I take this opportunity to express my deep sense of gratitude to my guides Prof. R.C. Katyal, University Institute of Chemical Engineering & Technology, Panjab University, Chandigarh and Prof. Ram Prasad, Department of Chemical Engineering, Institute of Technology, Banaras Hindu University, Varanasi for their persistent and invaluable guidance, vigilant and enthusiastic supervision during the entire span of experimental work, planning as well as preparation of the thesis work. Throughout the course of research period, they provided encouragement, sound advice and valuable ideas.

I am thankful to Prof. R.K. Chhabra, Chairperson, University Institute of Chemical Engineering & Technology, Panjab University, Chandigarh for providing all the necessary facilities in the institute and for his whole hearted encouragement and support.

In equal measure, I tender my sincere thanks to all the faculty members of University Institute of Chemical Engineering & Technology, Panjab University, Chandigarh for their intellectual pursuits, cooperation and encouragement during the course of the work.

I am thankful to Head of Department, Department of Applied Chemistry and Polymer Technology, Delhi Technological University (formerly Delhi College of Engineering) for providing all the necessary facilities in the institute.

I am also thankful to Chairman, Department of Chemical Engineering & Technology, Institute of Technology, Banaras Hindu University, Varanasi for permitting me to carry my research work.

My sincere thanks are due to Technical Staff of Panjab University, Chandigarh, Banaras Hindu University, Varanasi and Delhi College of Engineering for helping in proving the technical support in conducting various analysis.
I want to acknowledge in particular Mr. Tulsi Ram, Mr. Vinay Kaushal, Mr. Manu Ram and every non-teaching staff of University Institute of Chemical Engineering & Technology, Panjab University, Chandigarh who have helped me immensely at every moment.

I am indebted to my parents and other members of the family for all the support and encouragement during the course of the work.

Finally, I would like to thank my friends for their help and cooperation to make this report in the present form.

I also owe to “The God Almighty”, whose kindness and grace gave me the strength to complete this task.

(Gaurav Rattan)

(Gaurav Rattan)