Acknowledgements

With immense sense of gratitude, I acknowledge to my research Supervisors Prof. (Dr.) Sabu Thomas, School of Chemical Sciences, Mahatma Gandhi University and Dr. M.G. Kumaran, Jt. Director (Retd.) Rubber Board, Kottayam for their inspiring guidance and motivation during the entire course of my research work.

I was fortunate to avail visiting fellowships to the Polymer Interface and Adhesion Laboratory, POSTECH, South Korea and University of Kaiserslautern, Germany. I thank Prof. (Dr.) Kilwon Cho, and Prof. (Dr.) Jozef Karger-Kocsis, for this wonderful opportunity to interact with some of the finest researchers in the world. Thanks are also due to Prof. Kwang soo Kim, Centre for Superfunctional materials, POSTECH for his invaluable help and encouragement.

I express my sincere thanks to Prof. (Dr.) M. Padmanabhan, Dean, Faculty of Science and Prof. (Dr.) P.K. Radhakrishnan, Director, School of Chemical Sciences for the encouragement extended to me during my research tenure. I am also thankful to my teachers at School of Chemical Sciences for their constant motivation. Thanks are also due to the non teaching staff, School of Chemical Sciences and the staff of M G University Library for their co-operation and support.

I am grateful to Dr. K. Satheesh Kumar, Dr. Sreekala, Dr. Sony, Dr. Z. Oommen, Dr. Manikantan Nair and Dr. Abi for their help in completing the analytical part of my research work. A special word of thanks to my colleagues Seno and Selvin for their invaluable suggestions and selfless efforts during the entire work. Thanks are also due to my lab mates and friends Bejoy, Sreekumar, Bijal, Rani, Seena, Maya, Nishar, Bijumon, Biju, Aju, Indose, Jacob, Jyotish, P. Manoj, Praveen, Jayamol, Jesmy, Meera, Rejitha, Sholy and Shijo for their fruitful suggestions and support during the Ph. D program. I am also thankful to Dr. Kuruvilla, Dr. Siby, Dr. Radhesh, Dr. Laly, Dr. Moly, Dr. Susan, Maries teacher, Ciby teacher, Viju teacher, Indira
teacher, Sherly teacher, Anil Sir, Thomas Sir and Shaji Sir for the enlightening discussions. I would also like to thank Chithra and Salini for the wonderful friendship which made our hostel days memorable. I also remember our Indian friends at POSTECH, Dr. Manoj and Salini in particular, for their warm friendship and nice company. Thanks are also due to Manish, Joong Tark Han, Jung Su and Yeong Dong Park for invaluable help extended to us during our stay at POSTECH.

I am also thankful to CSIR, New Delhi, DST/DAAD Exchange programme and Mahatma Gandhi University for providing senior research fellowship.

Thanks are also due to Mr. Shibu and Mr. Unni, Minitek Computers, P.D. Hills, Kottayam for their kind help in editing and nicely compiling the thesis.

Now I wish to express my heartfelt gratitude my husband Prakash and our little daughter Gowri for being understanding and supportive. Our parents and brothers were also a perpetual source of motivation and encouragement. Above all, I thank Almighty for giving me the strength and wisdom to reach each and every milestone of my life.

Sobha V. Nair