

Preface

This special edition presents a focused examination of significant topics in materials science and engineering, emphasising practical applications of research results.

Chapter 1, "Advanced Alloys Treatment", analyses some modern methods for enhancing alloy mechanical properties to meet demanding exploitation criteria.

Chapter 2, "Optimisation of Cutting Parameters", discusses strategies for improving machining efficiency and precision, which are vital for achieving manufacturing excellence in machinery.

Chapter 3, "Wear of Materials and Structures", examines the degradation mechanisms that affect the durability and lifespan of machine parts and equipment, which is vital for maintenance and design improvements.

Chapter 4, "Computational Research", highlights the role of simulation procedures and numerical modelling in property analysis and predicting material behaviour, which is essential for engineering design.

Chapter 5, "Techniques of Analysis and Testing", presents the latest methods for analysing and testing materials, including procedures for non-destructive control to ensure reliable operation of machines and technological equipment.

The presented research results provide valuable information for researchers and engineers seeking to advance material performance and manufacturing processes through integrated approaches.