

# Preface

The current special topic edition presents to readers the latest research results in the synthesis, properties research and processing technologies investigation for a wide range of modern functional and structural materials.

Properties and synthesis technologies of multifunctional and highly specialised nanomaterials and nanoparticles that can be used starting from biosensing and as a photocatalyst for water and wastewater treatment are investigated in the first chapter.

The second chapter is devoted to modern composite materials. Analysis of mechanical properties of composites reinforced by bio-fibres is the mainstream of this publication part.

The third chapter proposes to pay attention to some research results in the area of mechanics of materials and tribology.

The last chapter of this issue describes the research results in surface engineering and the formation of specialised coatings. The chromium and zinc coatings, laser cladding, corrosion protection, and more are research topics here.

This specialised publication will be useful to many engineers and researchers from machinery, materials development and chemical production.