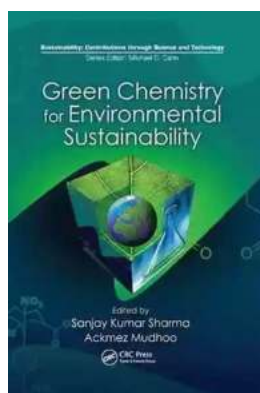
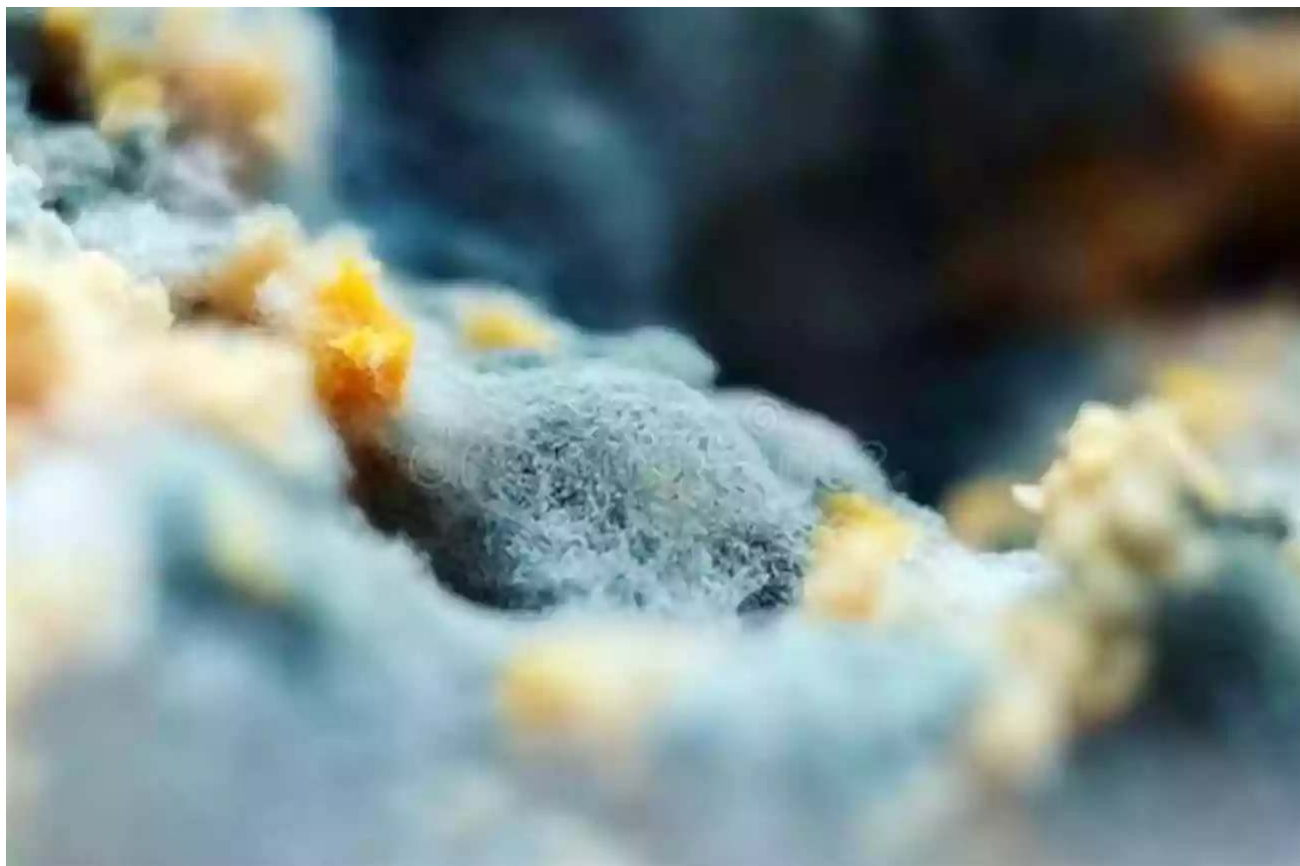


10 Groundbreaking Contributions Through Science And Technology That Changed the World



Science and technology have always been at the forefront of human advancement. From ancient civilizations to modern times, our ability to innovate and discover new things has shaped the world we live in today. In this article, we will explore 10 groundbreaking contributions through science and technology that have changed the world and continue to impact our lives.

