

ACKNOWLEDGEMENT

I would like to express my sincere and deepest gratitude to my supervisor, **Dr. S. Kalyanaraman**, Principal Rtd., Sri Paramakalyani College, for his expertise, invaluable guidance, constant encouragement, affectionate attitude, understanding, patience and healthy criticism added considerably to my experience. Without his continual inspiration, it would have not been possible to complete this study.

I am highly thankful to the Dr. R. Venkataraman, Principal, and Dr. G. Devarajan, Secretary, Sri Paramakalyani College, for their indispensable help during the study.

I thank Dr. S. Meenakshi Sundar, Head Department of Physics, for the facilities provided to carry out the research work at the Institute. I take this time to express my gratitude to the librarians for consultation of literature.

I owe my most sincere gratitude to Dr. S. Vijaya Lakshmi, Dr.V.Usha, Dr. R. Vettum Perumal, Dr. B. Santoshkumar and Er. Kumar Shanu for their valuable suggestions, ideas, concepts and contributions to my work that had a remarkable influence on my entire work in the field.

I am obliged to and sincerely express my gratitude from the core of my heart to SAIF Cochin and Periyar University, Salem for their assistance during the research work.

I pay my obeisance to GOD, the almighty to have bestowed upon me good health, courage, inspiration, zeal and the light.

I am very much indebted to my family, my wife and daughters and my Brother Dr Regin shinu who supported me in every possible way to see the completion of this work.

SHAJIN SHINU P M