

## **ACKNOWLEDGEMENT**

Pursuing a Ph.D. is similar to embarking on a long journey with an unforeseen destination. Being close to my Ithaca, I realize I wouldn't have reached my destination without the help of several people. First and foremost, I would like to thank the **Almighty GOD** with a humble heart, for providing me the strength to take up this research work and complete it with his grace.

I sincerely thank his Excellency **Dr. Paul Dhinakaran**, Founder and Chancellor, Karunya University for providing spiritual and technical support with the best infrastructure to carry out the research meticulously.

I whole heartedly thank my supervisor **Dr.G.Prince Arulraj** , Professor & Head , Department of Civil Engineering , S.N.S College of Technology, Coimbatore, who helped me to sail through rough waters and unfamiliar territories. I thank him for guiding me in the proper way to do the research and providing me with strong support. He fostered my research skills and presentation abilities. Without his help, I would never have achieved my academic goal.

I thank **Dr. Paul P. Appaswamy**, Vice Chancellor, Karunya University, for providing all the support and serving as a source of inspiration to carry out my research work. He has taken major steps to promote the research activities in the institution.

I am very grateful to **Dr. (Mrs.) Anne Mary Fernandez**, Registrar, Karunya University, for all the encouragement and motivation given me to pursue this research. Her passion for research has made me into moving forward successfully in my research work.

I extend my heartfelt thanks to **Dr.E.J.James**, Director , School of Civil Engineering, Karunya University for his earnest support.

I express my sincere thanks to every faculty and staff members in School of Civil Engineering , Karunya University for their suggestions and encouragements.

My sincere thanks to relatives and friends for their supports and timely helps to complete the work.