

# Preface

This special edition presents a concise yet comprehensive exploration of some key advancements and solutions in contemporary materials science and engineering.

Chapter 1, “Alloys and Steel,” introduces readers to the critical properties, classification, and production and processing techniques of alloys and steel, shedding light on their pivotal role in modern industry and technology.

Chapter 2, “Corrosion Protection,” addresses solutions for protecting materials from corrosive degradation, offering bio-based inhibitors and innovative protective epoxy coating that extend the lifespan and reliability of engineered structures.

Chapter 3, “Functional and Special Materials and Technologies,” presents readers with the rapidly evolving field of advanced functional materials and related technologies, ranging from high-performance composites to emerging specialised technologies, that are shaping the future of manufacturing, construction, and beyond.

This special collection aims to provide essential scientific and engineering information, fostering a deeper understanding of the complex interplay between materials, technologies, and features of their applications.