1. The Discovery of Penicillin



Nanocellulose and Sustainability: Production, Properties, Applications, and Case Studies (Sustainability: Contributions through Science and Technology) by R.T.V. Fox(1st Edition, Kindle Edition)

★★★★☆ 4 out of 5

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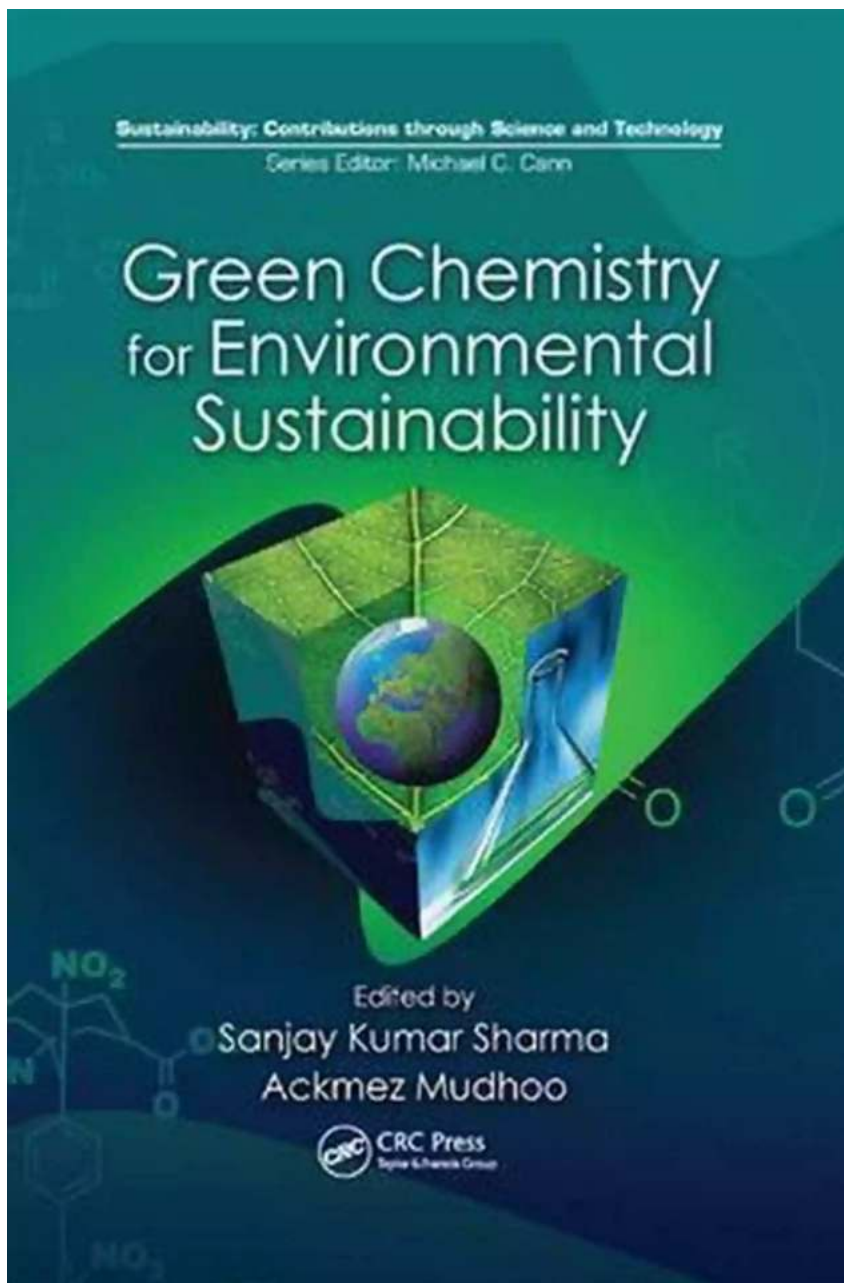
Print length : 314 pages



In 1928, Alexander Fleming discovered Penicillin, the world's first antibiotic. This breakthrough revolutionized medicine by providing an effective treatment for

bacterial infections. Since then, countless lives have been saved, and new antibiotics have been developed to combat evolving bacteria.

