ACKNOWLEDGEMENTS

It is a great pleasure in presenting my thesis on completion of my project and in expressing my deepest regards and deep sense of gratitude and sincere thanks to my research guide Prof. (Dr.) R. C. Hubli, Head, Materials Processing Division, Prof. (Dr.) A. K. Suri, Former director, Materials Group, BARC and co-guide Prof. (Dr.) N. Krishnamruthy, Head, Fusion Reactor Materials Section for their valuable guidance in hours of need, constant encouragement, keen interest, good wishes and valuable suggestions throughout my entire research tenure. I am also grateful to them for critically reviewing this thesis.

It gives me immense pleasure to acknowledge Prof. (Dr.) P.K.Tewari, Head, Desalination Division (DD) BARC, for his constant support and for critically evaluating my research activities time to time.

It is also my great pleasure to thank Shri. R.K.Fotedar and Sri. C.Subramanian, for their support in carrying out the research work.

I wish to express my sincere thanks to my colleague Dr. T.S.R.Ch. Murthy for his diversified help, fruitful scientific discussions and moral support offered to me from time to time throughout the course of the PhD work. My special thanks goes to my colleague and my dear friends, Dr. Sanjay Singh, Shri R D Bedse, Shri K Sairam and Shri Palash Mollick for their moral support and diversified help. I would like to thank Shri. Bhaskar Paul, Shri Sunil Kumar, Dr. S.Roy choudhary, Dr A.K.Sahu, Dr. Abhijit Ghosh, Dr. Tarashankar Mahta, Dr. Abhishek Mukherjee and Shri A. Nagraj for helping me in characterization of samples. I would like to thank my colleagues Shri. P.S.Yadav, Shri. S.B.Chavan, Shri. K.M.Prasad, Shri Sunantha Behra and Smt. Arati Sonawane for their co-opration and help during the experiments. It gives me immense pleasure to thank the members of the doctoral committee Prof. S.B.Roy (Chairman), Prof. Dinesh Srivastava (Member), Dr.
(Smt.) Sulekha Mukhopadhyay and Dr. Rajeev Kapoor for their critical review and suggestions during the progress review and pre-synopsis viva-voce. I also gratefully acknowledge the help rendered by all the members of Materials Processing Division, Materials Science Division and Fusion Reactor Materials Section for their co-operation and help during my PhD work. I wish to express my sincere gratitude and indebtedness to my parents, parents-in-laws for their blessings, for their love and support to me. I am extremely thankful to my spouse Smt. Varsha Sonber and my son Vaibhav for their patience and understanding. At the last, I am thankful to all the reviewer of my published paper whose comments on my manuscript always upgraded my scientific thought and open a new way of thinking.

(Jitendra Kumar Sonber)