Guest Editor of
Structural Integrity and Life–Special Issue 2021

DR. MANOJ SAHNI

This year's Special Issue 2021 of *Structural Integrity and Life* once again invites Prof. Dr. Manoj Sahni, the Head of the Department of Mathematics, School of Technology, Pandit Deendayal Energy University, Gandhinagar, Gujarat, India.

Introduction to the Special Issue:

One of the difficulties facing societies throughout the world is accommodating an ever-growing population and maintaining the quality of life of everyone. To attain this aim, the groundwork must be laid for the growth of society, including infrastructure development, residential, manufacturing plants and production facilities. In building the structures and infrastructure, the structural design plays a key part in addressing the urban development issue, which leads to a growing number of metropolises worldwide. This special issue of Structural Integrity and Life 2021 departs from chosen papers based on modelling of structures from the 2nd International Conference on "Mathematical Modelling, Computational Intelligence Techniques and Renewable Energy" which was held on February 06 – 08, 2021, at Pandit Deendayal Energy University in Gandhinagar, Gujarat, India.

This International Conference was organised by the Department of Mathematics, Pandit Deendayal Energy University, in association with the Forum for Interdisciplinary Mathematics (FIM). The conference offered researchers, academics, and students with the chance to exchange their expertise and debate the newest advancements in transdisciplinary mathematics, statistics, computational intelligence, and renewable energy. More than 150 researchers met in a communicative environment to exchange their knowledge on one platform. The participation ranged from nearly all Indian states to several foreign nations like U.S.A., U.K., Japan, Chile, Australia, Nepal, Spain, South Africa, Oman, etc. They have shared their new ideas and new research on various topics. Their articles are peer-reviewed by the experts in their respective fields.

This issue contains thirteen peer-reviewed carefully selected articles based on the study of the various materials, such as brass, stainless steel, aluminium, etc., their computational analysis based on strength and failure under different physical conditions, different mathematical tools used under different circumstances, methods of minimization of the risk of failure and also the cost of manufacturing of any structure, their mathematical modelling and many more. In this way this issue is not only useful for researchers, educationalists, eminent scientists, and the students but also very much useful for engineers, industrialist working on manufacturing of materials, used in making residential buildings, in household products, in making various equipment used in various fields such as in ocean engineering, naval architecture, in civil, mechanical, marine, aerospace, and other various dimensions of engineering, etc. It contains topic based on growth of energy, which is the essential need of human society, as we know natural resources of oil/ gases are slowly diminishing and we all in some way dependent on these resources. It consists of work based on improvement in the sustainable production of energy fuel using biomass to biofuel pathway. It is also useful for biomathematicians as it contains bioheat transfer model useful in clinical applications such as in the treatment of cancer hyperthermia, cryosurgery, brain hypothermia and burn injury. One can find many such societal problems and their solution techniques in this Special issue.

The objective of this special issue is to disseminate the knowledge about the recent development of mathematical modelling among researchers, educationalists, renowned scientists, and students, to enable them to learn all the newest technology available in the scientific and technological domains. All academics, engineers and scientific researchers looking for new tools would surely benefit from these articles.