

# Preface

This special edition includes articles on research results in materials science and materials processing technologies used in modern production.

The first two chapters investigate structural metals processing technologies, their wear resistance and their strength. The friction stir welding of dissimilar metals, analysis of the effect of process parameters in wire electrical discharge machining on the material removal rate and surface characteristics of titanium alloy, the failure probability of rolling equipment depending on the mechanical properties of the material, analysis of residual stresses for underwater wet welding of high strength steel, and more are presented in these parts of the publication.

The powder metallurgy technologies and the properties of materials obtained with their help are investigated and analysed in chapter three.

The next chapter is devoted to analysing the synthesis processes, properties and some methods of applications of iron oxide and ferrites.

Chapter five introduces to readers' attention the research results of properties of various composite materials. The analysed composites are widely used in machinery, buildings and shipbuilding.

The last chapter collects articles on the research on the properties of materials and analysis of features of special technologies used in the oil and gas industry.

This specialised edition will be helpful to many engineers and researchers whose activities are related to industrial production.