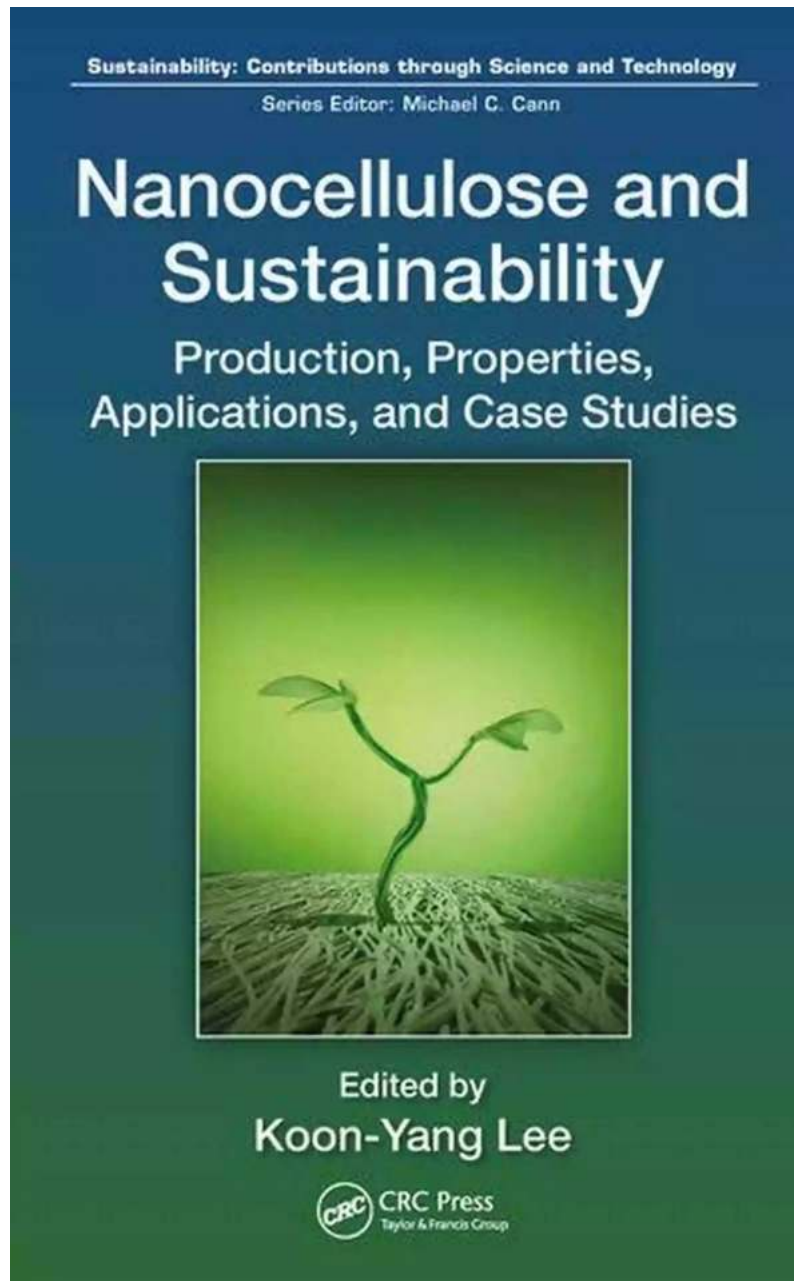
2. The Development of the Internet



In the late 20th century, the invention of the internet forever changed how we communicate and access information. It revolutionized industries, created new

economic opportunities, and transformed social interactions. The internet has brought the world closer together and paved the way for the digital age.

