Acknowledgements

I would like to express my profound pleasure to acknowledge my obligation, sincere gratefulness, deep sense of gratitude to those who encouraged and supported me throughout this odyssey.

First of all, it gives me immense pleasure to put on record my indebtedness and utmost gratitude to my esteemed supervisor, Dr. Nareshpal Singh Saini, Professor, Department of Physics, Guru Nanak Dev University, Amritsar, Punjab. Working under a personage of striking insight, critical wisdom, sagacious suggestions, undeviated patience and perpetual encouragement that I have been perceiving to augment the research work was indeed a matter of pride for me.

I owe my sincere regards to Dr. R. C. Singh, Head, Department of Physics, Guru Nanak Dev University, Amritsar for providing full co-operation at the time of need. I am thankful to library staff and all faculty members specifically Dr. T. S. Gill and Dr. Bindiya Arora for their unconditional help to augment the research work.

I bestow my privilege to gratefully acknowledge Dr. A. P. Misra, Department of Mathematics, Visva-Bharati University, Santiniketan, West Bengal for his valuable suggestions and help in last few months.

I must express my thanks to plasma group members Dr. A. S. Bains, Dr. Chanchal Bedi, B. S. Chahal, Ripin Kohli, Barjinder Kaur, Nimardeep Kaur, Manpreet Singh, Papihra Sethi and Yashika Ghai for their ever willing co-operation and moral support.

I acknowledge my friend Nisha Sharma for her valuable feedback and encouragement during all these years.

The financial support provided by University Grant Commission under Rajiv Gandhi Fellowship is thankfully acknowledged.

I do not have words enough to honor my dear parents for their constant encouragement, blessings and moral support throughout the life and without whom it would not have been possible to carry out this research work. My thanks are also due to my sister Minakshi and brother Gaurav Kumar for their blessings and encouragement bestowed upon me.

I acknowledge my husband Sukhwinder Singh for his co-operation and patience at all times.

Last but not the least, I owe my reverence to Almighty by the grace of whom it has been possible for me to complete my research work successfully.

Shalini