

Preface

This special edition presents diverse explorations in materials science, processing and synthesis technologies, building materials and textile production highlighting sustainable and innovative solutions that define the future of industry and construction.

The first chapter delves into the characteristics of structural metals and the cutting-edge processing techniques used to enhance performance and versatility in industrial applications.

The second chapter highlights sustainable practices and innovations aimed at minimizing environmental impact, showcasing how chemistry can be driving a shift toward cleaner and more responsible technological solutions. Some chemical processes based on applications of utilised carbon dioxide as a reagent are presented in this section.

The third chapter entitled “Materials and Technologies of Textile and Apparel Production” explores the intersection of tradition and innovation in technologies of modern textile production, revealing how new materials and technological solutions are redefining the textile industry and increasing the functionality of the final product.

The final fourth chapter focuses on groundbreaking approaches to the production and applications of one of the world’s most essential building materials - concrete, offering insights into its significant role in sustainable construction.

This special edition will spark curiosity and inspiration in readers whose activity is related to the above-mentioned industrial sectors, and we hope will contribute to creating a sustainable industrial future.