ACKNOWLEDGEMENTS

The author has great privilege to express his immense sense of gratitude to Dr. Hazoor Singh, Associate Professor, Yadavindra College of Engineering, Punjabi University Guru Kashi Campus, Talwandi Sabo for his valuable guidance and untiring efforts throughout the tenure of this work. He has been an inspiring force where targets appeared to be difficult during the course of work. His timely help, constructive criticism and painstaking efforts made the author capable to compile the thesis in its present form.

It is a matter of great privilege and pride for me to express my sincere thanks and immense gratitude to my co-supervisor Dr. Buta Singh Sidhu, Dean Academics, Punjab Technical University, Jalandhar for his valuable and intellectual guidance throughout the tenure of this work. His involvement, unflinching encouragement, amiable nature and easy accessibility have been immensely helpful to me.

I am highly grateful to Dr. Satya Prakash, Professor Emeritus, Department of Metallurgical and Materials Engineering (MMED), Indian Institute of Technology Roorkee (IITR), Roorkee for his constant encouragement, valuable guidance and support throughout the work. His insight to the field of thermal spray coatings is second to none. Thanks are due to Dr. Harpreet Singh, Associate Professor, Indian Institute of Technology, Ropar for giving the author his valuable inputs during the course of this work.

Deep sense of gratitude is expressed to authorities of Punjabi University, Patiala, for permitting the author to pursue his research work and extending necessary facilities during the experimental and analysis work. I also express my sincere thanks to Dr. J.S.Khamba, Head, University College of Engineering for their cooperation and support.

I wish to thank the authorities of Metallizing Equipment Company Pvt. Ltd, Jodhpur for providing facilities for getting HVOF-sprayed coatings. The author is highly grateful to the authorities of Giani Zial Singh College of Engineering and Technology, Bathinda and Indian Institute of Technology, Roorkee for extending their support and facilities for carry out the research work. Sincere thanks are due to Er. Pardeep Singh, Sr. Xen., of Guru Nanak Dev Thermal Power Plant, Bathinda (Punjab) for his extended help and support to carry out the experimentation work at the plant. The author thankfully acknowledges the research grant from Department of Science and Technology, Ministry
of Science and Technology, New Delhi under SERC for carrying out the R & D work on “Development of Erosion-Corrosion Resistant HVOF Sprayed Cr$_3$C$_2$ –NiCr Coatings for Boiler Tube Steels Operating at Elevated Temperatures”.

I owe sincere thanks Mr. S.D. Sharma and Mr. Shiv Kumar of IIC, II TR, Roorkee and Mr. Amit and Miss. Narinder Kaur (IITR, Rupnagar) for extending their support to perform FE-SEM/EDS and XRD analysis.

I wish to thank my friends and colleagues, for their moral support and help to keep things in perspective. Thanks are due to Dr. Sukhpal Singh Chatha and Dr. Vikas Chawla for their everlasting support. Author is highly obliged and wishes to owe thanks to the technical staff of Yadavindra College of Engineering, Talwandi Sabo. The path towards this thesis spans several years of work, the author acknowledges his debt to all those who have helped along the way and seek apology that he could not mention personally one by one.

I humbly dedicate this work to my parents and parents-in-law, who are the source of inspiration and encouragement behind this research work. The author sincerely acknowledges the help extended by them during the tenure of this work by sacrificing their comforts. At the same time a sense of forgiveness is recorded for inability to provide probable help and attention they required during the entire duration. I would like to express my reverence and great admiration for brothers, sisters, brother-in-laws, sister-in-laws, nephews and nieces for their continual support and encouragement during the course of this work.

A sense of apology is due from my sweet daughter Tamanna, who probably missed many precious moments of her childhood from fatherly love and affection. The wife of author, Anu Bhatia, deserves special thanks and appreciation for her persistent moral support and giving her best to the growing daughter during the tenure of this work by sacrificing her comforts. Author is falling short of words to express gratitude to her for the determination shown to bear extra household responsibilities during the tenure of this work.

Above all, author is highly indebted to Great and Gracious Almighty God who blessed him with spiritual support and courage at each and every stage of this work.

RAKESH BHATIA