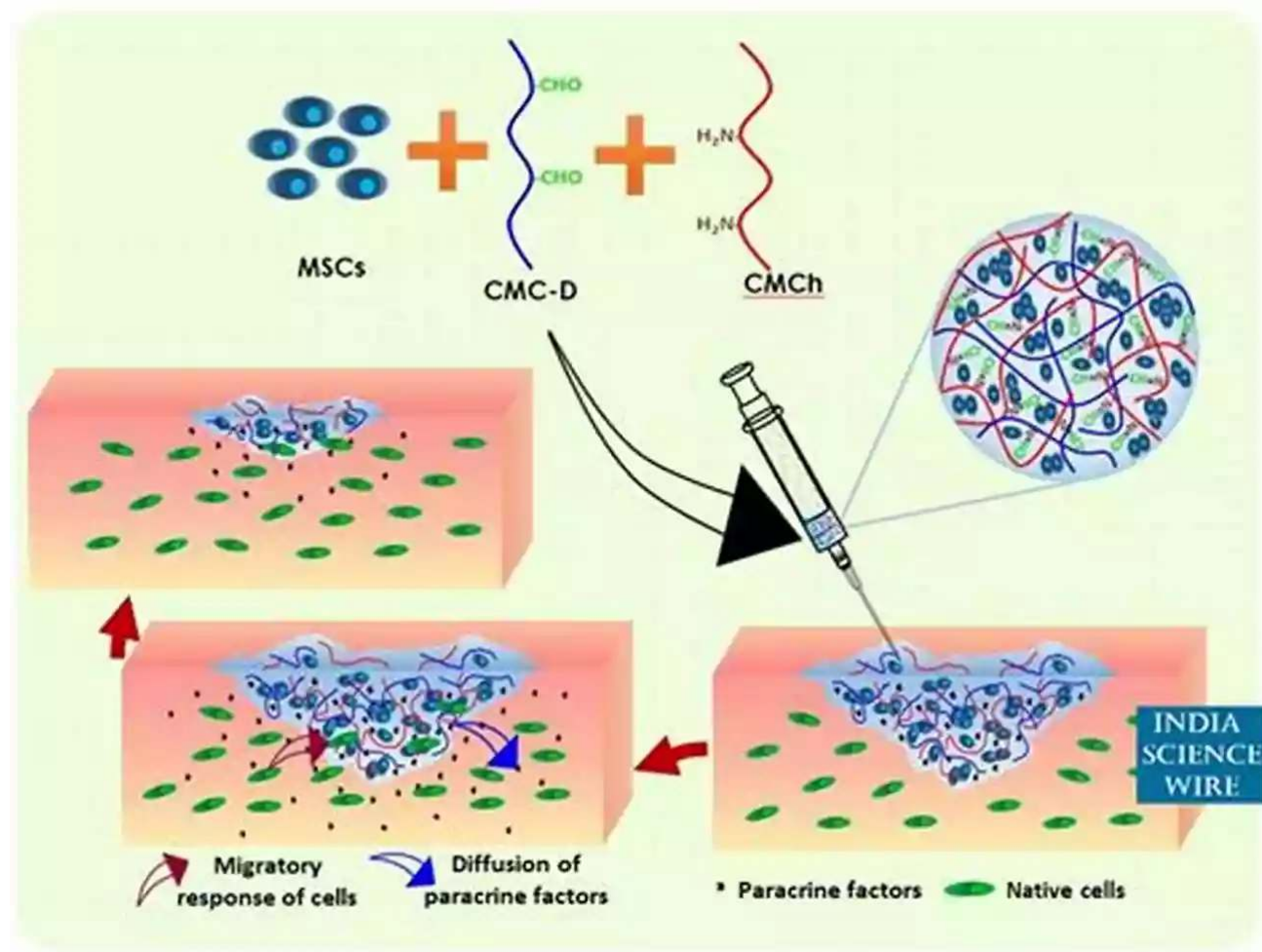
3. The Advancement of Renewable Energy



With the increasing concern over climate change, the development of renewable energy sources such as solar, wind, and hydroelectric power has become crucial.

