Acknowledgements

Firstly my sincere thanks go to Prof. R. B. Prabhu and Prof. P. R. Sarode, my supervisors in the Department of Physics, Goa University for introducing me to this area of research and providing me with all the facilities, assistance and freedom to work in my own way. Their guidance and encouragement has helped me in my work.

The role of Inter University Consortium for DAE Facilities, (IUC-DAEF), in making available neutron scattering facility at BARC as well as other material characterization facilities needs to be recalled. Financial assistance and encouragements from its Directors Prof. R. Srinivasan and Dr. B. A. Dasannacharya are gratefully acknowledged.

I am grateful to Dr. K. R. Rao, (Ex-Director, Solid State and Spectroscopy Group, BARC) for extending me the neutron scattering and allied facilities of Solid State Physics Division. The help, guidance and encouragement received from him for neutron scattering work is also gratefully acknowledged.

I would like to thank Dr. S. K. Paranjpe for his valuable suggestions, guidance and encouragement throughout this work. His direct involvement in this programme as an expert in magnetic neutron scattering is responsible for the successful completion of the essential part of the work. Ms. Mala N. Rao gave untiring help in carrying out all the neutron scattering experiments. To her I would like to express my special thanks. Apart from this, I would like to thank Dr. A. S. Sequeira, Dr. Madhav Rao, Mr. P. R. Vijayaraghavan and all the other members of Solid State Physics Division for their kind suggestions and help received from time to time during my stay in BARC, Mumbai.

It gives me a great pleasure to acknowledge the help received from Dr. P. Raj and Dr. A. Sathyamoorthy (Chemistry Division, BARC) in sample preparation, Dr. V. C. Sahni and Mr. P. K. Mishra (TPPED, BARC) in magnetization measurements, Dr. S. K. Dhar and Mr. S. M. Pattalwar (TIFR) in specific heat measurements and Dr. V. Ganesan and Mr. P. Saravanan (IUC-DAEF) in resistivity measurements. I have also benefitted from the suggestions and discussions I had with all these people.

I am extremely thankful to Dr. G. R. Bhat and the other members of Physics Department, Goa University for their valuable help throughout the course of this work. The constant encouragement from Professor V. N. Kamat Dalal, Dean, Faculty of Natural Sciences, Goa University needs to be mentioned here.

I am very much thankful to my friends Anjli, Alka, Gajanan, Shantanu, Tushar, Deepak (Goa University), Mahesh (Pune), Vasant, Ashwani, Vasudeva, P. D. Babu (IUC-DAEF), Sudhish (Jaipur) and Rajeev (BHU) for their co-operation and company.

Last, but not the least, I owe much to my parents whose wise and caring presence have always guided me in thought and action.

In the end I would like to thank all those persons who have helped me, in whatever form, in the course of the present work.

March 1997

Kaustubh Priolkar