

## Preface

The presented special edition contains a series of articles investigating the latest issues of modern materials science and materials synthesis and processing technologies.

Modern structural metal materials - steel and alloys, their structural and mechanical properties and some processing technologies - electronic discharge machining, laser beam machining, etc. and special protective coatings and corrosion behaviour research are the topics of articles collected in the first two chapters.

The third chapter contains some research results on functional nanomaterials' properties and synthesis procedures - layered semiconductor nanostructures and hexagonal ferrites.

The last two parts of this issue are devoted to an analysis of the properties and application features of reinforced earth blocks and concrete elements, geopolymer concrete mixes with included steel crimped fibres and technology of bio-waste processing into biochar with metallic incorporation for the volume's increasing of micropores.

This special edition will be helpful to specialists in materials science, machinery, nanomaterials synthesis, construction and chemical production.