ACKNOWLEDGEMENT

I would like to express my greatest appreciation and respect to Associate Professor Mohamed Hassan Eisa, my M. Sc. adviser. The past time spent in his group has been extremely beneficial. I saw unlimited patience, unsparing guidance, and unfailing trust. Above all, he always strives to help me succeed. My humble thanks are due to the whole staff, in particularly the Department of Physics, College of Science, Sudan University of Science and Technology (SUST), Khartoum, Sudan and Department of Physics, University of Nyala, Nyala, Sudan. This work reflects the input of many expertise people (colleagues, technicians and others) who were willing to share their time and knowledge with me, and who I gratefully acknowledge. Sincere thanks are also directed to my family for always encouraging me to aim as high as I possibly wanted. This work was carried out at the Physics Department, (SUST), during the years 2011-2012

Ali Yahia

Aug- 2012