ACKNOWLEDGEMENTS

Alhamdulillah, praise to Allah SWT for enabling this thesis to be completed. I wish to express my sincere gratitude to my supervisors Prof. Dr. Abdul Kariem bin Arof and Prof Madya Dr. Siti Rohana bt Majid for their patience, guidance and encouragements given to me throughout the period of my study. This thesis would not be realized without their support. To Prof. M.A. Careem, I am greatly thankful for your help in commenting on my write up and enhancing my knowledge on dye sensitized solar cells. To my friends and labmates, Dr. Hamdi, Jun, Thompson, Ikhwan, Fareezwan, Erwani, Nor Aini, Fitriah, Teo, Sim, Zila, Farhana, Nabil, Wendy, Jimmy, Din, Leeana and Leena, I pray to Allah to shower you with success and happiness and I thank all of you for the support that you have given me especially through the hard times that I had to go through. To Mdm. Nuwara Careem thank you very much for the advice and companionship during “the early stages of the difficult times”. To Pakcik Ismail thank you for helping in laboratory equipments. Last but not least to my brothers and sisters especially my sister Mofidah whose constant love and devotion are the pillars that support my strength during this period of study. To my beloved daughter Aleya Syazana whose sacrifice I treasure most and to Mr Baharudin bin Puteh for his continuous support. Finally to IIUM for the study leave given.

MAZNI BT MOHD NOOR

November 2013