

# Preface

This special edition presents readers with research results in two critical domains: mechanical engineering and modern civil engineering.

The first chapter delves into the results of research of functional principles and the designing of machines and machine parts, intricate principles of mechanical engineering and the innovation that drives the development of efficient, reliable, and sustainable mechanical systems. From advancements in numerical modelling and structural and functional optimisation to the exploration of durability and machine assembling techniques, this chapter offers insights into the processes and methodologies that enable the creation of next-generation machines. It highlights both theoretical frameworks and practical applications, serving as a valuable resource for engineers, researchers, and practitioners.

The second chapter focuses on investigations and analysis of properties of building materials and the development of construction technologies. From the development of high-performance green materials to strategies for soil stabilisation using advanced materials, this chapter reflects the dynamic of sustainable development in civil engineering.

We hope this special edition will inspire readers to further investigate and contribute to these engineering practices, fostering continued progress in engineering disciplines.