

# Preface

The presented special issue is dedicated to recent achievements in applied materials science and materials processing technologies in modern industrial production.

The first chapter's theme is the microstructure, optical and photocatalytic properties, synthesis and processing technologies, green synthesis methods, and analysis of some practical applications of advanced nanomaterials.

Functional materials such as a shape memory natural rubber and the phase change combined material for cooling systems and also analysis of the electrochemical performance of battery-supercapacitor hybrid energy storage device are presented to readers' attention in the second chapter.

The next third chapter is dedicated to analysing the properties of some ceramic and composite materials.

The last chapter contains the research results on the analysis of chemical engineering processes and catalytical technologies for application in ore recovery, maltodextrin production, food, pharmaceutical and cosmetic industries, etc.

This special edition will interest many engineers and researchers in materials science, machinery, and chemical production.