ACKNOWLEDGEMENT

I am greatly indebted to Almighty for the immense grace and blessings, which strengthened me throughout the way to the thriving fruition of this thesis work.

Successful completion of this thesis work is devoted to the sincere help and guidance rendered by my guide Dr. N. Jawahar, Professor and Head, Dept. of Mechanical Engg., Thiagarajar College of Engg., Madurai. His knowledge, guidance and advice were vital for the accomplishment of this thesis.

Profound thanks to Mr. Karumuttu T. Kannan, Vice chairman and Correspondent and Dr. V. Abhai Kumar, Principal, Thiagarajar College of Engg., for the ambience and facilities provided to carry out this work.

I express my sincere thanks to all the teaching and non teaching faculty members in Mechanical Engineering Department, Thiagarajar College of Engineering for their kind help rendered during the period of my research.

I am extremely thankful to Mr.B.S.Girish, Lecturer in Mechanical Engineering for his untiring assistance in programming whenever needed.

To conclude, I thank my loving parents, my wife and my kids Divya and Ganeshkumar for their understanding, kindness, patience and moral support throughout this research work.

(G. KANAGARAJ)