ACKNOWLEDGEMENT

An endeavour in any field needs inspiration, guidance and moral support at every step. So, I must preface my thesis by expressing sincere and deep gratitude to those who made possible for me to complete my research work.

I devote all my achievements to “Almighty” for instilling in me strength, perseverance, and spirit needed to accomplish my work.

Words are not adequate at my disposal to convey my heartiest thanks to Dr. Sukhprit Singh, Professor, Department of Chemistry, Guru Nanak Dev University, Amritsar, for his helping attitude, expert advices, keen interest, enthusiastic approach, constant encouragement and invaluable guidance throughout the conduct of this research work. I consider it as my fortune to work with him. I am highly obliged to Dr. Gurcharan Kaur, Department of Biotechnology, Guru Nanak Dev University, Amritsar, for extending support for biological studies.

I wish to convey my thanks to various Heads of the department (Dr. I. Ahmad, Dr. S. Kumar and Dr. B. S. Randhawa) during my tenure for providing necessary laboratory facilities for accomplishment of this work. I am also thankful to our librarians and other technical and non teaching staff for their co-operative and healthy attitude and valuable assistance.

I pay my sublime obeisance to my esteemed parents, the engineers of my wisdom, my pillar of support and my source of inspiration. The love, affection and continuous encouragement of my family acted as a premium to my achievement is not to be acknowledged but need to be kept in recesses of my heart.

Special thanks to all my labmates for their affection and co-operation which uplifted me to work hard. Finally I would like to thank the CSIR, Guru Nanak Dev University and DST for fellowship and grants and Department of Chemistry, Guru Nanak Dev University, Amritsar for the work environment.

Avinash Bhadani