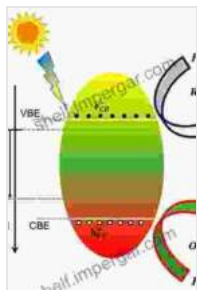


Semiconductor Photocatalysis: Principles and Applications – A Comprehensive Guide to the Future of Environmental and Energy Solutions



Semiconductor Photocatalysis: Principles and Applications by Horst Kisch

★★★★☆ 4.8 out of 5

Language : English

File size : 8703 KB

Text-to-Speech : Enabled

Enhanced typesetting : Enabled

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Screen Reader : Supported

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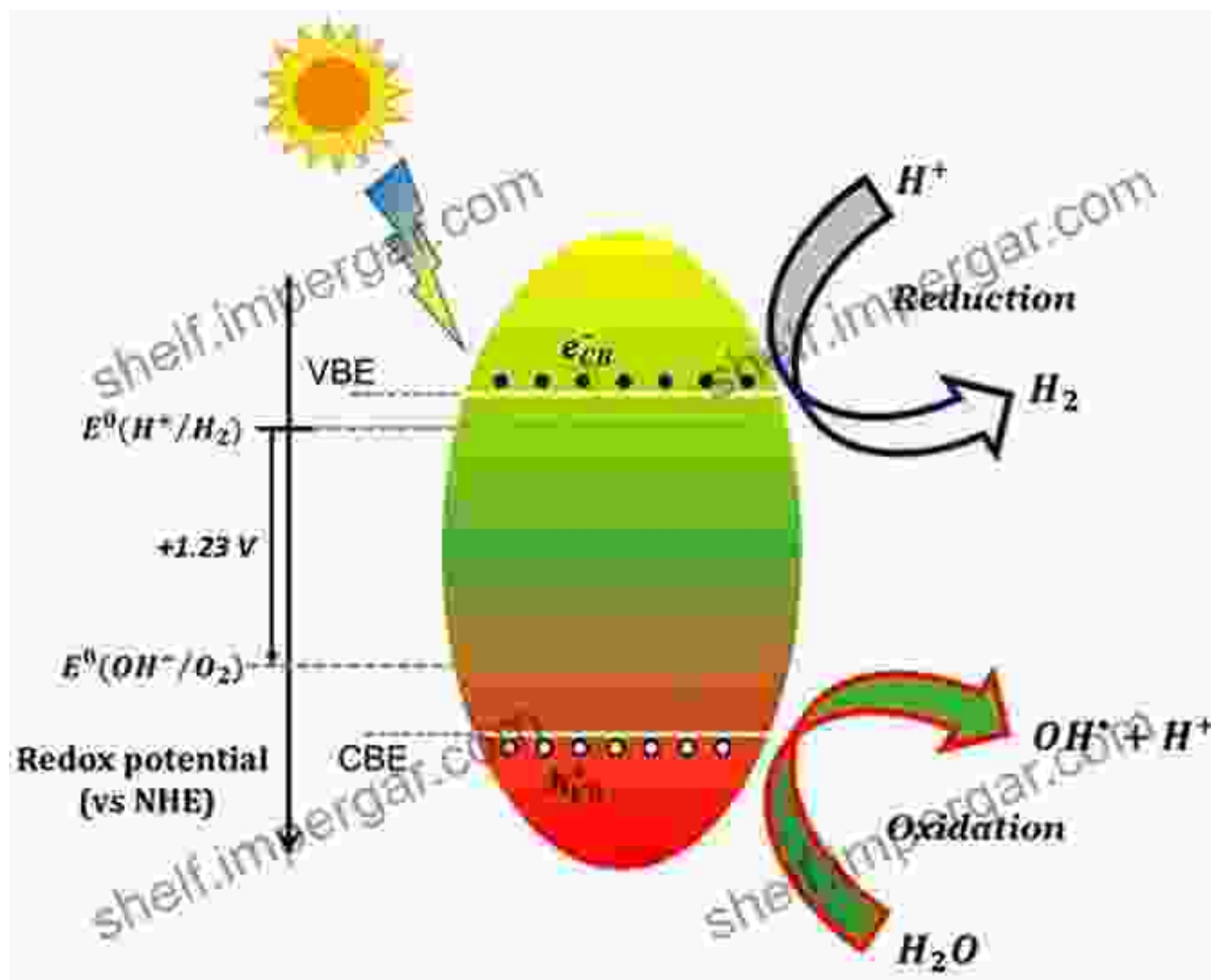
In an era marked by pressing environmental challenges and an urgent need for clean energy sources, semiconductor photocatalysis has emerged as a revolutionary technology with the potential to transform industries and address some of the most critical issues facing our planet.

Semiconductor Photocatalysis: Principles and Applications is the definitive guide to this groundbreaking field. Written by leading experts, this comprehensive book provides a comprehensive overview of the principles, applications, and future prospects of semiconductor photocatalysis.

Chapter 1: Fundamentals of Semiconductor Photocatalysis

This chapter introduces the basic concepts of semiconductor photocatalysis, including the electronic structure of semiconductors, the

process of photoexcitation, and the generation of reactive species. Readers will gain a solid understanding of the fundamental principles that govern this technology.

