ACKNOWLEDGEMENTS

Words are often too frail to express one’s inward emotions of ineffable indebtedness. The same perplexity haunts inside me in penning down my sagacious sense of gratitude and admiration towards my venerable guides, Prof. Amrit Pal Toor, Dr SSB University Institute of chemical engineering & Technology, Panjab University, Chandigarh and Prof R.K.Wanchoo, Dr. SS Bhatnagar University Institute of chemical engineering & Technology, Panjab University, Chandigarh for their constant interest and guidance. Their inspiring and adroit guidance, constructive and intelligent criticism infused in me the spirit of dedicated hard work.

I am grateful to Prof. R.K.Wanchoo (former Director) and Prof. Meenakshi Goyal presently Director, Energy Research Centre, Panjab University, Chandigarh for providing the essential laboratory and research facilities. Thanks are also being acknowledged to Prof R. K. Chhabra, Chairperson, Dr. SS Bhatnagar University Institute of chemical Engineering and Technology for his cooperation.

I am extremely grateful to the celebrated authors whose precious works have been freely consulted and referred in my thesis work. I would like to express my thanks to the laboratory and technical staff, Mr. Tuls Ram, Mr. Prithviraj Raj and Mr. Anil Kumar for their help and assistance. I wish to express my sincere gratitude to Dr. Poonam Sharma, and the whole staff of Energy Research Centre. I am highly thankful to my most cherished and treasured friends and lab mates Taranjeet Kaur, Abhishek Sraw, Rajiv Arora, Sonia and Kamal preet kaur for their help and kind support.

I offer my sincere gratitude to Prof Amrit Pal Toor, Professor Dr. SS Bhatnagar UICET for her worthy advice and guidance during my research. I am grateful to her for offering her hands for supporting me out always in my critical situations during these years with her intelligence, belongingness, love and care.

It is difficult to pen down my deepest feelings of indebtedness towards my parents who have blessed me to be what I am today. I can never ever measure but always treasure their bounteous support, selfless love and silent sacrifice at various stages of my life. I am also grateful to my loving brothers and bhabhi. I am grateful to my wonderful in-laws family, especially my father in law and dadi ma who have always showed their love and affection towards me and shared my responsibilities during the tough and good times with all possible support.
My acknowledgement will be all meaningless without appreciating the most important person in my life, my better half, Abhishek Sharma for his love, great perseverance and emotional support which motivated me all along my journey towards research. I am indebted to him as he sacrificed the moments of togetherness for my research career.

I am grateful to University Grant Commission, India, for granting me the research fellowship and financial support for the research work.

Finally, I thank Panjab University, Chandigarh for giving me the lap to grow as a researcher and to shape this thesis for my career.

Last but not the least, I bow my head before the almighty God for showing me the path to knowledge and wisdom and also for enlightening my soul and body in my tough phases during this journey.

Date: 21/8/2013

Maira Sharma