

Circular Bioeconomy

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Editors

Circular Bioeconomy

Towards a Sustainable Future

 Springer

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Preface

The concept of circular bioeconomy signifies a fundamental change in the way we view and utilise our natural resources. This book explores the intertwined fields of biology, chemistry, economics, and technology, all of which come together to reset how we think about production, consumption, and waste. The urgency to address climate change, resource depletion, and environmental degradation forces us to reconsider conventional linear models of extraction, use, and disposal. Circular bioeconomy, a regenerative system that manages biological resources sustainably and cycles them back and forth in a closed-loop cycle, offers an alternative to the traditional route. As a result, ecosystems are restored, waste is turned into a useful input, and communities live in a sustainable environment.

This book explores the multifaceted dimensions of the circular bioeconomy, which is presented in twelve (12) chapters, focussed on five (5) sections, namely, Biomaterials, Environment, Energy, Pharmaceutical, and Enzyme Technology. It portrays some of the areas of research which have been conducted or being conducted by our research members, linking circular bioeconomy to many of the United Nation's Sustainable Development Goals (SDGs). Each chapter dives into important facets of this paradigm shift, ranging from the basic ideas of biological processes and ecosystem dynamics to the state-of-the-art technology and methods, allowing bio-based advancements.

It is important to emphasise that circular bioeconomy is the viable path towards sustainability, rather than just a theoretical concept. In order to realise its potential, joint actions from various stakeholders; scientists, engineers, entrepreneurs, policy-makers, and citizens are needed from a variety of disciplines and sectors. Through the chapters, we invite all readers to embark on a journey to discover the prospect of circular bioeconomy through its application in various areas and industries. This book will provide the opportunity for all readers to delve into the true potential of circular bioeconomy, towards a sustainable future.

Selangor, Malaysia
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Fazia Adyani Ahmad Fuad
Chief Editor

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