

## **ACKNOWLEDGEMENT**

I would like to take this opportunity to thank my supervisors Professor Abdul Kariem bin Mohd Arof and Associate Professor Dr. Siti Rohana binti Majid for their guidance, encouragements and understanding throughout my PhD in University of Malaya. They have contributed much to my growth of my knowledge, experiences and character since I started my research assistantship under them in 2009. I would also like to thank the other lecturers and science officers who have contributed in any way to my research: Prof Ramesh, Prof Careem, Dr Ramesh Kasi, Dr Zul, Dr Venga, Dr Abubaker, Prof Natarajan, Prof Agnieszka, Encik Ismail, Pakcik Ismail, Endang, Syahril, Pakcik Mat, etc.

Secondly, I would like to convey my gratitude to my friends who have been with me throughout my research journey in Centre for Ionics University of Malaya (C.I.U.M.). Special thanks to Teo, Dr. Hamdi, Dr. Thompson, Dr. Jun, Wendy, Kim, Rusi, Pei Yi, Jimmy, Hon Ming, Jing Yi, Shanti, Saman, Ika, Ira, Ida, Shah, Helmy, Ikhwan, Fareezuan, Syahmi, Din, Emma, Mira, Leeana, Dr. Leena, Fitriah, Syidah, Iman, Fatin, Zila, Farhana, Anwar, Nisa, Umair, Kak Mazni, Dr. Lekshmi, Dr. Shanti, Bella, Nabilah, Wani, Dr. Yap, Rajam, Syahir, Jason, Kok Hau, Aini, Viknes, Ramis, Arun, Dr. Ghassan and many more for their friendship.

Last but not least, my greatest gratitude goes to my family, relatives and good friends who have been supportive, understanding and helpful to make this PhD come true. Many thanks to Lim Ho-Li for always being there for me. The time spent during this postgraduate degree in UM will always be one of the most memorable ones. Thank you and may God bless all.