ACKNOWLEDGEMENTS

I take this opportunity to express my deep sense of appreciation and sincere thanks to Dr. L. P. Deshmukh, my advisor and renowned researcher, Reader in Physics (Appl. Electronics), Shivaji University Centre for P. G. Studies, Solapur, Fellow, Semiconductor Society of India, Fellow, Society for Advancement of Electrochemical Science and Technology, Member, Institution of Electronics and Telecommunication Engineers, Fellow, Indian National Science Academy (INSA - Award 1997-98); for his scholastic guidance, constant encouragement and spontaneous help throughout the progress of these investigations. I find in him a real researcher who, through his own example, inspired me with devotion towards a common goal.

It will be my failure in duty if I do not acknowledge Dr. G. S. Shahane and Mr. D. S. Sutrave for their active help and encouragements received during the phase work of this dissertation.

The suggestions and blessings of **Prof. S. H. Pawar**, Head, Department of Physics, Shivaji Uninversity, Kolhapur, are highly acknowledged.

I am very much thankful to **Prof. P. B. Joshi**, Head, Department of Physics, **Dr. S. S. Suryavanshi** and the staff of the department for their moral support.

I am thankful to my research colleagues Mr C. B. Rotti, Mr. R. N. Mulik and Mr. V. B. Patil for their moral support, and generating the healthy atmosphere throughout these days.

I am grateful to Shri. M. B. Patil (M. P.), General Secretary of B. L. D. E. Association, Principal, Prof. K. S. Biradar, S. B. Arts and K. C. P. Science College,

Bijapur, Shri S. B. Pattadkal, Head, Department of Physics and my colleagues for

their kind permission and moral support throughout these days.

The timely help for providing the sophisticated instrumentation facilities by

The Director, R. S. I. C. Nagpur, and The Head, USIC, Shivaji University, Kolhapur,

are highly acknowledged.

I will remember forever my brother Shri. Suresh N. Chougule (JTO) for his

moral support and alleviating my household responsibilities.

My deepest appreciation are reserved for my wife, Sou. Indumati, children

Snehal, Sheetal and Ajit and my family members Sou. Roopa, Megha, who have

shared my feelings during the course of these investigations.

I trust that I have made due & full acknowledgements and apologise for any

accidental omissions.

Place: Solapur

Date: Dec.30 1998