## Accepted Manuscript

Title: Three narrow band-gap semiconductors modified Z-scheme photocatalysts,  $Er^{3+}$ :  $Y_3Al_5O_{12}$ @NiGa $_2O_4$ /(NiS,  $CoS_2$  or  $MoS_2$ )/Bi $_2Sn_2O_7$ , for enhanced solar-light photocatalytic conversions of nitrite and sulfite

Authors: Xue Ma, Chunquan Wang, Guowei Wang, Guanshu Li, Siyi Li, Jun Wang, Youtao Song

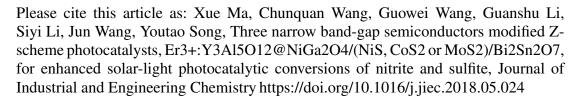
PII: S1226-086X(18)30253-3

DOI: https://doi.org/10.1016/j.jiec.2018.05.024

Reference: JIEC 4008

To appear in:

Received date: 21-2-2018 Revised date: 7-5-2018 Accepted date: 18-5-2018



This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



Three narrow band-gap semiconductors modified Z-scheme photocatalysts, Er<sup>3+</sup>:Y<sub>3</sub>Al<sub>5</sub>O<sub>12</sub>@NiGa<sub>2</sub>O<sub>4</sub>/(NiS, CoS<sub>2</sub> or MoS<sub>2</sub>)/Bi<sub>2</sub>Sn<sub>2</sub>O<sub>7</sub>, for enhanced solar-light photocatalytic conversions of nitrite and sulfite

Xue Ma <sup>a</sup>, Chunquan Wang <sup>a</sup>, Guowei Wang <sup>b</sup>, Guanshu Li <sup>a</sup>, Siyi Li <sup>b</sup>, Jun Wang <sup>a,b,\*</sup>, Youtao Song <sup>a,\*\*</sup>

<sup>a</sup> College of Environment, Liaoning University, Shenyang 110036, P.R. China

Received 00 February 2018; received in revised form 00 February 2018; accepted 00 February 2018 Available online 00 February 2018

\* Corresponding author. Tel.: +86 24 62207861; Fax: +86 24 62202053. *E-mail address:* wangjun888tg@126.com (J. Wang); wangjun891@sina.com (J. Wang); ysong\_tg@126.com (Y. Song).

## Graphical abstract

A narrow band-gap NiS semiconductor like "conductive ladder" is inserted between  $Er^{3+}:Y_3Al_5O_{12}@NiGa_2O_4$  and  $Bi_2Sn_2O_7$  to accelerate the electron transfer from conduction band of  $Bi_2Sn_2O_7$  to valence band of  $NiGa_2O_4$ .  $Er^{3+}:Y_3Al_5O_{12}$  as an up-conversion luminescence agent (from visible-light to ultraviolet-light) provides enough ultraviolet-light for satisfying the energy demand of wide band-gap  $NiGa_2O_4$ . The prepared Z-scheme

http://dx.doi.org/00.0000/j.jiec.2018.00.000

<sup>&</sup>lt;sup>b</sup> College of Chemistry, Liaoning University, Shenyang 110036, P.R. China

<sup>0000-0000/© 2018</sup> The Korean Society of Industrial and Engineering Chemistry. Published by Elsevier B.V. All rights reserved.

## Download English Version:

## https://daneshyari.com/en/article/10150526

Download Persian Version:

 $\underline{https://daneshyari.com/article/10150526}$ 

Daneshyari.com