

ACKNOWLEDGEMENT

I would like to express my profound gratitude to my research guide Dr. P. Prabhakaran, professor, Department of Mechanical Engineering, Faculty of Technology and Engineering – The Maharaja Sayajirao University of Baroda, Vadodara, for his total involvement in the research programme. Professor Prabhakaran, is a visionary personality and a thorough gentleman. He has been most generous with his valuable advice, guidance and thought provoking constructive criticism. His painstaking efforts in meticulously going through the whole thing, his insistence on clarity and continuity of thought helped me in presenting the thesis in its present form.

I am deeply indebted to Prof. A. N. Misra, Dean, Faculty of Technology and Engineering, The M. S. University of Baroda. Also, my gratitude to Prof. B. S. Parekh Prof. S. H. Mishra and Prof. Baba Pai, former Deans, Faculty of Technology and Engineering, The M. S. University of Baroda, Vadodara for extending their cooperation during the course of this study.

I acknowledge sincerely all the help and moral support received from Shri. G. D. Karhadkar, Head (I/C), Mechanical Engineering Department.

I would like to express my thanks to Mr. Akash B. Pandey (Assistant professor), Mechanical Engineering Department, Bhargav, Namratha. A and S. Bhat. for their value added assistance during the period of research programme.

My sincere thanks to the Management, the Principal and the HOD of Mechanical Engineering of my parent institute, KLS, Gogte Institute of Technology, Belgaum, for their full cooperation and support during the entire period of my research programme. I thank VTU, Belgaum for providing me with research grants to buy emission measurement apparatus for my experimental studies. I thank Mr. M.S. Patil of Apex Innovations, Sangli, for his help during the course of experimental work. I would like to express my thanks to all my friends who have directly or indirectly provided me moral support during this period. Sincere thanks to my friend Dr. V. V. Katti for all his help during the course of study.

I am ever grateful to my beloved parents and dear family members but for their constant encouragement and whole hearted support this would not have been a reality. Last but not the least all thanks to and cherishable memories of Baroda and The M. S. U.

- **H. K. Amarnath**