

1. Record Nr.	UNISA996426330203316
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Titolo	Heterogeneous nanocomposite-photocatalysis for water purification // Rajendra C. Pawar and Caroline Sunyong Lee
Pubbl/distr/stampa	Amsterdam, Netherlands : , : Elsevier, , 2015 ©2015
ISBN	0-323-39310-1
Descrizione fisica	1 online resource (113 p.)
Collana	Micro & Nano Technologies series Heterogeneous nanocomposite-photocatalysis for water purification
Disciplina	628.162
Soggetti	Water - Purification - Photocatalysis Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	<p>""Front Cover""; ""Heterogeneous Nanocomposite-Photocatalysis for Water Purification""; ""Copyright Page""; ""Dedication""; ""Contents""; ""Preface""; ""Acknowledgments""; ""1 Basics of Photocatalysis""; ""1.1 Introduction of Heterogeneous Photocatalysis""; ""1.2 Principles and Mechanism of Heterogeneous Photocatalysis""; ""1.3 Semiconductor/Semiconductor Heterogeneous Photocatalysis""; ""1.4 Homojunction Photocatalysts (Same Material)""; ""1.5 Metal/Semiconductor (Schottky Junction)""; ""1.6 Photocatalytic Materials""; ""References""; ""2 Nanomaterial-Based Photocatalysis""</p> <p>""2.1 Introduction""""2.2 Properties of NsM""; ""2.2.1 Increase in Surface Area to Volume Ratio""; ""2.2.2 Quantum Confinement Effect""; ""2.2.3 Magnetic Effects""; ""2.3 Improved Performance with Nanostructured Photocatalysts""; ""2.4 Applications of Nanostructured Photocatalysts""; ""2.5 Conclusion""; ""References""; ""3 Heterogeneous Photocatalysts Based on Organic/Inorganic Semiconductor""; ""3.1 Introduction""; ""3.2 Binary Photocatalysts""; ""3.2.1 Sintering Assisted RGO/ZnO Composites for Water Purification Under UV Irradiation""; ""3.2.2 Preparation of RGO""</p> <p>""3.2.3 Preparation of RGO/ZnO Nanocomposites""""3.2.4 Photocatalytic Degradation of MB""; ""3.2.5 Analysis of RGO/ZnO Composites""; ""3.2.6 Possible Photocatalysis Mechanism""; ""3.2.7 Visible Light Active</p>

RGO/CdS Heterojunctions for Cr(VI) Reduction"; "3.2.8 RGO/CdS Fabrication"; "3.2.9 Analysis of RGO/CdS"; "3.2.10 Cr(VI) Reduction"; "3.2.11 Photoreduction Performance"; "3.3 Ternary Photocatalysts"; "3.3.1 Nanocomposites Based on RGO, CdS, and ZnO"; "3.3.2 Analysis of RGO, CdS, and ZnO Composites"; "3.3.3 Photocatalysis of RGO, CdS, and ZnO Composites"; "3.3.4 Possible Electron Transport Mechanism"; "3.4 Nanocomposites Based on RGO, CNTs, and Fe₂O₃"; "3.4.1 Preparation of Photocatalyst Powder"; "3.4.2 Analysis of MWCNT/RGO/Fe₂O₃ Composites"; "3.4.3 Photocatalytic Performance"; "3.4.4 Photocatalysis Mechanism"; "3.4.5 PEC Measurements"; "3.4.6 Nano-heterojunction of g-C₃N₄/CdS/RGO"; "3.4.7 Preparation of g-C₃N₄ Powder"; "3.4.8 Analysis of g-C₃N₄/CdS, g-C₃N₄/RGO, and g-C₃N₄/CdS/RGO Composites"; "3.4.9 Photocatalytic Degradation of RhB Under Visible Irradiation"; "3.4.10 Photocatalytic Degradation of RhB Under UV Irradiation"; "3.4.11 Photocatalytic Degradation of CR Under Visible Irradiation"; "3.4.12 Photocatalytic Degradation of CR Under UV Irradiation"; "3.4.13 Mechanism of Enhanced Photocatalysis"; "3.5 Conclusion"; "References"; "4 Conclusions and New Directions"; "4.1 Conclusions"; "4.2 New Directions"

Sommario/riassunto

In Heterogeneous Nanocomposite-Photocatalysis for Water Purification, the authors introduce various heterogeneous photocatalysts based on novel nanostructures of metal oxide semiconductors and graphene used for water purification, including TiO₂, Fe₂O₃, SnO₂, WO₃ and g-C₃N₄, and outlines their advantages and drawbacks. The nanocomposite-photocatalysts ZnO and CdS are compared with reduced graphene oxide (rGO), a rapidly growing materials system. The authors describe how the photocatalytic activity of known nanomaterials can be improved by modifying the structural and optical properties (i.e.,
