ACKNOWLEDGEMENT

I would start by saying that it has been quite an ordeal to carry out this research work, as I had to work at two places with thousands of miles apart. I am very grateful to my research supervisors Dr. G. M. Peerzada and Dr. D. V. Behere for providing two different ways to approach a research problem, which was quite an experience in itself.

I am indebted to Dr. G. M. Peerzada for his suggestions to deal with some of the challenging problems in the field of bioinorganic chemistry, and for his help, cooperation, and guidance. My words fail in expressing my sincere gratitude to my co-supervisor Dr. Digamber V. Behere for introducing me to this exciting field and for his excellent guidance throughout this work. I am also thankful to him for the fruitful discussion held at Tata Institute of Fundamental Research, Mumbai.

My sincere thanks to Prof. S. Mitra, Chairman, department of Chemical sciences, TIFR, and all other members of the department who allowed me to carry out some experimental work at TIFR.

I am grateful to Dr. B. U. Khan, Head, department of chemistry, university of Kashmir, for purchasing the necessary chemicals required for my research and for his help, whenever, it was needed.

I am very thankful to Professor V. R. Marathe, M. Afaq, Dr. M. A. Qureshi, Dr. S. Mazumdar and Mr. G. M. Rather for their fruitful suggestions and help.

A word of thanks to all my friends, A. K. Sau, Fayaz Ahmad, K. Chattopadhyay, Sayan, Swati, Prashant, Kavita and B. T. Kansara for providing a nice working and friendly environment during my stay and for their help. My thanks to A. Rashid, Mr. Makdoomi, Yasmeen Jee, and Ali Mohammed, library and chemical stores section for their generous help and cooperation.
I have no words to express my gratitude to my parents, Prof. W. Z. Deva and B. Jahan Ara, whose prayers, constant encouragement and support helped me during the entire course of my Ph.D, without which this thesis would not have been possible. I owe my everything to my parents. My love and thanks to my little dears, Hindaal and Nayela, who were a source of inspiration for me and whose innocent faces kept me smiling during these difficult and trying times. Thanks to my dear friends Abida, Aasra, Shafoo and Aaquib for their support and guidance and also thanks to my brother Dr. Amin for his advice.

Last, but not the least, thanks to my husband, Javid, who has been very patient, encouraging and helpful during this entire period, and with his support and cooperation, I could concentrate more on my research. He always stood by me in my difficult times.