## ACKNOWLEDGEMENT

I am greatly indebted and wish to express my sincere thanks to my Research Guide, **Dr. M.B. Dongare**, Reader, Department of Physics, Shivaji University, Kolhapur, for proposing the topic of the Dissertation work and for his continual guidance throughout the period of study and research.

I am grateful to **Dr. K.L. Narayana**, Professor and Head of the Department of Physics, Shivaji University, Kolhapur, for encouragement and making available all possible facilities in the Department.

I also grateful to **Dr. R.N. Patil**, Professor, Department of Physics, Shivaji University, Kolhapur, for his valuable discussion for my present work. I extend my sincere thanks to **Dr. M.K. Soudagar**, Reader, Department of Physics, Shivaji University, Kolhapur, for his invaluable suggestions and keen interest in the present work.

I am thankful to U.G.C. for the award of Teacher Fellowship. I am very much grateful to the Board of Management of Rayat Shikshan Sanstha, Satara and Principal Dr. S.D. Jadhav, Former Principal N.N. Bhagare, Dahivadi College, Dahivadi, Dist. Satara for granting me the necessary study leave without which this work would not have been possible.

I am very much grateful to **Dr. Satish Lotake** and **P.N. Kamble**, who are kind enough in extending their helping hands whole-heartedly. I must frankly admit here that I had to rely on them many a time. They assisted me at every step. This is the occassion for me to record here, the debt I owe to them. **B.R. Kamble**, **J.P. Kharat**, **T.N. Lokhande**, **S.B. Jadhav** and **B.D. Mane** deserve special thanks for their help and encouragement.

I also feel grateful to Shivaji University authorities for providing facilities to work in the Physics Department. I would like to extend my thanks to the Teaching and Non-teaching Staff of the Department of Physics, especially, P.D. Malekar, S.K. Mane, A.N. Upadhye and Miss. R.S. Velhal for their kind co-operation.

I take this apportunity to extend my thanks to my colleagues in particular to C.J. Khilare, A.B. Kamble, S.P. Khunte, N.A. Ghanwat, T.C. Pawar, J.D. Desai, Dr. H.D. Thorat, A.N. Chavan, Vijaykumar Ghadage and A.G. Rokade, of Dahivadi College, Dahivadi for providing the harmonious atmosphere which is of the most necessity for being creative.

I am grateful in particular to P.R. Patil, A.M. Mahajan, R.P. Mahajan, Satish Choudhary, H.R. Kulkarni, B.S. Harale, Vinayak Dongare, P.V. Patil, N.D. Choudhari, N.K. Lokare, L.D. Naiknaware, R.S. Nimbalkar, B.L. Chavan, Kailas Patil, U.N. Kulkarni, B.T. Jadhav and J.L. Bhosale, for their kind co-operation.

Last, but not least, I am obliged to my family, no words are enough to express my hartiest gratitudes in particular to

my elder brothers Bhagawat, Madhukar and Sudhakar due to whose constant encouragement and inspiration, this dissertation have seen the light of the day.

Finally, I thank Satish Anekar for neat and accurate typing, Mrs. M.C. More, Shri Datta-Sai Xerox Centre, for quality xerox, S.K. Sutar for photography and P.V. Ravan for tracing work.

PLACE : KOLHAPUR.

DATE : 2nd June, 1914

{ RAMESH N. THOKALE }