ACKNOWLEDGEMENTS

I express my gratitude and indebtedness to my research guide, Professor T.S.B. Narasaraju, Department of Chemistry, North-Eastern Hill University, Shillong, for his supervision and constant guidance to enable me to complete the investigations reported in the dissertation.

I wish to thank Dr. P.V.R. Rao, Reader in Chemistry, School of Agriculture and Rural Development, Medziphema, North-Eastern Hill University, Nagaland and Dr. S.K. Gupta, Lecturer in Chemistry, Shillong College, Shillong, for their suggestions and help during the course of the present investigations.

It is my pleasant duty to acknowledge with thanks the generous co-operation extended to me by the authorities of the North-Eastern Hill University, the Dean, School of Physical Sciences, the Head of the Department of Chemistry, North-Eastern Hill University, Shillong, and the Head, R.S.I.C., NEHU, Shillong, by kindly permitting me to make use of the facilities required for the progress of my research work. I am also thankful to Dr. A. L. Verma, Dean, School of Physical Sciences, and Professor of Physics, NEHU, Shillong, for getting the Laser Raman Spectra of the samples recorded in his laboratory.

Thanks are also due to Dr. D.R.K. Murthy, Director, Chemical Division, G.S.I., Shillong, for permission to carry out atomic absorption measurements in his division, to Dr. D.K. Nag, Director, Mineral Physics Division, Geological Survey of India, Shillong, for getting the x-ray diffraction patterns recorded in his division, and to Professor C. Suryanarayana, Professor of Metallurgical Engineering, Banaras Hindu University, Varanasi, for getting the electromicrographs of the samples recorded in the Department of Metallurgical Engineering, Institute of Technology, Banaras Hindu University, Varanasi.

I place on record my gratitude to all the faculty members of the Department of Chemistry, North-Eastern Hill University, Shillong, for their help and co-operation throughout the progress of the work.
My heartfelt thanks are due to my colleagues, Dr(Miss) Nashreen Islam, Dr(Miss) Mamata Sarkar, Shrimati Meenakshi Devi, Shrimati Shakira Islam, Miss Dinah Pooranchand, Miss Beena George, Shri M. Bhattacharjee, Shri A. Sinha and Shri C.V. Asokan, of the School of Physical Sciences, North-Eastern Hill University, Shillong, for the help very kindly extended to me throughout the course of the present investigations.

The co-operation extended by the Administrative staff of the Department of Chemistry, North-Eastern Hill University, Shillong, the technical staff of R.S.I.C., North-Eastern Hill University, Shillong, is also gratefully acknowledged.

I place on record my sense of gratitude to the authorities of the North-Eastern Hill University, Shillong, for awarding a Junior Research Fellowship to me and for subsequently elevating it to a Senior Research Fellowship, which provided me with financial support to complete the course of investigations reported in the dissertation.

Help rendered by Shri N.K.Paul Choudhury in typing the thesis and by Shrimati Florency Jose, Department of Chemistry, North-Eastern Hill University, Shillong, in xeroxing the material included in the thesis is also gratefully acknowledged.

I place on record my sense of gratitude to my parents without whose affection and inspiration this work would not have been completed. I am indebted to all the members of my family, Dr. J. Joseph, former Joint Director, Botanical Survey of India, Calcutta, and Dr. P.T. Cherian, Dy. Director, Zoological Survey of India, Madras, for the encouragement, enthusiasm and the moral support extended to me.

Grace George
GRACE GEORGE