ACKNOWLEDGEMENT

The documentation of suitable acknowledgements to various persons, who contributed towards the successful completion of my Ph. D. work, is by no means an easy task. Along the way, many people have landed their helping hands and gave me the strength to hang on. Without them, this Ph. D. work would not have seen the light of the day.

I am deeply indebted to my revered thesis supervisor, Dr. (Mrs.) Annu Sharma, Assistant Professor, Department of Physics, Kurukshetra University, Kurukshetra for having privileged me with her careful and patient guidance, and constant, tireless encouragement throughout my research tenure. It would have been impossible for me to complete this thesis without her help and keen interest.

Sincere thanks are offered to Prof. Shyam Kumar, Dean Faculty of Science and former Dean Research and Development, Kurukshetra University, Kurukshetra for his support, blessings and kind help during the course of work.

My deep regards to Prof. R. K. Moudgil (Present Chairman), Prof. S. C. Mishra (former Chairman), Prof. M. S. Yadav (former Chairman) Department of Physics, Kurukshetra University, Kurukshetra for providing me required infrastructure and essential research facilities in our department.

I present my sincere thanks to Prof. Sanjeev Aggarwal, Department of Physics, Kurukshetra University, Kurukshetra for his help, advices and encouragement in the course of my research work. His invaluable suggestions, keen interest on the progress of the work, fruitful discussions and inimitable guidance made me able to reach this stage. I express my gratitude to Prof. Pawan K. Sharma, Department of Chemistry, Kurukshetra University, Kurukshetra for all the help rendered to me for the smooth execution of my experiments. I am grateful for his scientific suggestions and the technical help while running my experiments.

I also acknowledge the assistance rendered by my senior research fellow Dr. Navneet Chandak, Department of Chemistry, Kurukshetra University and my special thanks are given to Dr Neena Jaggi, Professor, National Institute of Technology, Kurukshetra for providing the necessary characterization facilities.
I would like to extend my sincere thanks to all the faculty members of Department of Physics, Kurukshetra University, Dr. Fakir Chand, Dr. Rajesh Kharab, Dr. Suman Mahendia, Dr. Manish Kumar and Dr. Hardev Singh for their help, cooperation and hustle during the tenure of my work.

I am also grateful to Sh. S. K. Kaushik and all the non-teaching staff of Department of Physics, Kurukshetra University for their constant help and support.

I am sincerely thankful to my friends Isha, Meena and Sonal for their love and support and providing me homely environment during my work. Thanks for always being there and bearing with me the good and bad times during Ph.D.

It is my duty to acknowledge the help and sincere advices of my seniors to Dr. Nidhi, Dr. Suman Bahniwal and Dr. Jyoti. This work was impossible without their cooperation and support. I am also grateful to my co-researchers and friends Mahak, Meetika, Ruby, Ambika, Divya, Rajeev for maintaining a cooperative and friendly environment in the department. I thank all the research scholars of Department of Physics, Kurukshetra University for their kind support.

I am greatly thankful to all my colleagues and staff of R.K.S.D. College, Kaithal for their constant motivation and inspiration.

From the core of my heart, I highly appreciate the cooperation, generous help and good wishes provided by my family and relatives. I am greatly indebted to my parents, my brother Gaurav and my sister Vaishali for their affection, encouragement and support throughout my carrier.

I take this opportunity to thanks the Haryana State Council for Science and Technology (HSCST), Panchkula for providing the financial assistance in the form of fellowship.

Finally, Thank God for the wisdom and perseverance that he has been bestowed upon me during this research period, and indeed, throughout my life.

(Alisha)