

ACKNOWLEDGEMENT

Successful completion of any types of projects requires helps from a number of persons. I have also taken a help from different people for preparation of this thesis. This thesis becomes a reality with the kind support and help of many individuals. I would like to extend my sincere thanks to all of them.

Foremost, I want to offer this endeavour to my **GOD** Almighty for the wisdom he bestowed upon and good health in order to finish this research.

I convey my sincere thanks and gratitude to my academic research guide **Prof. Shubhangi S. Soman**, Department of Chemistry, Faculty of Science, The M. S. University of Baroda to give me opportunity for research under her guidance. Without her guidance and advice this study would have been a little success. In every phase of this research work her supervision and guidance shaped this final report to be completed perfectly. I am highly indebted for her valuable guidance, her tolerance and persistent encouragement throughout the course of my research work right from the inception to realization of this work. I could not have imagined having a better advisor for my Ph.D study.

I convey my sincere thanks and gratitude to **Prof. N. D. Kulkarni**, Head, Department of chemistry, faculty of science, The M. S. University of Baroda, for providing facilities available in the department. I am thankful to Department of Chemistry, The M. S. University of Baroda for NMR spectra, elemental analysis and ESI Mass analysis.

I am tremendously fortunate to have my mentor **Dr. Rina Soni** who provide me an opportunity to join her team and who gave access to the laboratory facilities. She is having very good experience and immense knowledge in the field of laboratory work, data analysis and instrument handling that very few could match. I sincerely thank her for her wholeheartedly support, motivation and continues inspiration in completing this endeavour. Without her precious support it would not be possible to conduct this research. I extend my gratitude to her especially for analyzing NMR spectra, and Mass spectra of my synthesized compounds.

I am greatly indebted to **Mr. Paresh kapopara** (Advance diagnostics Laboratory) Surat for his kind help and support in antimicrobial activity test for my research work.

I am wishing to extend my gratitude to Ms. Sweta Umar, Mr. Pranav Buch, Mr. B Suresh department of zoology, M.S. University Vadodara for the anticancer activity.

I am thankful to Ms. Nisha, Mr. Hitesh Raval and Mr. Sunildutt Durgapal, Department of Chemistry, The M. S. University for FTIR spectral analysis of my synthesized compounds. I am thankful to Mr. Rahul Kadu and Ms. Ankita, Department of Chemistry, The M. S. University of Baroda for crystal data collection and structure elucidation. My sincere thanks are to the teaching staff of the department for courageous support all time.

My Special thanks to my seniors Dr. Jigar N Soni, Dr. Radhika R Baoni, Dr. Jigar Y Soni, Dr. Jagdish M Patel and Dr. Tirth H Thakkar for their support, inspiration, suggestions and motivation in my research work.

I am thanking to Dr. N M Patel (Principal) J P Arts and Science College, Bharuch for support and motivation in my research.

I would like to extend my thanks and gratitude to my research laboratory colleagues Ms. Ruchita Thakor, Ms. Arpita Desai, Mr. Sunildutt Durgapal, Mr. Rudra Dave and Mr. Kanu Kataria for their nice cooperation and pleasant company during my work.

The non-teaching staff members Bhavsar bhai, Rane bhai, Mehta bhai, Raval bhai, Sunil bhai, Rajesh bhai, Kalpesh bhai, Mahesh bhai, Dipak bhai, Revathi madam and all staff members owe a lot of thanks.

Thanks to my research colleagues and friends at chemistry department, Vishawanath, Ronak Bhatt, Harnish Soni, Rahul Bhatt, Shardul, Sanjay Parihar, Harsha, Nishant, Nilesh Patel, Ekta, Archana Solanki, Sanjay Verma, Hemant, Ishani Sahay, Aditya Khanvilkar and Aditya Puranik who made me feel very easy and co-operative during my research work. I am also thankful to our young research team of Department for their nice and pleasant company.

In addition to my colleagues two other friends Sanket Panchal, and Hitesh Patel, have provided moral support which was pivotal in this thesis development.

I am also thankful to my employer M/s Gujarat Narmada Valley Fertilizers and Chemicals Ltd. (**GNFC Ltd.**) Bharuch for the grant of permission for the further study. I am highly indebted to **Shree. R A Shah** (Former Executive Director & CFO & presently

consultant at M/s GNFC LTD.) for his kind help and moral support. I am heartily thankful to all my office colleagues at GNFC for their kind support.

I would like to express my gratitude towards my family for the encouragement which helped me in completion of the study. My soul mate and supportive wife **Sonam** who is always by my side when times I needed her most and helped me a lot in completing this study. My deep feeling of gratitude also goes to my elder sisters **Nirmi**, **Nisha** and my brother in-laws Mr.Manojkumar and Mr.Navneetkumar for their kind moral support and necessary help during my research work.

Last but no means the least no amount footnoting can even repay the debt, I owe to my parents. The blessings and best wishes of my parents **Shree Narendra S Shah** and **Smt. Neha N Shah** gave me courage and inspiration without which this work would not have been possible.

Nirav Narendrakumar Shah