Acknowledgement

First and foremost, I would like to sincerely thank my research advisor **Prof. Prafulla Kumar Jha**. I consider myself lucky and special to work with him. Besides giving me a wonderful opportunity to start my research career, he also trained me how to work in a group as well as become an independent researcher. I am greatly indebted for his support, trust and encouragement. His guidance is priceless. He helped me to discover myself and my hidden potential. And I can definitely say that only he has the ability to make me what I am today as I saw my development during the Ph.D. journey.

I also thank **Prof. S. P. Sanyal**, Ex Dean, Faculty of science, Department of physics Barkatullah University of Bhopal. I acknowledge him for his belief in me that I can do some good work in my Ph.D. from the time of my M.Sc.

I extend my thanks to **Mrs. Sunita Jha** for the motivation and encouragement. I always found the conversation with her make me positively charged.

I would also like to thank **Dr. Sharad Chandra Tripathi** for his encouragement. I also thank to **Mr. Ashwini Kanoujia** for inspiring me and to make me thought "if you are ready to do hard work nothing will stop you". I also want to acknowledge to other teaching and non-teaching staff in our physics department at The Maharaja Sayajirao University who has ever helped me.

The atmosphere in our '*CMMPLAB*' group helps a lot to understand the complex problems in easy way. I specially want to acknowledge all my seniors **Dr. Satyam Shinde, Dr. Shree Mishra, Dr. Nikita Shah, Dr. Himadri Soni, Dr. Venu Mankad**, **Dr. Sanjay Gupta, Dr. Shweta D. Dabhi and Nidhi Astik** for always being there as senior, motivator as well as good friends.

I am thankful to my lab-mates Deepak Upadhyay, Vaishali Sharma, Hardik Kagdada Bhumi Baraiya, Sharad Pillai, Narayan Som, Trupti Gajaria, Anjali Patel, Darshil, Madhavi, Khushboo, Raghottam and Sharan for their constant support. I acknowledge them for creating live atmosphere at Vadodara especially during the writing time of thesis.

I appreciate the support of my family members and friends for their understanding and unconditional support. At last but the most important persons in my life are *my parents*. With sincere regards, I am grateful to them for their enthusiastic encouragement, blessings and affection for me and also to understand me for not calling them on regular basis. Ending with most important my Guru "Babu and Baba" Maharaj for their constant shower of blessings on me.

Date: 19/03/2019 Place: Vadodara

(Basant Roondhe)