ACKNOWLEDGEMENTS |

This work would not have been possible without constant encouragement and inspiring guidance provided by my research guide Professor S.H. Pawar, Head of the Physics Department, Shivaji University, Kolhapur. To him I offer my deep gratitude and sincere thanks.

I consider it my soleman duty to thank Principal P.B. Chavan, Shikshan Maharshi Dr. Bapuji Salunkhe College, Miraj for his encouragement and inspiration during the period of my work. The author is greatful to the members of Energy Studies Group, P.D. Pawar, L.D. Naiknaware, M.J. Ubale, S.B. Kulkarni, T.S. Desai, B.L. Chavan, P.N. Pawaskar and B.P.Relekar for their useful discussion and experimental assistance.

I would like to thank University Grant Commission, New Delhi for award of Teacher Fellowship.

I am indebted to my parents without whose love and support this dissertation would not have seen the light of the day. Finally, I express my deep sense of gratitude to my wife Sou. Vijaya Bhosale and Son Jayant and Anant.

The expert and neat typing of the manuscript by Mr. Satish Anekar is thankfully acknowledged.

T.R. Bhosale