

Acknowledgements

I am highly indebted to my respected teacher and supervisor Prof. D.R.S. Somayajulu for his invaluable guidance, constant encouragement and support at every step throughout my entire work. It is beyond words to express the benefits obtained by me from his inspirational talks and numerous discussions that immensely helped me during my present work.

I would also like to express my gratitude to Mr. Naresh Patel, Dr. P.K. Mehta, Dr. K.C. Sebastian, Mr. Mukesh chavda, Mr. Narendra Patel for their cooperation and help.

I am highly indebted to Prof. Ajay Gupta, Director, IUC, Indore who extended the facilities at IUC, Indore for taking some of the Mossbauer spectra.


I would also like to acknowledge the great help from Dr. S.S. Madhava Rao of department of chemistry for letting us use micro balance for weighing purpose.

I would also like to thank Dr. S.M. Yusuf of BARC, Mumbai for getting the neutron depolarisation measurements made on my samples.

I am thankful to all my colleagues like Dr. Sandeep Vyas, Dr. H.R. Panchal, Dr. Dhiren Shah, Dr. Keyur Vyas and Dr. Sumi Dhar to name a few

for their cooperation. I would also like to mention the staff members and the workshop of the Physics Department for their cooperation.

I would also like to express my gratitude to my parents with out their constant support and encouragement it would not have been became easier for me to complete the present work.

A handwritten signature in black ink, appearing to read 'Mitesh Sarkar', with a stylized circular mark at the beginning.

Mitesh Sarkar