Acknowledgement

I express my heartfelt gratitude to my supervising teachers Prof. (Dr.) Sabu Thomas, School of Chemical Sciences, Mahatma Gandhi University, Dr. Mathew C. Chandy, former Head of the Department (Retd.), Christian College, Chengannoor and Dr. Peter Koshy, Regional Research Laboratory, Thiruvananthapuram for their invaluable guidance, motivation and encouragement during the entire course of my research work. It has been a great pleasure for me to work under their supervision. I am indebted to them for the helpful discussions and valuable advice during the entire course of this work.

I express my deep sense of gratitude to Prof. (Dr.) Jozef Karger-Kocsis and his research group, Institute of Composite Materials, University of Kaiserslautern, Germany, for his suggestions, invaluable support, help and encouragement during my research stay in Germany under DST/DAAD research programme.

I express my sincere thanks to Prof. (Dr.) M. Padmanabhan, Dean, and Prof. (Dr.) P.K. Radhakishnan, Director, and all the teaching and non-teaching staff at School of Chemical Sciences, Mahatma Gandhi University for help and encouragement during my research. I am also thankful to the staff, Library, Mahatma Gandhi University and School of Chemical Sciences.

I remember with gratitude the help, caring, support and constant encouragement provided by my long time friends Dr. Bejoy and Selvin. I am extremely thankful to my friends and colleagues: Anil sir, Dr. Abi, Dr. Radhesh, Sobia, Bijul, Sreekumar, Bijumon, Biju, Pratheesh, Jobin, Indose, Jacob, Aju, Rajesh, Jyothis, Nishar, Hari, Manoj, Manoj P., Dr. Gops, Dr. Gopakumar, Biju P.K., Rani, Seena, Maya, Asha, Anithacherry, Chithra, Jayanoll, Jesmy, Meera, Sholy and Shijo for their support and fruitful suggestions during the Ph. D programme. I am also thankful to Dr. Kuruvilla, Dr. Siby, Dr. Ajith, Dr. Satheesh, Dr. Varughese, Dr. Sreekala, Dr. George, Dr. Laly, Dr. Moly, Dr. Susan, Marius teacher, City teacher, Viju teacher, Indira teacher, Sherly teacher, Raju Sir, Thomas Sir, Shaji Sir, Tony Sir and Rev. Fr. Tomy for their suggestions and discussions during my research programme.

Thanks are also due to Mr. Shibu, M/s Minitek, P.D. Hills P.O., Kottayam for his kind help in editing and compiling the thesis.

I am also thankful to UGC, New Delhi, DST/DAAD exchange programme and Mahatma Gandhi University for providing senior research fellowship.
Finally and most importantly, I owe my deep sense of gratitude and regard to my beloved Parents whose prayers, affection, encouragement, inspiration, patience and support smoothly paved my path towards the successful completion of this research work. My hearty thanks to my sister Seni and brothers Senal and Senso for their unconditional love, care, affection, motivation, encouragement and support which always energised me during the entire research work.