Special Issue

New Monocrystal Catalysts and Complex Photocatalysts: Synthesis and Characterization

Message from the Guest Editor

This topic is for the preparation of new visible light-responsive photocatalysts which will be detected by all kinds of advanced experimental instruments, such as transmission electron microscope. Different preparation methods, such as the solvothermal method, will be utilized to prepare heterojunction photocatalysts, precious metal-doped composite and monocrystal photocatalysts. New photocatalysts will be used for the degradation of organic pollutants under visible light irradiation or under ultraviolet light illumination. The removal rate of poisonous organic pollutants and the removal rates of the total organic carbon will be analyzed and arranged. The intermediate product during photocatalytic degradation poisonous organic pollutants will be investigated. The degradation pathways of poisonous organic pollutants such as pentachlorophenol will be provided. The degradation mechanism using hydroxyl radical, superoxide anion and photoinduced holes will be revealed. Hydrogen production via water splitting will be realized by using new monocrystal photocatalysts or heterojunction photocatalysts under visible light irradiation or under ultraviolet light illumination.

Guest Editor

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