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Titolo	Nanostructured Photocatalysts : Advanced Functional Materials // edited by Hiromi Yamashita, Hexing Li
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Edizione	[1st ed. 2016.]
Descrizione fisica	1 online resource (XVII, 544 p. 297 illus., 163 illus. in color.)
Collana	Nanostructure Science and Technology, , 1571-5744
Disciplina	540
Soggetti	Nanochemistry Catalysis Energy harvesting Environmental chemistry Chemical engineering Inorganic chemistry Energy Harvesting Environmental Chemistry Industrial Chemistry/Chemical Engineering Inorganic Chemistry
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Synthesis of novel titania and its photocatalytic activity -- Preparation of controllable crystalline titania and study on the photocatalytic properties -- Controllable synthesis and photocatalytic activities of TiO <sub>2</sub> nanocrystals -- Nanostructured elemental photocatalysts: development and challenges -- Development of visible light responsive morphology controlled TiO <sub>2</sub> photocatalyst -- Development of advanced nanoarchitectures for photocatalytic treatment of NO <sub>x</sub> : challenges and prospects -- Preparation of TiO <sub>2</sub> nanotubes-based electrophotocatalysts and their application in organic pollutants oxidation -- Hollow core-shell titania photocatalysts for selective organic synthesis -- Design of film photocatalysts deposited on rotating disk for degradation of organic dyes in wastewater --

Photocatalyst prepared using ion beam -- F-doping on the photocatalytic activity and microstructures of nanocrystalline TiO<sub>2</sub> Powders -- Photocatalytic decomposition of NH<sub>3</sub> over Fe-doped TiO<sub>2</sub> prepared by solid-state impregnation -- Surface-functionalized TiO<sub>2</sub> photocatalyst -- Design of nanostructured thin film photocatalysts and their advanced functions -- Silica-supported TiO<sub>2</sub> photocatalyst supported on hydrophobic modified silica support -- Photodegradation of aromatic pollutants in water over TiO<sub>2</sub> supported on molecular sieves -- Layered double hydroxide photocatalysts for CO<sub>2</sub> conversion in H<sub>2</sub>O -- Plasmonic photocatalysts -- Bismuth containing complex oxides nano- and microstructures: shape control and associated visiblelightdriven photocatalytic activities -- Synthesis and Facet-dependent photocatalytic activity of layered BiOCl -- Synthesis of square Bi<sub>2</sub>WO<sub>6</sub> nanoplates as high-activity visible-light-driven photocatalysts -- Formation of novel BiOCl/Bi<sub>2</sub>O<sub>3</sub> and WO<sub>3</sub>/BiOCl/Bi<sub>2</sub>O<sub>3</sub> for efficient visible-light photocatalysis -- Visible light responsive photocatalysts and photoelectrodes using WO<sub>3</sub> semiconductor for degradation of various organic compounds and water splitting -- Z-scheme semiconductor photocatalytic systems -- Silica-supported metal complex photocatalyst -- Metal-organic-framework (MOF) and porous-coordination-polymer (PCP) based photocatalyst -- Photocatalytic CO<sub>2</sub> reduction to CO by ZIF-9/TiO<sub>2</sub> -- Nanometal loaded metal-organic-framework photocatalysts. .

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#### Sommario/riassunto

While books on semiconductor TiO<sub>2</sub> photocatalysis are legion, nanostructured controlled photocatalysts are attractive beyond standard semiconductors, and this book is devoted to the many novel uses of advanced TiO<sub>2</sub> and MOF-based photocatalysts. Details on synthesis, characterization, and reaction applications of nanostructured photocatalysts are summarized. Other new materials discussed in this book are Bi- W- oxides, metal complexes, and unique porous materials. This book contains methods of preparation and characterization of unique nanostructured photocatalysts, and details about their catalytic action. Contributors to this volume are leading Asian researchers in Photocatalysis. It will appeal to researchers wishing to know how to design new types of photocatalysts with controlled nanostructures.

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