Acknowledgements

It gives me immense pleasure to humbly place on record my profound sense of gratitude, indebtedness and heartfelt thanks to my research supervisor Dr. K. Chandra Sekhar, Scientist, Analytical Chemistry and Environmental Sciences Division, IICT, Hyderabad for his supervision, valuable comments, and constant support throughout my research work.

I extend my deep sense of veneration and gratitude to Prof Y. Anjanyulu, Director, Institute of Science and Technology, JNTU to the kindness, valuable help, and constant encouragement right from me joining my masters till date.

I am also grateful to the Director, IICT, and Dr. M. Vatramani, Head, Analytical Chemistry and Environmental Sciences Division, IICT for their constant help and support throughout my stay at IICT.

I am grateful to Council for Scientific and Industrial Research (CSIR) for providing fellowship for carrying out my research.

I wish to acknowledge and express my sincere thanks to Dr. V. Balaram, Deputy Director, NGRIL, Dr. M. R. P. Reddy, Scientist, C-MET, Mrs. V. Lalitha Kumari, Scientist, DMRL for their concern, timely analytical support, and technical discussions at various stages of my work.

I am also thankful to Dr. V. Hima Bindu, Asst. Professor, Center for Environment, Institute of Science and Technology, JNTU for her immense help and cooperation for carrying out my research.

I express my deep sense of gratitude to Late Prof C. A. Sastry, Retd Professor, IIT, Chennai, Prof. N. Someshwara Rao, Head, Department of Chemistry, Andhra University for their valuable guidance, suggestions and encouragement. The suggestions given by them during discussions at various stages of my work helped me to polish the quality of research.

With respectful regards and immense pleasure I wish to thank Dr. K. Bhanu Prakash, Scientist, IICT from bottom of my heart for his counsel, timely support, constant motivation and technical suggestions during my research work.

I wholeheartedly express my gratitude to Prof. Khim Chu, Department of Chemical and Process Engineering, University of Canterbury, New Zealand for giving valuable suggestions in carrying out arsenic phytofiltration studies.

I am also grateful to Prof. Gregorio Garcia, Dpt. Producción Agraria, Universidad Politécnica de Cartagena, Spain for his profound help and valuable comments in carrying out the lead phytoremediation studies.

My deep sense of acknowledgements to Prof. Piyush Kant Pandey, Department of Engineering Chemistry, Bilai Institute of Technology, Durg, Chatisgarh, for providing with arsenic contaminated waters of Chatisgarh and also his suggestions.

I am extremely thankful to Dr. B. Sitaramam, Head, OCP Division, IICT for introducing me to immobilization technology and Dr. A.R.K. Sastry, OCP Division for helping me in preparation of immobilized biomass beads.

The one person whom I would like to acknowledge is Dr. B. Sreedhar, Scientist, IICT for his timely help in analysing samples for Electron Scattering Characterization Analysis and Thermo Gravimetry and his valuable comments in interpreting the results.

I owe my flow of thanks and heartfelt regards to Mrs.C.B.Lakshmi, Head, Research Management Area, IICT for her support, motivation and kind help during my stay at IICT.
I am extremely thankful to Dr. T. Gyaneshwara Rao T.O, NGRI, Mr. S.L.Ramesh, T.O, NGRI for their help in analysis of samples.

I am extremely thankful to my friends Mr. D. Samuel Suman Raj SRF-CSIR and Mr. N. Sreedhara Chary, SRF-CSIR for their kind gesture and responsible nature towards me and has helped me to undertake and complete this academic venture.

I am thankful to Dr. Vutukuru S. Srinivas, Research Associate, JNTU, Dr. A. Siwa Shanker, Research Associate, JNTU and Dr. B. Swarna Latha, Research Associate, JNTU for their support and help during my research.

My heartfelt thanks to Mrs. C. Aparna and Ms. P. Rekha, Research Fellows, JNTU for their affection and readily extending their support whenever needed. I also acknowledge Mr. T. Vijayender Singh for his support and help.

I am very grateful to Mr. K. Krishna Prasad, Mr. Y. Vijay Bhasker Research Fellows, IICT for their fondness and constant help whenever needed.

Special thanks are due to Mr. M. R. V. S. Murthy, Ms. K. Vasantha Maduri, Ms. Praveena, Mr. Raghavender Rao IICT, and Ms. M. Anupama, Arabindo Pharmaceuticals for their concern, support and timely help during my research.

I thank Ms K. Rajni, Mr. T. Rameshwar, Ms V. Aparna, Ms Uma Vasavi, Mr. N. Shashi and Ms V. Bharani for their cooperation during my research.

I have pleasure in thanking Mr. Murarilal T.O, IICT for help in analyzing the IR samples and Mr. Narendra and Mr. Siva Rama Krishna for their support.

I would like to acknowledge Dr. G. V. Subba Raju, Vice president, Chemiloids, Vijayawada for supplying me with biomass of Garcinia cambogia.

Thanks are also due to Mr. Saitesh, JNTU and Mr. Siva Rao, JNTU for extending help in the preparation of my thesis.

I thank all the staff members of Analytical Chemistry and Environmental Sciences Division, IICT for their help and cooperation during my stay at IICT.

Out of lab, I convey my whole hearted thanks to all of my friends for being with me and giving me moral and physical support and constantly encouraging me to achieve my endeavors.

Finally, I would like to express my sincere gratitude to my family. Without their encouragement and loving support of my endeavors, academic or otherwise, I would not have accomplished my goals. I will never forget the personal sacrifices they have made to ensure that I succeed. I hope I never take them for granted and I pray that I've made them proud.

C. T. Kamala

(C.T. KAMALA)