

## ACKNOWLEDGEMENT

I gratefully acknowledge my indebtedness and offer sincere thanks to God Almighty who gave me the wisdom, courage and hope to carry out my work successfully. I am thankful to my philosopher and research supervisor **Dr. J. Venkatesan** for providing me with necessary guidance and support. His kindness, gentle attitude, caring for the students has helped me to pursue my research with real zeal.

I am grateful to **Dr. A. Venkatesan**, Dr. K. Padmanabhan and Dr. N. Nallusamy for their guidance and continuous support. I wish to express my sincere thanks to my doctoral committee members for their valuable suggestions. I must thank **Dr. K. Pitchandi**, Professor and Head, Department of Mechanical Engineering for his critical reviews during my research work and directing the work in the correct path.

I gratefully acknowledge the contributions from Prof. T. S. Prasanna Kumar, Dr. K. Jayabal, Dr. N. Kulasekaran and Mr. T. R. Parthasarathy. The author also wishes to thank Management, Secretary and Principal of Sri Venkateswara College of Engineering for their support and indulgence shown towards me to complete my research work successfully.

Finally, I whole heartedly thank my beloved parents and support of my sisters. I must record my sincere thanks to my dear wife **Mrs. Radha** and my cherished sons **Pranav** and **Dhaarun** for their sacrifice, constant prayer and moral support, which they gave me over the years, without which this thesis would not have been possible.

**MOHANDASS M**