

# Preface

The presented special edition is dedicated to the latest research results in applied materials and their synthesis and processing technologies.

The first chapter includes articles related to analysing mechanical and tribological parameters of structural metals such as titanium, aluminium alloy, medical steel, etc. The thermal post-processing, multi-directional forging and turning operations are investigated here, too.

Mechanical parameters of 3D printed polymers and various reinforced composite materials, including graphene-based nanocomposites and basalt biocomposites, are investigated in the second chapter.

The last chapter is dedicated to various types of concrete being the main modern building material. Analysis of mechanical properties of concrete where the waste materials change the aggregate components, experimental investigation on the bacterial concrete as an innovative approach to a self-crack healing system, and study on the performance behaviour of fibre-reinforced foam concrete, etc., are the topics of this section.

The special edition will be helpful to specialists in machinery and construction.