ACKNOWLEDGEMENT

The author takes this opportunity to express his sincere gratitude to his research supervisor Dr. P. Ganesan, Asst. Professor of Mathematics, Anna University, Chennai for his guidance, patience, advice and encouragement throughout his research career.

His sincere thanks are due to the Doctoral committee members Dr. R. Narasimhan, Professor and Head, Department of MCA, Sri Venkateswara College of Engineering, Sriperumbudur, Dr. T. Sundararajan, Professor of Mechanical Engineering, IIT, Chennai and Dr. R. V. Seeniram, Professor of Mechanical Engineering, Anna University, Chennai for their valuable suggestions at every stage of this research work.

The author expresses his thanks to Dr. Ponnammal Natarajan, Dean of science and Humanities, Dr. A. Vijayakumar, Professor and Head, members of the staff and fellow research scholars, Department of Mathematics, Anna University. He is deeply indebted to Prof. S. Muthukkaruppan, the Principal, the Management and the members of the staff, Sri Venkateswara College of Engineering for their encouragement.

The whole hearted support by his parents Mr. A. N. Rajamanickam and Mrs. R. Durgabai and the forebearance of his wife Mrs. M. Jayashri during the research work are acknowledged.