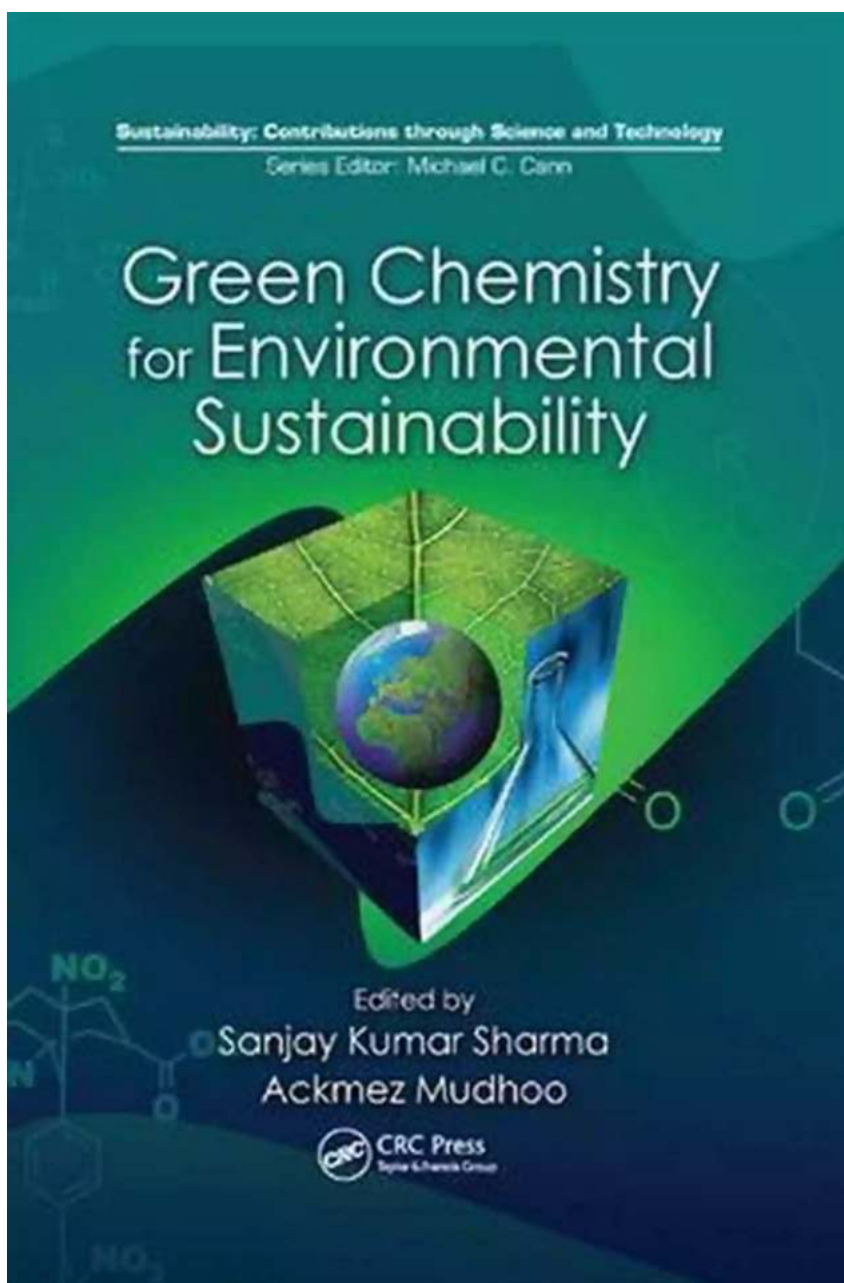
These technologies have allowed us to harness clean and sustainable energy, reducing our reliance on fossil fuels and mitigating the impact of global warming.

