

Encyclopedia of Sustainable Technologies 2nd Edition

永續科技百科全書, 第二版

A unique, comprehensive resource on sustainable technologies, which starts from systems-level analysis to explain the impact of products and processes on our society and the environment.

雖然技術進步帶來了經濟成長的社會效益，但它也帶來了對環境或人類健康影響的挑戰。永續發展尋求一種統一的方法來比較與實施新技術相關的經濟效益與環境和健康成本。

這本修訂後的百科全書調查了一系列行業的可持續發展舉措，提供了對未來技術發展機會的洞察。自第一版出版以來，人類面臨的廣泛挑戰只會變得更加激烈。例如，目前在全球觀察到氣候變遷是大規模天氣事件的促成因素，包括澳洲的極端乾旱、加州的強烈野火以及非洲、北美和南美大河沿岸的洪水。亞馬遜雨林的土地被毀壞，以提供更多的耕地，從而加劇了氣候變遷。在化學加工中擴大使用生物質作為原料會導致糧食短缺。在許多情況下，這些挑戰對最貧窮的國家影響最大，污染最嚴重的製造設施位於最貧窮的社區，這反映了社會正義的挑戰。

永續科技百科全書，四卷集，全面分析了現代技術的挑戰，以及在我們學習適應不斷變化的世界時更好地利用有限資源和提高彈性的創新。每一章都深入研究了支持特定人類需求的技術解決方案，評估其對環境和人類健康的影響，並考慮其發展背後的社會正義問題。

新版本提供了製造與氣候變遷之間更緊密的聯繫，更新了能源產生、分配和儲存的新技術，改變了製造和化學工藝的彈性和模組化新概念，並強調了獲得新能源所需的權衡。



Key features/ benefits

- A comprehensive resource to understand the relationship between economic opportunity, environmental impact and social justice, allowing the reader to weigh the trade-offs associated with the implementation of technological solutions.
- A systems analysis approach provides deeper understanding of the impacts of technology on the world, ecology, and human health.
- Expands the previous edition with significant updates and new focus on climate change, resiliency and modularity, artificial intelligence and computing.
- Each chapter examines a technological solution guiding the reader with consistent format and language, bridging the gap between specialities.

- 一個了解經濟機會、環境影響和社會正義之間關係的綜合資源，讓讀者能夠權衡與實施技術解決方案相關的權衡
- 系統分析方法可以更深入地了解科技對世界、生態和人類健康的影響
- 對上一版本進行了擴展，進行了重大更新，並新關注氣候變遷、彈性和模組化、人工智慧和運算
- 每一章都探討了一種技術解決方案，以一致的格式和語言指導讀者，彌合專業之間的差距

What problem does this MRW solve?

Sustainability is a multidisciplinary field, but many sources are discipline specific. Information is often fragmented and too specialized for people who are not already familiar with a certain area. This title unifies such information in a consistent and accessible format, allowing people who are not already familiar with a topic to quickly ramp their knowledge with high quality, reliable information.

Meet the Editors-in-Chief

- Editor-in-Chief: Prof. Martin Abraham, Ph.D., State University of New York Brockport, USA
- Plus an international and highly qualified editorial board: Kathleen Aviso, Wu Deng, Vladimir Strezov, Grace Ding, Marta Panero, Ziqian Dong, Jinsong Wu

Important Areas of Coverage:

- System Analysis and LCA
- Sustainable Built Environment
- Sustainable Energy Technologies
- Sustainable Food and Water
- Sustainable Digital Technologies
- Sustainable Manufacturing



New or substantially revised areas in this edition include:

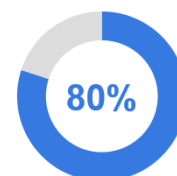
- New technologies for the generation, distribution and storage of energy
- New concepts in resiliency and modularity that have changed manufacturing and chemical processes
- Links between manufacturing and climate change



175
Chapters



>210
Authors/
contributors



80%
new or revised
articles

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Reference Collection: Earth Systems and Environmental Sciences

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