

ACKNOWLEDGEMENT

First and foremost I thank the **Almighty God** for giving me the health, wisdom and perseverance to successfully complete the work.

Salutations to my former research supervisor **Dr.H.Alex Devadoss (Late)**, Head of the Department of Physics, St.John's College, Palayamkottai, for the valuable guidance given in the initial period of my research.

I express my deep sense of gratitude and profound thanks to my present research supervisor **Dr. S. Mary Delphine**, Associate Professor and Head, Department of Physics, Holy Cross College, Nagercoil, for accepting me as a research student even after the three years of research period was over. I am grateful for her constant encouragement, support and guidance.

I am extremely indebted to **Dr. R. Sugaraj Samuel**, Assistant Professor, Department of Physics, The New College, Chennai, for his valuable guidance and erudite suggestions being his busy schedule.

I owe a lot to **Dr. S. Janarthanan**, Associate Professor, Department of Physics, Adhi College of Engineering and Technology, Kancheepuram, for his invaluable profound influence in the entire course of this research work.

I express my deep sense of gratitude to **Dr. Jebarajasekhar**, Assistant Professor, Department of Physics, Government Arts College, Melur, for the momentous help rendered when I lost my former guide.

I am thankful to **Dr. M. Vanjinathan**, Assistant Professor in Chemistry, D.G. Vaishnav College, Chennai, for his help in the spectral analyses and interpretations.

I record my sincere thanks to **Dr. Sr. Geradin Jayam**, former Principal and **Dr. Sr. M.R. Basil Rose** the present Principal of Holy Cross College for permitting me to make use of the facilities in the research center in the campus.

I am very grateful to **Dr.R.A.Rajasekaran** (Rtd), Assistant Professor, Department of English, Government Arts College, Melur, for his timely suggestion and constant encouragement. I also thank him for the proof-reading of the text at every stage of its preparation.

I express my sincere thanks to **Dr.A.Mercy Pushpalatha**, former Principal and Secretary, also to **Dr.Christianna Singh**, the present Principal and Secretary, Lady Doak College, Madurai for graciously permitted me to do research work.

I would like to express my heartfelt thanks to **Dr.P.S. Bindhu**, Assistant Professor, Department of Physics, Lady Doak College, Madurai for helping me to recognize the present research supervisor. I would also thank **Mrs.V.ShanthiPramila**, BT Assistant in English, and **Mrs.M.Valarmathi**, BT Assistant in Mathematics, Naganakulam Government School for her timely help.

I extend my sincere thanks to **all the teaching and non teaching faculty** of the Department of Physics, Lady Doak College, Madurai for their support.

I wholeheartedly express my gratitude to my beloved husband **Mr. D. Solomon Sudha Raj** for his love, care, affection, constant encouragement and prayerful support that enabled me to complete this research work.

I must mention the support, encouragement and prayers received from my in laws, parents, sisters, co sister and my dear son **S. Israel Sam Raj**.

JANCI RANI JULIET A.R.S