Acknowledgement

It is the supreme blessings of the almighty GOD that have nurtured me throughout my entire life, and helped me to achieve whatever I have achieved. At the end of thesis I would like to thank all those people whose criticism, comments, encouragement and constant support have left an indelible imprint on this work.

I would like to convey my sincere gratitude and heartiest regards to my supervisor **Dr**. **Dhruba Prosad Chatterjee** for his constant guidance, invaluable suggestions and encouragement throughout my whole research work to do this research and develop myself as a researcher in the best possible way. I am thankful to West Bengal Government for providing **SVMCM** (Swami Vivekananda Merit Cum Means) fellowship and Presidency University for excellent research facility. Words are incapable to express my sincere gratefulness to my senior **Dr**. **Tapas Ghosh**, my fellow **Dr**. **Radhakanta Ghosh**, **Mahuya Pakhira** and my lab junior **Mr**. **Soumabrata Majumdar** and **Mr**. **Subhasish Sahoo** for their constant efforts, continuous encouragement and important suggestions during the whole research work.

I would like to thank **Prof. Anuradha Lohia**, Vice Chancellor of the Presidency University, **Dr. Debajyoti Konar**, Registrar of the Presidency University, **Prof. Sankar Bose**, Dean of Science of the Presidency University, **Dr. Arnab Halder**, Head of the department of Chemistry, **Prof. Gandhi K. Kar** and **Prof. A. K. Nandi**, Sr. Scientist of Indian Association for the Cultivation of Science. I would like to thank all Faculty members and non-teaching staff members of Department of Chemistry, Presidency University.

I am thankful to **Ranadeb**, **Subhasish**, **Subhadip** and all of my lab juniors and seniors from Presidency for giving me such a pleasant time during this period. Many thanks go in particular to **Sandip da**, **Atanu da**, **Nabasmita di**, other lab mates, seniors and juniors from IACS for their valuable suggestions. I also express my pleasure and thanks to my beloved friends Himon, Arko, Samar, Prakriti, Shirshendu, Srishti, Angana, Rumi, Bihan, Satyaki, Shaoni, Prayash, Pritadeep and Subho for their continuous support. Finally, I would like to convey my heartiest gratitude to my parents. I wouldn't have achieved anything without their support, love and care. Words are incapable to express their sacrifice.

I dedicate this thesis to my **parents** and **sir**.

Udayan Basak September, 2021 04.09.21

Declaration

I hereby declare that this thesis contains original research work carried out by me under the guidance of Dr. Dhruba Prosad Chatterjee, Assistant Professor, and Department of Chemistry, Presidency University, Kolkata, India as a part of the PhD programme.

All information in this document have been obtained and presented in accordance with academic rules and ethical conduct.

I also declare that, as required by this rules and conduct, I have fully cited and referenced all materials and results that are not original to this work.

I also declare that, this work has not been submitted for any degree either in part or in fully to any other institute or University before.

Udayan Basak

Signature of the candidate with date

Certificate

This is to certify that the thesis entitled "APPLICATION OF ATOM TRANSFER RADICAL POLYMERIZATION FOR THE PREPARATION OF MULTIFUNCTIONAL MATERIALS" submitted by Shri Udayan Basak who got his name registered for PhD programme under the my supervision (Registration Number R-17RS205110095 and date of registration 10/07/2018) and that neither his thesis nor any part of the thesis has been submitted for any degree/diploma or any other academic award anywhere before.

Signature of the supervisor with date and official stamp





Dr. Dhruba Prosad Chatterjee

