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## New Advanced Functional-Material-Based Photocatalysts

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### Message from the Guest Editors

Addressing the global challenges posed by the rapid increase in energy consumption and the environmental impact of conventional energy sources calls for innovative solutions. One highly promising avenue lies in the development of new advanced functional-material-based photocatalysts for harnessing solar energy and converting it into valuable chemical fuels such as methanol, methane, and hydrogen, utilizing sunlight, water, and CO<sub>2</sub> as primary resources. These advanced materials, characterized by their precisely engineered properties, are pivotal in catalyzing solar energy conversion processes and enabling the photodegradation of organic pollutants. This Special Issue is dedicated to providing a comprehensive overview of the latest breakthroughs in the realm of solar energy conversion and environmental remediation through the photodegradation of organic pollutants. The focus is on showcasing recent progress, with particular emphasis on the exceptional physicochemical properties of these cutting-edge nanomaterials and the underlying mechanisms that hold the potential to greatly enhance their efficiency in these critical applications.



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## Message from the Editor-in-Chief

Welcome to *Crystals*, the journal dedicated to the fascinating world of crystallographic research! Crystals are more than mere decorative elements; they hold the key to understanding the fundamental structure of matter. Our mission is to explore the crucial significance of this research across various fields. From medicine to technology, chemistry to geology, crystals play a vital role. Their structure provides insights into new advanced materials, innovative drugs, and groundbreaking technologies. Through *Crystals*, we delve into the microscopic world to discover solutions that will shape the future. Join us on a journey through the *Crystals*, where science merges with beauty and innovation.

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