



# **GREEN AND SUSTAINABLE MANUFACTURING OF ADVANCED MATERIALS**

**EDITED BY**

**MRITYUNJAY SINGH  
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# Green and Sustainable Manufacturing of Advanced Materials

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**Mrityunjay Singh**

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# **Green and Sustainable Manufacturing of Advanced Materials**

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# Preface

Over the past several years, sustainability has emerged as a recurring theme that is increasingly recognized as pervading every sphere of human activity. The interdependence of life and the ecosystem in which it resides has begun to drive the need for sustainable growth and development. Perhaps nowhere does the power of sustainability manifest itself more exquisitely than in the development of new materials and manufacturing technology. Future progress in these areas will critically depend on our engagement with sustainable practices in research and technology development.

Materials and manufacturing processes constitute a huge segment of global economy. It is thus fitting and proper that current industrial practices and new developments in materials and manufacturing technology orchestrate with the natural capacity of ecosystems. This demands global efforts to conserve energy and materials, as well as a focus on recovery, recycling, and reuse in an environmentally conscious manner. The integration of green practices is crucial to sustain long-term technological development and the economic competitiveness of modern society as well as future generations.

This book addresses green and sustainable practices by focusing on specific classes of materials. The authors are all active and recognized researchers and practitioners in their respective fields and represent universities, industry, and government and private research organizations of eight different nations. We hope that the book offers a vision for future developments and stimulates fresh thinking to integrate green and sustainable practices in diverse materials and manufacturing processes. We also hope that the book meets the educational and research needs of advanced students across multiple academic disciplines. We are grateful to all of our revered authors for their valuable contributions. We thank the publication and editorial staff of Elsevier for their excellent support during the preparation of this book.

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