

## Preface

The impact of materials engineering is felt across industries, from high-tech manufacturing and biomedicine to sustainable construction. This special edition is dedicated to reviewing recent advancements in the area of materials research and technologies of their synthesis and processing.

Chapter 1, Composite Materials, explores the design and application of composites, valued for their exceptional strength-to-weight ratio and adaptability, which make them essential in aerospace, automotive, orthopaedics, and other fields.

Chapter 2, Functional Materials, examines materials engineered for specific purposes, such as emitting light, etc., which are vital to providing innovations in many spheres of human activity.

Chapter 3, Additive Manufacturing, analyses the transformative role of these technologies, showcasing how they enable rapid manufacturing of final products, custom designs, and material efficiency use in industrial production.

Finally, Chapter 4, Building Materials, presents recent advancements in sustainable and high-performance materials that address the need for durable, eco-friendly structures in an era of intensive urbanization and environmental consciousness.

This special edition offers researchers and engineers a comprehensive view of cutting-edge developments in materials science and related technologies, inspiring further exploration and innovation in these essential fields.