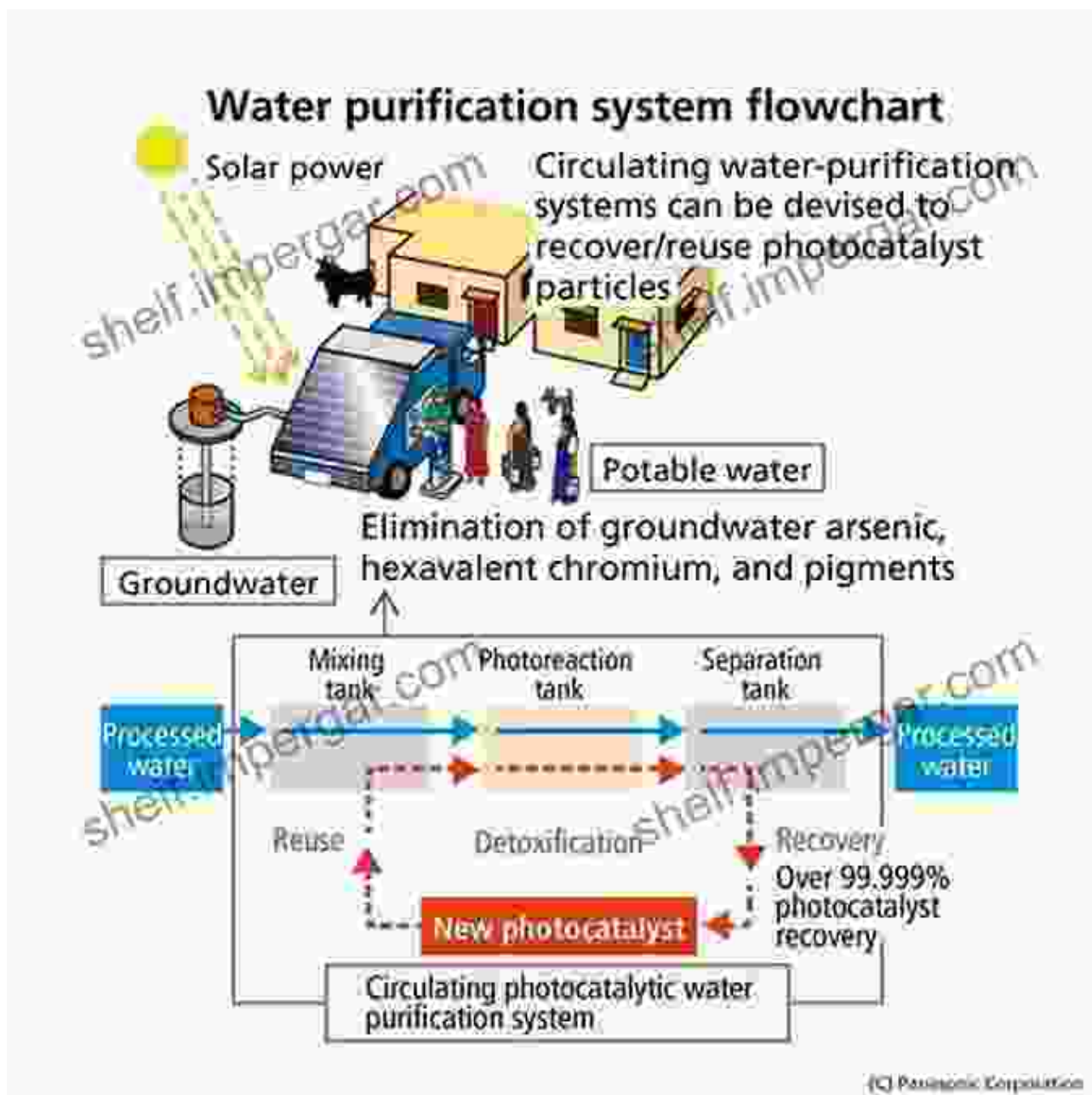


Chapter 2: Photocatalytic Materials

Chapter 2 delves into the various types of semiconductor materials used in photocatalysis, their properties, and their applications. Readers will learn about the advantages and limitations of different materials, enabling them to select the most appropriate semiconductor for their specific needs.

Chapter 3: Environmental Applications

Semiconductor photocatalysis has immense potential in environmental remediation. This chapter explores the use of photocatalysis for water treatment, air purification, and soil remediation. Readers will discover how this technology can effectively remove pollutants, disinfect water, and improve air quality.



Photocatalytic water treatment system using semiconductor photocatalysis

Chapter 4: Energy Applications

Beyond environmental applications, semiconductor photocatalysis is also a promising technology for energy production. This chapter covers the use of photocatalysis for solar energy conversion, hydrogen production, and carbon dioxide reduction. Readers will learn how this technology can help address the global energy crisis and promote sustainability.

Chapter 5: Advanced Applications and Future Prospects

Semiconductor photocatalysis is a rapidly evolving field with countless potential applications. This chapter explores emerging applications, such as photocatalytic sensors, biomedical applications, and self-cleaning surfaces. Readers will gain insights into the cutting-edge advancements and future directions of this transformative technology.

Semiconductor Photocatalysis: Principles and Applications is an essential resource for researchers, scientists, engineers, and anyone interested in the transformative power of this technology. With its comprehensive coverage, in-depth explanations, and up-to-date information, this book provides the knowledge and tools necessary to harness the full potential of semiconductor photocatalysis for solving the challenges of our time and creating a more sustainable future.

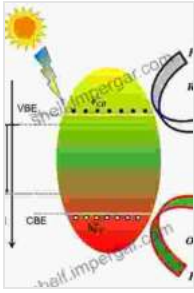
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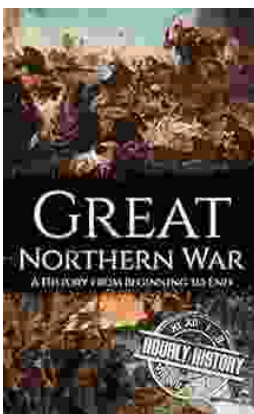


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