

Preface

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Civil engineering is an important branch and always making human life safe and cheerfull. Researchers in the field of civil engineering are always enthusistaics and trying to overcome various challenges by providing advance solutions. The scope of civil engineering has widen considerably and it is demand of society to get better solutions through scientific research in various horisons of civil engineering. The better and durable structures, pleasant and healty environment, better transport and automation to assist consturction are some important topics included in this books thourgh six chapters.

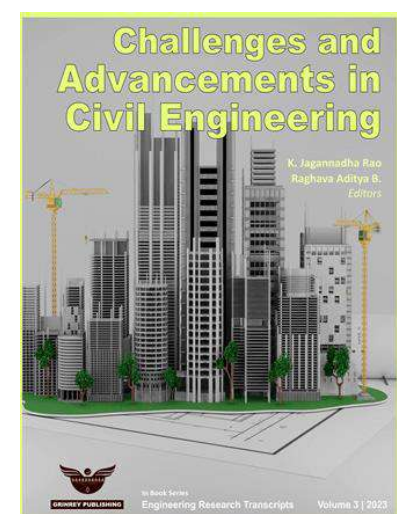
First chapter describes an experimental study which is aimed to understand some factors affecting the under-reamed pile capacity in sand i.e. the bulb angle and bulb spacing. It also compares the variation of capacities of these piles in sand in both loose and dense state. The second chapter deals with the experimental study on an axially loaded model raft and piled raft foundation on sandy soil with square, circular, rectangular, and trapezoidal shapes of the raft.

Third chapter examined the effects of vehicular emissions on urban air quality and public health focusing on the impacts of the air pollution using a vulnerable analysis for Kanpur city, India. A study to determine the percentage of monitored automobiles in Kanpur, India, that abide by Bharat Stage-IV and VI (BS-IV and VI) emission criteria is presented in next chapter.

A quantitative analysis of the dynamic variation in time to failure and failure probabilities of storage tanks during multiple fire domino effects is presented in chapter five. The concept of critical thermal dose is applied in this study for the estimation of dynamic time to failure of each vulnerable storage tank considering maximum synergistic effects based on the temporal variation in the intensity of heat radiation received by them.

The last article proposes a methodology for the development of a robotic complex for the manufacture of building parts. An analysis was carried out to select the most preferable option for the layout of the robotic complex and the option was selected using the method of the resulting quality indicator, consisting of an industrial floor robot, a mechatronic lathe and a storage device.

We believe the articles published in this book will be useful for future researchers and students as references in the respective fileds.



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