

NOVEL METAL OXIDE PHOTOCATALYST FOR PRODUCTION OF HYDREGEN

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The decomposition of hydrogen sulfide has attained a lot of significance due to environmental problem. The Claus process is the most popular process that currently used for the hydrogen sulfide decomposition. The conventional Claus process is involved the synproportionation reaction between H_2S and SO_2 yielding elemental sulfur and water vapor. Two hydrogens in H_2S are wasted to make H_2O . If we could recover hydrogen from H_2S , instead of oxidizing it into H_2O (Claus process), immense amount of hydrogen could be produced. Photocleavage of the H_2S to H_2 by semiconductor particle photocatalyst has been considered as a process that ultimately converts solar energy into fuels. Of late, development of photocatalyst for photodecomposition of hydrogen sulfide and water into hydrogen has been a subject matter of immense interest owing to the energy and pollution abatement.

In view of this, we have investigated novel photocatalyst, $ZnBiVO_4$ for photodecomposition of H_2S for the first time. The structural and morphological study was carried out using XRD and FESEM. The influence of preparation method on the activity of the photocatalyst was investigated. The novelty in synthesis of new product, its characterization and photocatalytic activity will be discussed

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