Preface

The advancement of manufacturing and achievements in materials engineering have significantly shaped modern industries, enabling innovation, efficiency, and sustainability. This special edition is dedicated to essential topics in the development and modification of advanced manufacturing processes and materials that drive industrial progress.

The first chapter, "Cutting and Drilling Technologies", delves into precision machining methods used across various sectors, including aerospace and automotive. Both traditional and modern techniques are highlighted, offering insights into tool selection, process optimization, and efficiency improvements.

The second chapter, "Additive Manufacturing", explores some layer-by-layer manufacturing approaches. It discusses various additive manufacturing techniques such as wire arc additive manufacturing, selective laser melting and fused deposition modelling.

The third chapter, "Corrosion Protection", addresses the challenges associated with reinforced concrete structures degradation and preventive strategies based on the modelling of corrosive processes.

Finally, the fourth chapter, "Waste Treatment", focuses on sustainable practices for managing industrial waste. This section provides an overview of some waste reduction, recycling techniques, and emerging technologies aimed at minimizing environmental impact while improving resource efficiency.

The special edition will serve as a valuable resource for engineers, researchers, and students seeking to understand and apply modern manufacturing and ecology protection techniques.