ACKNOWLEDGEMENTS

I express my sincere gratitude and grateful to my guides, Dr. Radhakrishna S. Aithal, Professor, Department of Electrical and Electronics Engineering, Joint Director, MIT Manipal and Dr. Dattatraya N. Gaonkar, Assistant Professor, Department of Electrical and Electronics Engineering, National Institute of Technology, Karnataka (NITK), Surathkal for helping me out when in deep trouble, and also for their enthusiasm, encouragement, inspiring support and valuable guidance on fundamental and theoretical important matters throughout the whole research work.

I thank the management of Manipal University for making available for use the latest technical software and access to digital libraries that has greatly helped in speeding up the pace of the research work over the years.

I whole-heartedly thank all members of Doctoral Advisory Committee (DAC); Dr. Kumkum Garg, Director, MIT, Dr. Raviraja Adhikari, Associate Director (R&D), MIT, Dr. C. S. Adiga and Dr. Savita G. Kini, Professors, Department of Electrical and Electronics Engineering, MIT, Manipal for their valuable suggestions and recommendations.

I am thankful to, Dr. Ciji Pearl Kurian Professor & Head, Department of Electrical & Electronics Engineering, MIT Manipal for her encouragement and suggestions, and for ensuring a conducive atmosphere towards the research activities with valuable inputs. I would like to extend my sincere thanks to the former HOD of Electrical and Electronics Engineering, MIT, Manipal, Prof. K. R. Varmah for his valuable support and encouragement to carry out this research work.

I thank Dr. V. I. Gorge, HOD, Department of Instruments & Control Engineering, MIT, Dr. P.K. Singh, formally, Reader, Department of Instruments
& Control Engineering, MIT, Sudheer Kumar T.S., Additional Professor, Dr. P.G. Kini, Reader, James Antony Pinto, Lecturer, Department of Electrical & Electronics Engineering, MIT, Manipal, for their valuable assistance, advice and support during my research work. It is my pleasure to express my sincere thanks to all members of the teaching faculty and the support staff of the Department of Electrical & Electronics Engineering for their support and encouragement over the years.

I would cherish forever the co-operation and support rendered by my wife Pravina and my children, Prashant and Sushant. My thanks are also due to my brothers and my parents Sri. Rajnath Singh and Lt. Smt. Janaki Singh, who have given me such a kind of upbringing that has enabled me to carry out this work successfully.

As the list is endless, I would like to conclude humbly and graciously acknowledging all the help, support, encouragement and guidance from all those who have directly or indirectly contributed towards the successful completion of this research work.

Birendra Kumar Singh