Preface

Nowadays, additive manufacturing (AM) and subtractive manufacturing (SM) offer numerous advantages in the production of single and multiple components, offering incomparable design independence with the facility to manufacture components from a wide range of materials, polymers, metals, composites, and so on. AM and SM are used to fabricate products in several industries: aeronautic, automotive, biomedical, and others. Therefore, the progress in AM and SM is very important for the modern industry.

This volume aims at providing recent information on progress on advances in additive and subtractive technologies in nine chapters. Chapter 1 of this book provides information on emerging trends in AM and SM. Chapter 2 is dedicated to the fused deposition modeling using polylactic acid (PLA), thereby improving the performance (state of the art). Chapter 3 describes the development of the basic drill design for cored holes in AM and SM. Chapter 4 contains information on AM of magnesium alloys. Chapter 5 is dedicated to AM for patient-specific medical use. Chapter 6 describes stereolithography and its applications. Chapter 7 contains information on ultrasonic-assisted deep-hole drilling. Finally, Chapter 8 contains information on information and computational modeling for sustainability evaluation and improvement of manufacturing processes.

This volume can be used as a research book for final undergraduate engineering course or as a topic on AM and SM at the postgraduate level. Also, this volume can serve as a useful reference for academics, researchers, mechanical, materials, production and industrial engineers, and professionals in AM and SM and related industries. The scientific interest in this book is evident for many important centers of the research, laboratories, and universities as well as for industry.

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