ACKNOWLEDGEMENT

This thesis is the outcome of a long rigorous journey in which I have been encouraged and supported by many peoples who actually make my dream possible. It is really pleasure moment for me to express my full gratitude for them.

Primarily, I would like to express my deep and sincere gratitude to my supervisor Dr. Basudeb Basu, Professor, Department of Chemistry, University of North Bengal, Darjeeling, for his Inspiring guidance, parental attitude, solicitude behaviour and constant encouragement throughout my work..

I wish to express my warm and sincere thanks to Dr. Goutam De, Chief Scientist & Head, Nano-Structured Materials Division, CSIR-CGCRI, Kolkata, for his help to characterize our metal nanocatalyst.

I express my full gratitude to Prof. Ashutosh Ghosh, University of Calcutta, Kolkata and Mayukh Deb, IIT Delhi for carrying out the single crystal XRD.

I gratefully acknowledge to Prof. Pranab Ghosh and Dr. Sajal Das for recording and interpreting NMR spectra.

I offer my special thanks to Shreyasi Chattopadhyay, Kolkata for her valuable contribution in my scientific work.

I also thank Swarnali Roy, IICB, Kolkata for helping me to interprete HRMS data.

I would like to thank my labmates Dr. Kinkar Biswas, Dr. Sujit Ghosh, Debashish Da, Samirda Suchandra and Prasun for their help and active co-oparation throughout my research period.

I would like to express my thanks to University of North Bengal for providing the infrastructural facilities and DST, New Delhi.

I express my full gratitude to Head and all respected teachers of Department of Chemistry, University of North Bengal.

I really acknowledge my sister for his constant inspiration throughout my life.

I would like to thank my wife Aparna for her constant selflessness, love and support.

The single largest contribution in properly shaping me what I am today comes from the faith, hope and pride of my parents. Words are inadequate for expressing such feelings.