4. The Creation of Vaccines



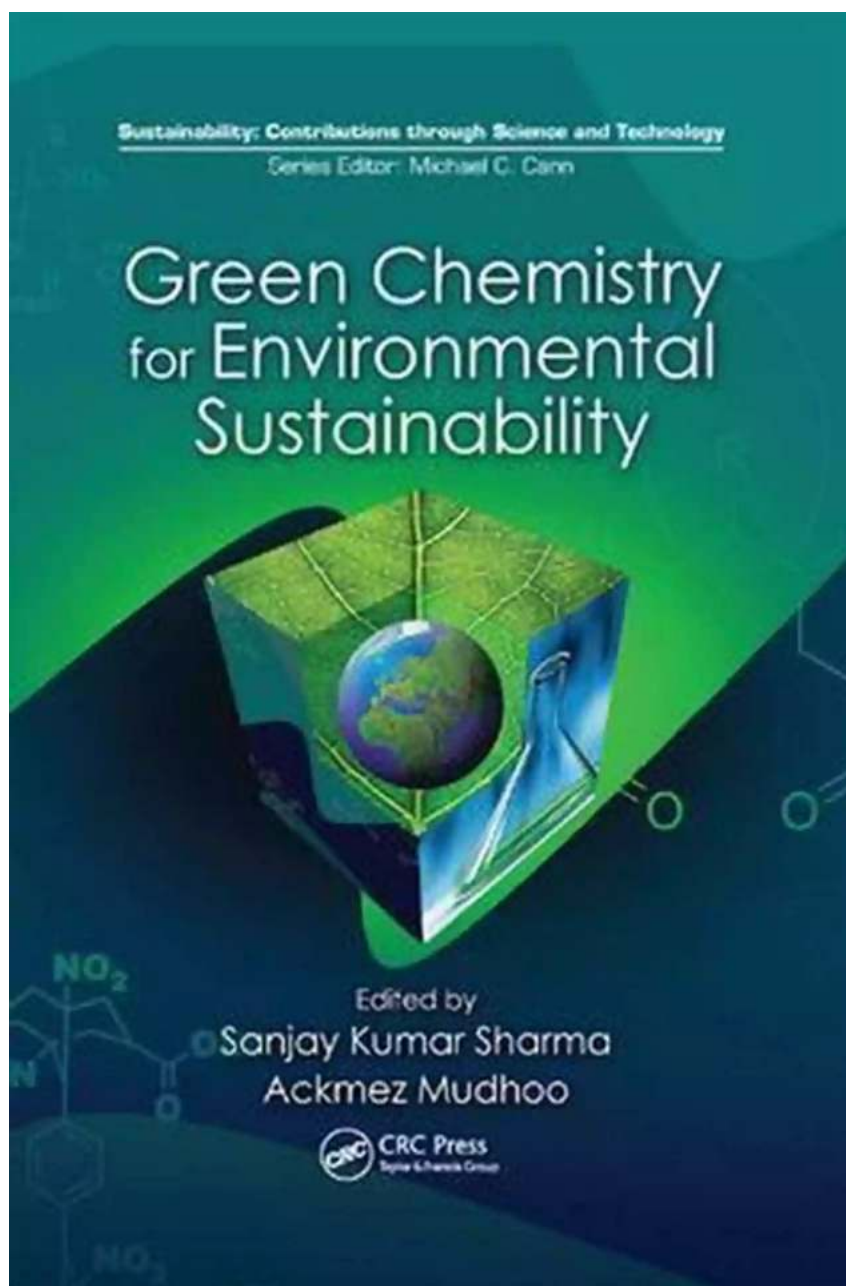
Vaccines have been instrumental in preventing and eradicating deadly diseases throughout history. Thanks to scientific advancements, vaccines have saved countless lives by providing immunity against illnesses such as polio, measles, and influenza. They have played a pivotal role in public health worldwide.

5. The Invention of the Printing Press



In the 15th century, Johannes Gutenberg revolutionized the world of communication with the invention of the printing press. This technology allowed for the mass production of books, making knowledge accessible to a wider audience. It influenced education, religion, and the spread of ideas, leading to significant cultural and societal changes.

6. The Development of Artificial Intelligence



Artificial Intelligence (AI) has become increasingly prevalent in various industries, from healthcare to transportation. AI-powered technologies have the ability to process vast amounts of data, analyze patterns, and make informed decisions. They have transformed the way we live and work, automating tasks, increasing efficiency, and paving the way for future innovations.

