

## Preface

This special edition presents readers with the results of cutting-edge research and engineering solutions in materials science and processing technologies, which play an essential role in modern manufacturing development.

The first chapter focuses on innovative materials that ensure the efficiency of energy storage and energy conversion devices. It examines materials for applications in supercapacitors, electrodes, and photovoltaics.

The second chapter delves into some important issues of welding processes, highlighting advancements in technologies that enhance the integrity and performance of welded joints. Welding remains essential to industries such as automotive, aerospace, and construction, where durability and precision are paramount.

Articles from the third chapter address the field of additive manufacturing, more precisely post-processing steps that ensure functional and aesthetic quality in 3D-printed parts. This chapter explores methods that improve printed parts' surface quality and mechanical properties, allowing additively manufactured components to meet industrial standards.

This special edition will be helpful to researchers and engineers in materials engineering and manufacturing technologies.