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Special Issue Reprint

Visible Light Active Photocatalysts for Environmental Remediation and Organic Synthesis

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Edited by
Vincenzo Vaiano

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In recent years, the formulation of innovative photocatalysts activated by visible or solar light has been attracting increasing attention because of their notable potential for environmental remediation and use in organic synthesis reactions. Generally, the strategies for the development of visible-light-active photocatalysts are mainly focused on enhancing degradation efficiency (in the case of environmental remediation) or increasing selectivity toward the desired product (in the case of organic synthesis). These goals can be achieved by doping the semiconductor lattice with metal and/or non-metal elements in order to reduce band gap energy, thereby providing the semiconductor with the ability to absorb light at a wavelength higher than the UV range. Other interesting options are the formulation of different types of heterojunctions (to increase visible absorption properties and to reduce the recombination rate of charge carriers) and the development of innovative catalytic materials with semiconducting properties. This reprint is focused on visible-light-active photocatalysts for environmental remediation and organic synthesis, featuring the state of the art as well as advances in this field.



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