

# Preface

This special edition highlights the latest research across a diverse spectrum of applied materials science and technologies.

Chapter 1, "Functional Materials and Special Technologies," explores innovative materials specially designed for specific applications, showcasing their unique properties and functional potential.

Chapter 2, "Carbon Capture and Storage," addresses critical environmental challenges by examining state-of-the-art methods for reducing atmospheric carbon dioxide and mitigating climate change.

Chapter 3, "Applied Biotechnologies," presents results on utilising biotechnological processes in waste bioremediation and the application of nanocatalysts in biodiesel production.

Chapter 4, "Technologies in Petroleum Engineering," discusses recent advancements in sand agglomeration processes for improved sand control in oil and gas production, ensuring the reliable operation of technological equipment.

Chapter 5, "Green Building Materials," focuses on sustainable construction materials that contribute to energy efficiency, durability, and environmental stewardship.

The presented research results provide a comprehensive overview of interdisciplinary approaches and technological innovations essential for addressing the challenges of modern production, making this special edition an invaluable resource for researchers and engineers committed to sustainable development and technological progress.