Acknowledgement

My head bows before the Almighty who gave me strength and blessings throughout the work

I am grateful to my Guide Prof. Shantikumar V Nair, distinguished Director, Amrita centre for Nanosciences and Molecular Medicine & Dean of Research, Amrita Vishwa Vidyapeetham for giving me the opportunity to conduct my PhD research in the area of nanosurface modification of bio-implants as well as his encouragement and valuable advice during the course of my thesis work.

I express my sincere thanks to my Co-Guide, Dr. Deepthy Menon, Associate professor, Amrita centre for Nanoscience and Molecular medicine. She, a teacher with insight, contributed her valuable time guiding me through the period of my study. All the more her efforts and skills reflect in the pages of this thesis which my labors will never stand upto.

I gratefully acknowledge my Co-Guide, Dr. Vinoth Kumar Lakshmanan, for his help in molecular biology related experiments and for all the help I received from him through the remarkable knowledge he hold in this field.

I owe my gratitude to Prof. Manzoor Koyakutty, for imparting his positive attitude and the invaluable scientific talks we had as well as for his overall guidance. He brought innovations especially in the field of nanosurface modification and always kept an eye on the progress of my work and was available when I needed his advice.

I acknowledge Prof. R. Jayakumar for his support, suggestions and co-operation during entire period of my thesis work

I am indebted to Dr. A.K.K Unni and Dr. Sooryadas for their valuable suggestions and support for animal studies.
I gratefully acknowledge Dr. Mira Mohanty, Scientist G, Histopathology Laboratory and Mr. Muralidharan CV, Engineer G & SIC, Device Testing laboratory, Sree Chitra Tirunal Institute of Medical Sciences and Technology for their valuable suggestion and support for my work.

I wish to thank Dr. Ullas Mony and all other faculties of ACNS and Molecular Medicine for their support during my research period.

I appreciate Mr. Sajin P Ravi, Ms. Sreeja V Nair and Mr. Sarath, for their technical support in Scanning electron microscopy, Spectroscopy and confocal microscopy. Also I am thankful to the help of Dr. Amrita Suresh for her help with RT-PCR experiments.

I wish to acknowledge the support of this work by the Department of Biotechnology, the Government of India under the Bioengineering program monitored by Dr A Duggal. I am indebted for the support from the Department of Science and Technology, the Government of India, under the Nanomission Program. I am obliged to the CSIR (Council of Scientific and Industrial Research), India, for financial support through a Senior Research Fellowship.

I express my deep sense of gratitude to Amrita Vishwa Vidyapeetham, for providing substantial infrastructure support for basic research in Nanobiomedical sciences.

I am thankful to my friends Anitha VC, Annapoorna, Aswathy J, Sreeja V Nair, and Roshni Ramachandran for their support. My sincere thanks, to rest of my colleagues and friends who have helped me personally and professionally. No one is forgotten although not mentioned.

I bow before my Mother’s unconditional love and support for fulfilling my dreams.

Finally I acknowledge my husband who has been most understanding and supportive throughout the course of my studies.