ACKNOWLEDGEMENTS

It is beyond my capacity to express deep sense of gratitude to my beloved and respected Supervisor Dr. Sriram Venkatesh, Professor & Head, Department of Mechanical Engineering, University college of Engineering, Osmania University for his deep involvement, keen interest, valuable guidance and the support extended throughout the period of this work. In spite of his busy schedules in both academics and administrations, he spared valuable time and evinced keen interest and personal care at every stage of my research work.

I will always remember my beloved guru Late Dr. B. Siva Prasad Reddy, Former Professor & Head, Department of Mechanical Engineering, Kakatiya Institute of Technology & Science, Warangal as a great source of inspiration and it gives me an immense pleasure to express my sincere thanks to him. I would not have been completed this work without his contribution.

I express my gratitude and heartfelt thanks to Dr. K. Gururaj, Professor and Head, Department of Mechanical Engineering, Kakatiya Institute of Technology & Science, Warangal for his keen interest and encouragement given during this work.

I express my gratitude and heartfelt thanks to Chairman, Board of studies and the members of the DRC for giving directions and suitable suggestions during the course of this study.

I profusely thank Dean, Faculty of Engineering, Osmania University for the extension of time given for submission of the thesis and extending every possible help during the course of this study.

I express my sincere thanks to the Management and Principal of Kakatiya Institute of Technology & Science, Warangal for their constant encouragement and kindly permitting me to carryout research work at Osmania University.
My special thanks to Dr. L. Siva Rama Krishna, Associate Professor, Dept.of Mechanical Engineering University college of Engineering, Osmania University for his valuable suggestions during the work.

I wish to thank my wife Smt. Kavitha Rani and my beloved sons, Krishna Yashaswy and Abhitej, for sacrificing many precious hours, which rightfully belonged to them.

I wish to record my deep sense of gratitude to Mr. Bhaskar Pininti, Software Engineer, Hyderabad as I am greatly benefited by his interaction during the programming and valuable suggestions about the usage of VC++ for my work.

Thank to all my friends specially Dr. N. Shyam Kumar, Dr. V.Vinod Kumar, and S.Ramesh for their constant support and encouragement throughout this work.

Finally, I thank everyone who contributed either directly or indirectly in successful completion of this research work.

Balaraju Gaddameedi