7. The Discovery of Radioactivity

Applications of Nanocellulose



Packaging¹



Oil and water separation²

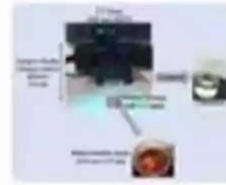
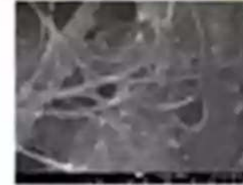


Photo catalyst³



Membrane⁴



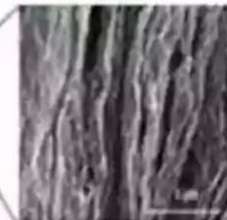
Gels for Biomedical Applications⁵



Nanocellulose-based composites⁶



Nanocomposites as High Performance Barrier⁷



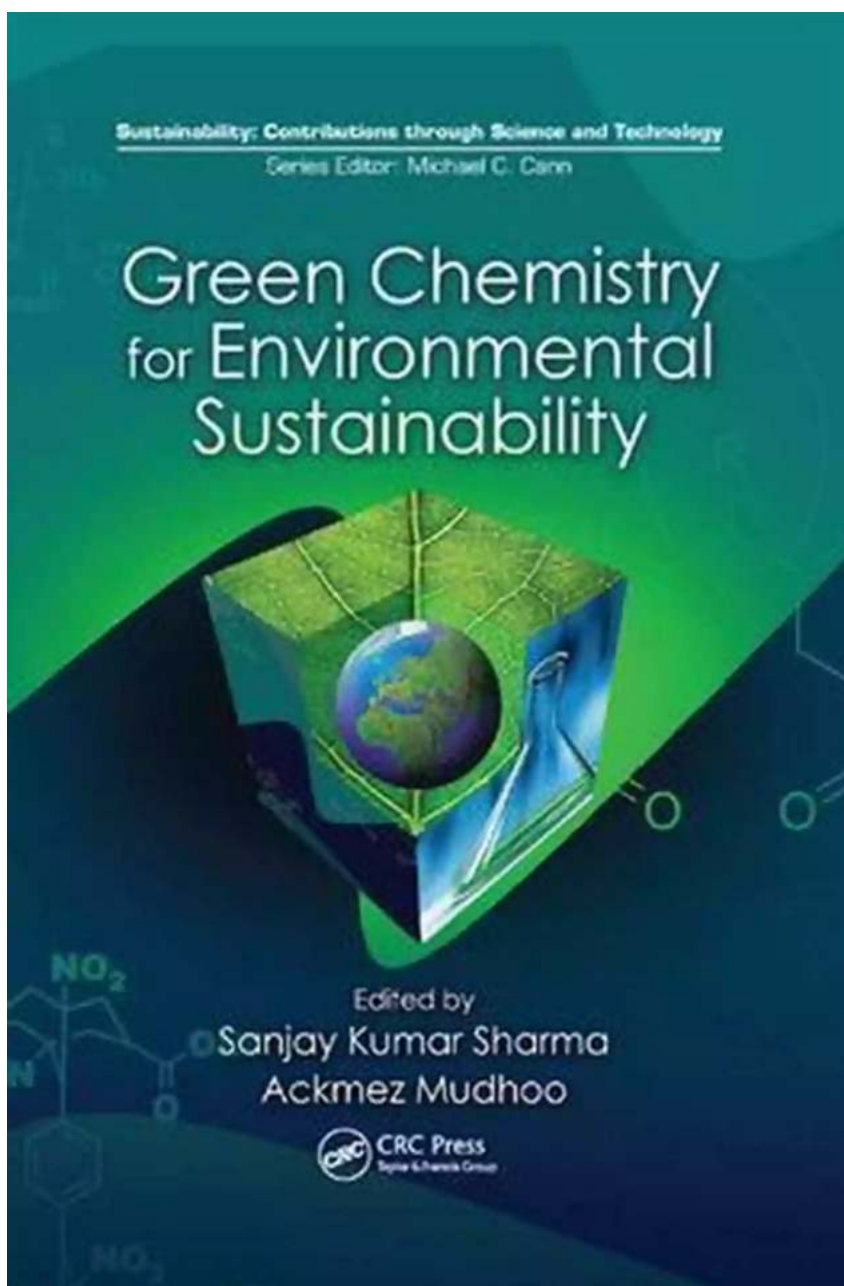
1. K. S. Hanuman et al., *Celulose*, 2012, 24, 2, 2669-2676
2. Z. He et al., *ACS Adv.*, 2016, 6, 2143B-2143B

