ACKNOWLEDGEMENT

It is a matter of great privilege for me to acknowledge my sincere gratitude and indebtedness to my modest, gracious, eminent teacher and supervisor Dr. N. S. Negi, Reader, Department of Physics, H.P. University, Shimla for his keen interest, reasoned guidance, constant encouragement, stimulating discussion, enthusiastic involvement, constructive criticism and appreciation during the work, which hopefully I have inherited, has left an indelible impression in my mind and soul.

I am thankful to Dr. R. K. Kotnala, Scientist "F" National Physical Laboratory, New Delhi, India for providing research facilities, valuable guidance and moral support during the period of my research work. I also extend thanks to Vivek, Jyoti, V. Pandey and Mohan for helping me during lab work.

I am grateful to the Chairman Dr. M. Singh, Department of Physics, H. P. University, Shimla for providing necessary facilities during my research work. I am also thankful to Dr. Nagesh Thakur, Dr. V. S. Rangra and Dr. S. K. Dhiman, Readers, Department of Physics, H. P. University, Shimla for their guidance and moral support during this course.

I am thankful to Dr. S. S. Bhatt, Reader, Department of Chemistry, H. P. University, Shimla for his valuable help in carrying out FTIR measurements and providing moral guidance to me.

I am thankful to Sh. Jagtar Singh (Sr. technician), and Sh Denesh Sharma and Mahinder, SAIF/CIL Laboratory, Punjab University, Chandigarh for XRD, TEM and SEM measurements.

I acknowledge my sincere thanks for the cooperation received from Dr. Vinay Gupta (Reader), Prof. R. P. Tandon, Sh. P. K. Bora (Sr. tech.) and Priyank Gautam (PhD scholar), Department of Physics and Astrophysics, University of Delhi, Delhi, India for AFM, ferroelectric, film thickness and optical measurements.

Words are inadequate to reflect the extent of my feeling to all my friends Desh Raj, Akash Deep, Ashwani, K. Singh, Surinder, Ghanshyam, Kameshwar, Mainika, Sunil, Gagan, Ajay, Mast Ram, Pawan, Jagdish, K. Sen, Anshu, Amit, Yachana, Pankaj Sharma (Lecturer in JUPT Waknaghat, Solan), R. K. Verma and Parikshit Sharma for their continued involvement during this work. I am failing in my duty if not concede my earnest thanks to the Laboratory, Library and non-teaching faculty Sh. Pyare Lal, Sh. Shivo Ram, Sh. K.D. Dhiman, Sh. Bhagi Rath, Sh. Krishan Singh for providing me necessary facilities.

From the interim of my heart I am grateful to my parents, Grand Father, Sisters, Brother in law who have always me a driving force behind all my achievements and whose sheer affection nurtured deep spirit throughout the work will ever remain to be worshipped.

Kuldeep Chand 2013