ACKNOWLEDGEMENT

I express my deep sense of gratitude to Dr. K. MARIMUTHU, Associate Professor of Mechanical Engineering, Coimbatore Institute of Technology, Coimbatore for his inestimable guidance and unstinted assistance throughout the course of this work.

The author is highly grateful to his Doctoral committee members Dr. V. PRABHU RAJA, Associate Professor, P.S.G. College of Technology, Coimbatore and Dr. P.K. PALANI, Associate Professor, Government College of Technology, Coimbatore for their continuous monitoring and effective criticism and suggestion during the entire research work.

The author is thankful to the Head of the Department and all the Faculty of Mechanical Engineering Department, Coimbatore Institute of Technology, Coimbatore for offering help, useful discussion and constructive suggestions during the entire course of research work. The author is grateful to the Management of Kumaraguru College of Technology, Coimbatore for providing necessary support and facilities to complete the work.

Finally, the author would like to dedicate his research work to all of his teachers and professors without whom the author could not have attained this position and completed his research.

RAJENDRAN S