PREFACE

With the technological developments, it is possible now to optimize the design and manufacture of mechanical elements. Since long, I was wishing to work in the areas as it has fascinated me a lot due to its growing scope. This led me to pursue Ph.D.. After discussions with my guide and some of my colleagues in the academic field, I decided to carry out investigations on the use of newer techniques of optimization for certain mechanical elements.

I am thankful to Sardar Patel University for allowing me to carry out research on this subject with a combination of mechanical design, manufacturing and optimization.

I have referred number of books, research papers and other such materials of various authors and also referred relevant materials pertaining to my subject area from various websites. Though I have taken enough care to thank the authors by giving proper reference with citations and indicating the details in the bibliography, it is quite possible that somewhere unintentionally I have forgotten or missed out to mention some sources. I sincerely convey my apology to the original contributors of such sources.

All efforts are carried out to prepare this thesis. I am sure that the work presented in this thesis with the help of present study will prove to be beneficial to the industries, research scholars, and other interested parties for their future work in the said area.

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