

Accepted Manuscript

Title: Hydrothermal synthesis of BiVO₄/TiO₂ composites and their application for degradation of gaseous benzene under visible light irradiation

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PII: S0169-4332(17)33641-3
DOI: <https://doi.org/10.1016/j.apsusc.2017.12.054>
Reference: APSUSC 37924

To appear in: *APSUSC*

Received date: 6-9-2017
Revised date: 3-12-2017
Accepted date: 7-12-2017

Please cite this article as: Hu Y, Chen W, Jianping F, Ba M, Sun F, Zhang P, Zou J, Hydrothermal synthesis of BiVO₄/TiO₂ composites and their application for degradation of gaseous benzene under visible light irradiation, *Applied Surface Science* (2010), <https://doi.org/10.1016/j.apsusc.2017.12.054>

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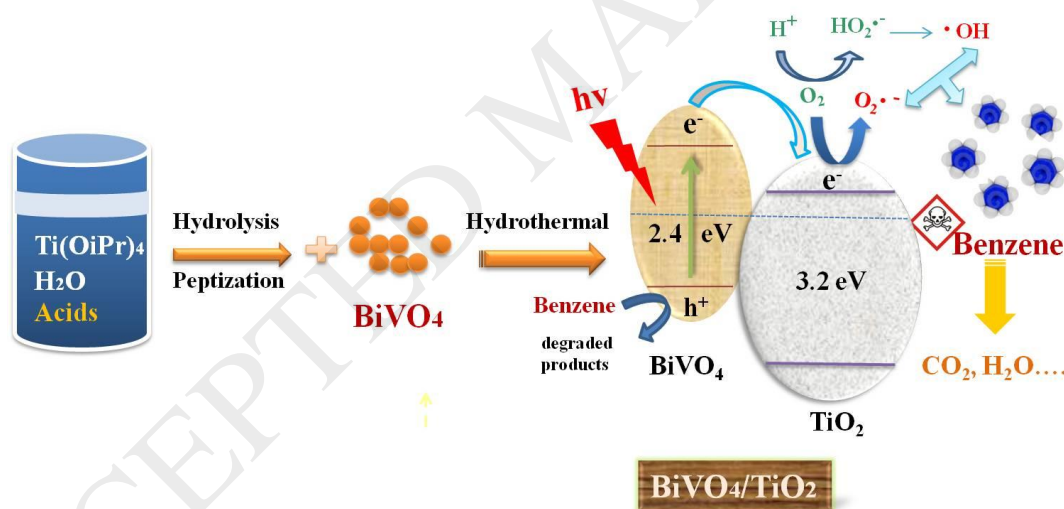
Hydrothermal synthesis of $\text{BiVO}_4/\text{TiO}_2$ composites and their application for degradation of gaseous benzene under visible light irradiation

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Graphical Abstract



$\text{BiVO}_4/\text{TiO}_2$ has been synthesized via a sol-gel method and a facile hydrothermal route by adjusting the precursor hydrolysis rate with the use of different acids (CH_3COOH , HNO_3 and H_2SO_4). The influence of these acids on the physicochemical characteristics and photocatalytic performance is investigated. $\text{BiVO}_4/\text{TiO}_2$ synthesized in CH_3COOH has better photocatalytic activity for the degradation of gaseous benzene than that in HNO_3 and H_2SO_4 under visible light irradiation. Results of XPS measurement demonstrate that more active hydroxyl groups in $\text{BiVO}_4/\text{TiO}_2\text{-CH}_3\text{COOH}$ could lead to higher photocatalytic activity.

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