

ACKNOWLEDGEMENTS

First thanks must go to my advisor **Prof. S.Umapathy** for his leadership, support, patience, suggestions and advice, attention to detail, understanding, and hard work. I render my sincere and heartfelt thanks to **Dr.T.S.Vivekanandam**, School of Chemistry, Madurai Kamaraj University for his valuable support during the entire process of my research work.

I extend my deepest thanks with gratitude to the Jesuit Management of Arul Anandar College (Autonomous), Karumathur under the academic headship of **Rev.Fr.Dr.G.Pushparaj, S.J.**, for their patience and encouragement in supporting my research work. My special thanks are due to **Rev.Fr.C.V.Mattam, S.J.**, who moulded me in my youth.

I hereby render my deep respect and indebtedness to **Prof.K.Navaneethakrishnan**, Head and Coordinator, School of Physics for his encouragement and enquiries rendered as and when I felt disgusted. I extend my sincere regards and heartfelt thanks to **Prof.K.Iyakutti**, **Prof.E.Palaniyandi** and **Prof.V.Ramakrishnan**, for their valuable support of encouragement.

I express my sincere thanks to the faculty of the School of Physics, **Prof. K. Ramachandran**, **Mr. V. Vijaya Arunachalam**, **Dr. N. Soundararajan** and **Mrs. S. Rajashabala** for their valuable help many times during my period of research.

I extend my gratitude of thanks to the director and staff of **USIC** for their valuable help, and all the administrative staff of Madurai Kamaraj University for the timely assistance.

I thank all the research scholars, technicians and ministerial staff of the School of Physics for their valuable cooperation.

I'd like to thank the **University Grants Commission, New Delhi** for the financial support and study leave through **Faculty Improvement Programme**.

I place on record my deep sense of gratitude of thanks to **Prof.Ajay Gupta** and the most helpful team of scientists, engineers, technicians, research scholars, administrative staff and catering staff of **UGCDAE Consortium for Scientific Research, Indore, India** for their noble gesture in allowing me to use most of the experimental facilities during my research work.

My sincere thanks goes to my department colleagues, other teaching and non-teaching colleagues and friends for their constant enquiries about my research progress and encouragement.

My deepest gratitude goes to all the students of Arul Anandar College, Karumathur, for their good wishes.

I will be failing in my duty if I do not thank all the Rev.Sisters of St.Anne's Convent, Periyakulam for their prayer support.

I'd like to thank my parents, parent-in-laws, sister, brother, my wife Arockiam Thaddeus, children Minna, Deena and Joshua for instilling in me the confidence to work confidently by their sacrificial love.