3. U. M. Ganunghe et al., *Scientific Reports*, 8, 2304 (2018)
4. V. Saemthab et al., *Chemical Engineering Journal* 240(3) 2015

5. Mendes et al., *Colloid Interface Sci.*, 2018, 1509-81-86
7. U. M. Ganunghe et al., *Colloid and Surface A*, 562, 2018, 273-281.

In the late 19th century, Marie Curie discovered radioactivity, a groundbreaking scientific phenomenon. This discovery not only expanded our understanding of the atomic world but also led to the development of nuclear power and medical imaging techniques such as X-rays. It has had a profound impact on various scientific fields.

8. The Invention of the Telephone



Communication has always been a vital aspect of human interaction. In 1876, Alexander Graham Bell's invention of the telephone revolutionized long-distance communication, connecting people across vast distances. This groundbreaking technology paved the way for modern telecommunication systems and laid the foundation for our interconnected world.

9. The Advancement of Space Exploration

Sustainability: Contributions through Science and Technology

Series Editor: Michael C. Cann

Nanocellulose and Sustainability

Production, Properties,
Applications, and Case Studies



Edited by
Koon-Yang Lee

 CRC Press
Taylor & Francis Group

Humans have always been fascinated by the mysteries of the universe. Through breakthroughs in science and technology, we have been able to explore and understand outer space like never before. Space exploration has led to numerous discoveries, expanded our knowledge of the cosmos, and inspired further advancements in various scientific disciplines.

10. The Development of Genetic Engineering

Sustainability: Contributions through Science and Technology

Series Editor: Michael C. Cann

Nanocellulose and Sustainability

Production, Properties,
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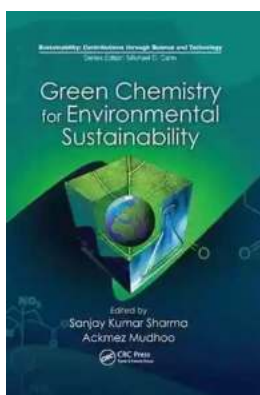


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Genetic engineering has opened up new possibilities in healthcare and agriculture. This technology allows scientists to manipulate the genetic makeup of organisms, leading to advances in disease treatment, crop production, and the overall understanding of life's building blocks. It has the potential to revolutionize various aspects of our lives in the future.

These 10 groundbreaking contributions through science and technology represent just a fraction of the countless advancements that have shaped our world. From life-saving medical discoveries to transformative inventions, the contributions made by scientists and innovators continue to drive progress and improve the lives of people worldwide.



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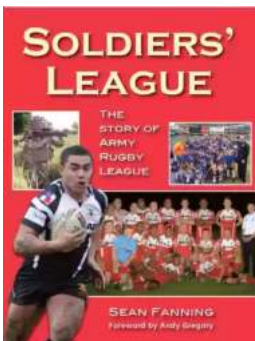


Nanometre scale cellulose fibres, or nanocellulose, are emerging materials for various advanced applications. Nanocellulose and Sustainability: Production, Properties, Applications, and Case Studies provides a comprehensive overview of nanocellulose production, nanocellulose properties and nanocellulose in selected applications. This book serves as an entry level reference text for undergraduates, graduate students, researchers and professional engineers working in the area of nanocellulose and sustainability.

Features:

- Summarises the surface and bulk properties of various types of nanocellulose

- Reviews the application of nanocellulose in water purification and optically transparent materials
- Provides an overview of nanocellulose as Pickering emulsifier, binder for loose natural fibres to produce non-woven preforms, as well as nanocellulose-based aerogels
- Presents a techno-economic analysis of industrial bacterial cellulose production
- Discusses the pilot scale production of cellulose nanocrystals



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