Preface

This special edition explores three significant domains in materials science: ceramics for electrical and electronic systems, functional materials, and lubricants for mechanical engineering and materials machining and forming. This edition aims to provide a comprehensive overview of these critical areas, offering valuable insights for researchers, industry professionals, and students.

"Chapter 1: Ceramics" delves into the dielectric properties, manufacturing techniques, and applications of ceramic materials for microwave communication and energy storage.

"Chapter 2: Functional Materials" examines the materials designed for specific applications, such as silver nanoparticles for thermal management in electronic systems, green synthesised nickel-cobalt coatings for functional application, and the investigation of green concrete properties with coarse recycled aggregates. The discussion highlights the synthesis, characterisation, and applications of these materials in cutting-edge technological advancements.

"Chapter 3: Lubricants" focuses on the development of lubrication, exploring different types of lubricants, their properties, and their significance in reducing friction and wear in various mechanical systems. This chapter provides an overview of conventional and emerging lubricant technologies, with an emphasis on sustainability and efficiency in industrial applications.

This special edition will serve as a valuable resource for practical specialists and inspire researchers to further exploration and technological innovations in these fields of materials science.