A comprehensive and timely overview of this important and hot topic, with special emphasis placed on environmental applications and the potential for solar light harvesting.

Following introductory chapters on environmental photocatalysis, water splitting, and applications in synthetic chemistry, further chapters focus on the synthesis and design of photocatalysts, solar energy conversion, and such environmental aspects as the removal of water pollutants, photocatalytic conversion of CO2. Besides metal oxide-based photocatalysts, the authors cover other relevant material classes including carbon-based nanomaterials and novel hybrid materials. Chapters on mechanistic aspects, computational modeling of photocatalysis and Challenges and perspectives of solar reactor design for industrial applications complete this unique survey of the subject.

With its in-depth discussions ranging from a comprehensive understanding to the engineering of materials and applied devices, this is an invaluable resource for a range of disciplines.

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