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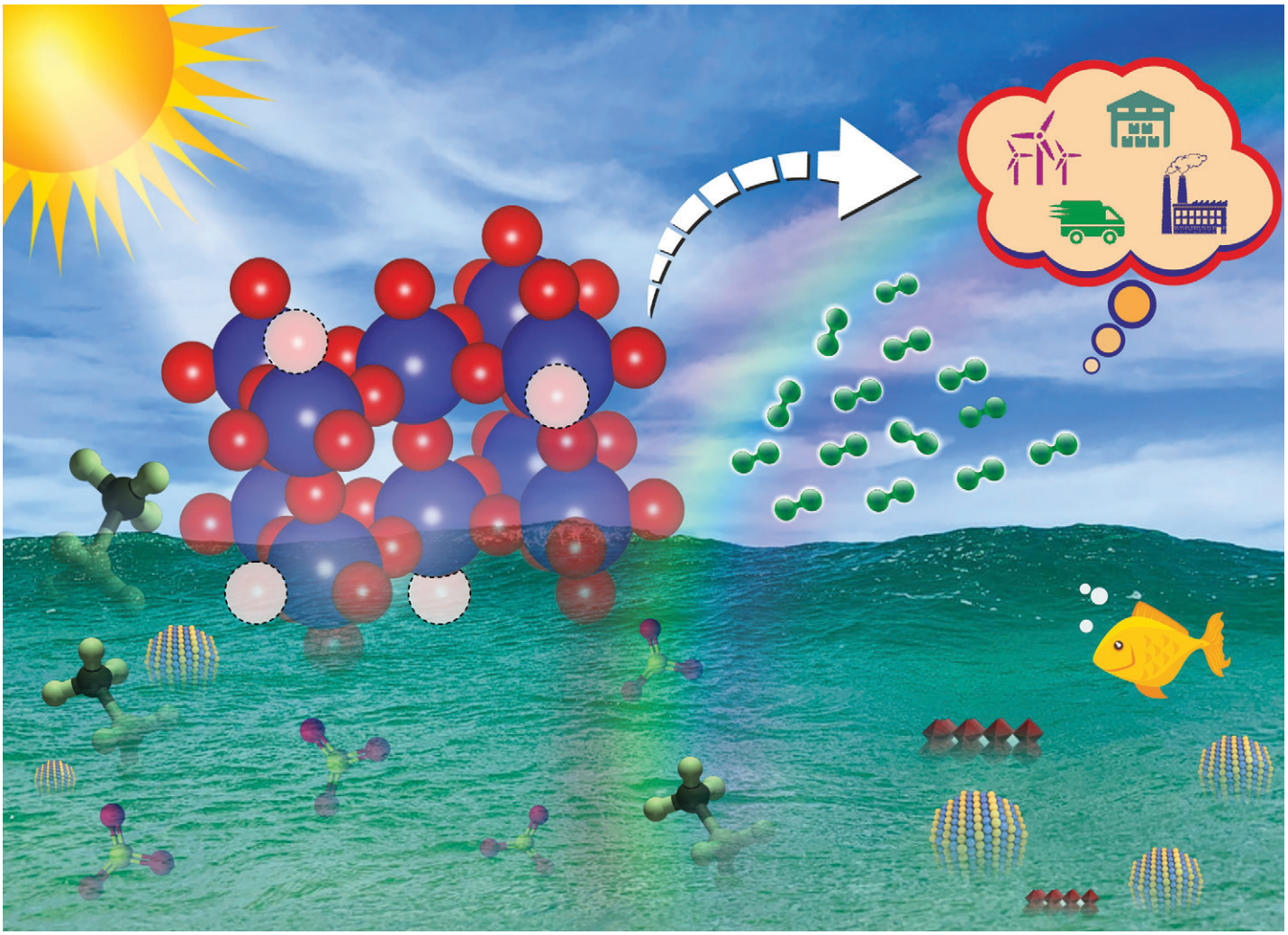
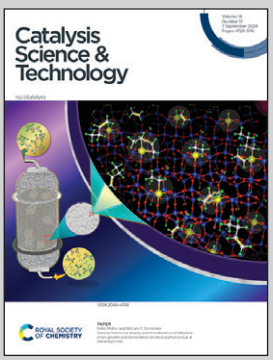


Showcasing research from Professor Priyanka Verma's laboratory, Department of Chemistry, Indian Institute of Technology Delhi, New Delhi, India.

Design, synthesis, and applications of plasmonic semiconductor WO_{3-x} photocatalyst

This article discusses numerous approaches to enhance plasmonic properties and various synthesis approaches of WO_{3-x} with their growth mechanism. This report further emphasizes recent developments in the applications of plasmonic semiconductor WO_{3-x} nanostructures in hydrogen generation from water splitting and ammonia borane, CO_2 reduction, organic transformations, and pollutant degradation under visible-NIR light irradiation. In addition, the mechanisms involved in enhancing the catalytic activity of WO_{3-x}-based materials towards various reactions are highlighted. The challenges and potential future directions have also been explored to advance plasmon-mediated heterogeneous catalysis toward practical applications.

As featured in:



See Hiromi Yamashita, Priyanka Verma *et al.*, *Catal. Sci. Technol.*, 2024, **14**, 4775.

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