my PhD committee for their valuable suggestions at various stages of this work.

I deeply appreciate my parents, sister and brother for their enormous love, sacrifices and encouragement, and for lighting up many times when I was alone and down.

I am very grateful to all my friends and colleagues to make this journey more comfortable with their friendship, love and moral support. I also extend my sincere gratitude to laboratory, technical staff and all other for their help during my thesis work at various points.

Special acknowledge is given to Indian Institute of Technology Jodhpur and Ministry of Human Resource Development, Government of India for facilities and financial support.

Last, but not least, I would like to thank every individual who helped directly or indirectly during my PhD work.

Kiran Prakash Shejale