Preface

The combination of processes for researching properties of existing and creating new materials simultaneously with the development of technologies plays a critical role in addressing the complex demands of modern society, increasing the effectiveness of industrial production.

This special edition presents a collection of research results in materials and materials processing technologies. The edition is organised into four chapters, each focusing on a vital area of study:

1. Materials and Technologies for Biomedical Applications.

This chapter examines the phytochemical characterization of *Ochna integerrima* roots and their *in vitro* anti-tyrosinase properties, the effect of starch-based adhesives in the production of plaster casts from industrial waste and techno-economic analysis of preferences of additive manufacturing of the finger casts.

2. Membranes and Membrane Technologies.

The second chapter highlights advancements in membrane design and synthesis, and their application in water purification and wastewater treatment. These technologies underscore the role of materials science in addressing environmental challenges.

3. Functional and Special Materials.

This chapter delves into materials with unique properties and functionalities tailored for specific applications. Covering topics such as the development of structural stealth material for electromagnetic wave absorption and the three-period minimal surface metal porous structure for multifunctional applications, etc., the investigations presented here reflect the wide functionality of materials engineering.

4. Building Materials and Structures.

The final chapter focuses on the construction industry, showcasing sustainable and efficient solutions in the development of building materials and construction technologies aimed at enhancing durability, safety, and environmental performance.

We hope that this special edition will serve as a meaningful resource for academics, professionals, and students, fostering new ideas and advancements across the mentioned dynamic fields of study.