Preface

This special edition presents the results of cutting-edge research across diverse fields of material science and engineering, highlighting advances that are shaping modern industries.

Chapter 1, Mechanics of Composite Materials, analyses the structural behaviours and mechanics of composite materials, emphasizing their strength, flexibility, and lightweight properties that make them indispensable in aerospace, automotive, and civil engineering.

Chapter 2, Materials and Technologies in Microelectronics, examines the critical materials and processes used in microelectronics, focusing on innovations that enable more efficient electronic devices essential to the digital age.

Chapter 3, Friction Stir Welding, explores this unconventional and perspective welding technique which allows for strong, defect-free joints in metals and dissimilar materials - a method highly valued in manufacturing sectors where durability and precision are paramount.

Finally, Chapter 4, Green Concrete, addresses the shift toward sustainable construction materials, investigating the development and applications of eco-friendly concrete alternatives that reduce environmental impact while maintaining structural integrity.

This special edition will be helpful to a wide range of engineers and researchers.