

Preface

This special edition compiles recent advances and insights in applied materials science, with a particular focus on the relationship between material properties, processing technologies, and their applications in modern industries. The edition is organised into three chapters, each highlighting a distinct domain of modern materials engineering.

Chapter 1: Structural Metals and Processing Technologies covers applied aspects of metallic materials treatments, emphasising alloy design, thermomechanical processing, microstructural control, and performance optimisation. These research results offer valuable insights into metals as key structural materials in engineering.

Chapter 2: Properties and Processing Technologies of Polymers and Composites focuses on the development and performance of polymeric and composite structures. Attention is given to innovative processing methods and property tailoring, expanding their role in advanced applications.

Chapter 3: Functional and Special Materials presents some contributions on materials designed with unique or special properties, including electronic and electrochemical functionalities. These materials are central to cutting-edge technologies and interdisciplinary innovations.

This special edition aims to provide a broad and in-depth overview of current directions in materials research and practice. By uniting traditional and emerging fields, it serves as a valuable resource for researchers, engineers, and students in materials science and technologies.