

Preface

This special edition illustrates recent research outcomes in materials science, chemical technologies, construction, biomass processing, and nanotoxicology. The collection reflects scientists' and engineers' efforts to develop materials and technologies that meet modern environmental, technical, and health-related requirements.

Chapter 1: Natural and Sustainable Building Materials presents research focused on environmentally friendly building materials and their application practices. It discusses innovative solutions that minimise environmental impact while maintaining materials' mechanical and structural performance.

Chapter 2: Fire-Resistance and Fault Tolerance of Building Materials and Structures explores materials and design approaches that enhance building resilience and safety. It highlights recent progress in understanding materials' thermal behaviour, fire endurance, and related damage tolerance, aiming to improve structural reliability under extreme conditions.

Chapter 3: Advanced Biomass Applications investigates the transformation of biomass into value-added materials, fuels, additives for composite materials, and means for lauric acid adsorption. The chapter discusses innovative utilisation routes that contribute to the circular economy and support the transition toward renewable energy and sustainable industrial processes.

Chapter 4, Nanotoxicology and Nanosafety, addresses one of the most pressing topics in nanotechnology: assessing the health and environmental risks associated with using nanomaterials. The chapter reviews nanoparticle interactions with biological systems and their exposure assessment to these systems' functional possibilities.

This special edition is a valuable resource for researchers and engineers whose professional activity is dedicated to advancing materials science and sustainable technologies.