Acknowledgement

I express my sincere gratitude and indebtedness to my research supervisor *Dr. Praveen Chandra Pandey*, Department of Physics, Indian Institute of Technology (Banaras Hindu University) for his valuable guidance, encouragement and help throughout the tenure of this research work. I am extremely grateful to him for his keen interest in the investigation and the academic help. In course of time, he motivated, inspired and extended the necessary academic help in carrying out my research work. In spite of his busy schedule, he participated in each minute details of my progress of work and shared my pleasures and anxieties as well on the research findings.

I am grateful to my RPEC members *Prof. O. N. Singh*, Department of Physics and *Dr. Chandan Upadhyay*, School of Materials Science and Technology, Indian Institute of Technology (Banaras Hindu University) for their guidance. In the entire research tenure, their valuable discussions and encouragement helped this journey to a fruitful end.

I am immensely rejoiced to owe my deep sense of gratitude to Prof. B. N. Dwivedi, Prof. S. Chatterji, Prof. P. Singh, Prof. R. Prasad, Dr. S. Upadhyay and Dr. A. Mohan for their constant encouragement during research work. I am thankful to Prof. D. Giri, Head, Department of Physics, for providing me all the facilities during my research work.

I am thankful to all non-teaching staff members of the Department of Physics for their kind cooperation and inspiration. I wish to express my deep gratitude to all those who have extended their helping hands in various ways during my tenure at Indian Institute of Technology (Banaras Hindu University), Varanasi, India.

In the last but not least I am very thankful to my friends- Md Jawed, Harshad Birajdar, Achyutesh Dixit, Prince Gupta, Upendra Kumar, Pawan Kumar, Bipin K. Singh for providing company during the Phd research work.

Date: 11/03/2017 Place: Varanasi

Subhashish Tiwari