Title: Effective orientation control of photogenerated carrier separation via rational design of a $Ti_3C_2(TiO_2)$@CdS/MoS_2 photocatalytic system

Authors: Zizheng Ai, Yongliang Shao, Bin Chang, Baibiao Huang, Yongzhong Wu, Xiaopeng Hao

PII: S0926-3373(18)30944-5
DOI: https://doi.org/10.1016/j.apcatb.2018.09.101
Reference: APCATB 17084

To appear in: *Applied Catalysis B: Environmental*

Received date: 20-8-2018
Revised date: 21-9-2018
Accepted date: 30-9-2018

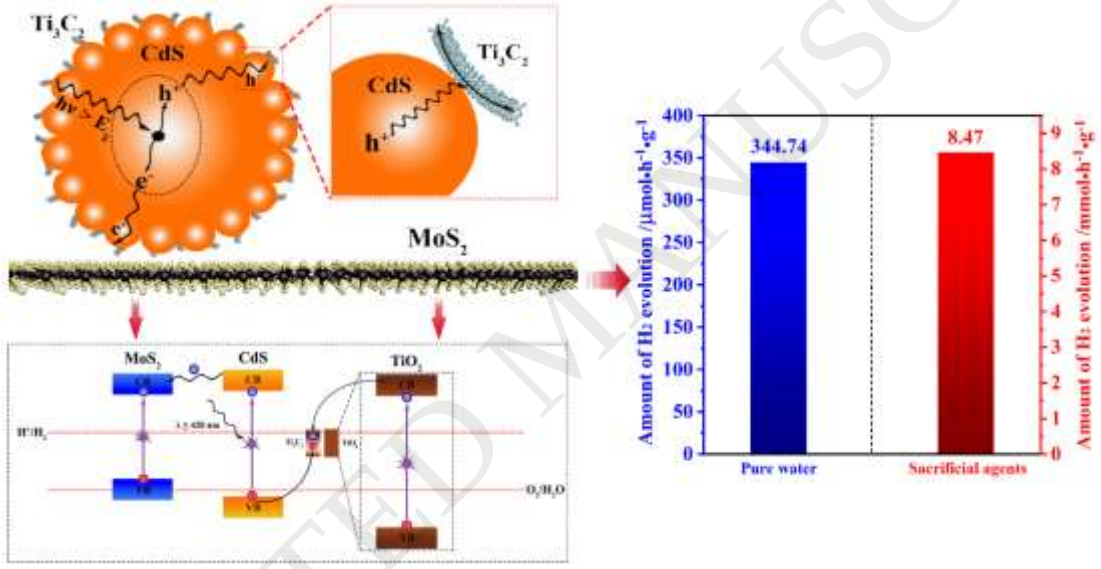
Please cite this article as: Ai Z, Shao Y, Chang B, Huang B, Wu Y, Hao X, Effective orientation control of photogenerated carrier separation via rational design of a $Ti_3C_2(TiO_2)$@CdS/MoS_2 photocatalytic system, *Applied Catalysis B: Environmental* (2018), https://doi.org/10.1016/j.apcatb.2018.09.101

Effective orientation control of photogenerated carrier separation via rational design of a $Ti_3C_2(TiO_2)$@CdS/MoS_2 photocatalytic system

Zizheng Ai, Yongliang Shao, Bin Chang, Baibiao Huang, Yongzhong Wu*, Xiaopeng Hao*

State Key Lab of Crystal Materials, Shandong University, Jinan 250100, P. R. of China

GRAPHICAL ABSTRACT



Highlights：

1. A novel $Ti_3C_2(TiO_2)$@CdS/MoS_2 composite photocatalyst system was fabricated.
2. The band type of II junction and Z-scheme are organically combined.
3. The regulation of charge separation and transfer direction is realized successfully.
4. A high H_2 yield rate of 344.74 μmol·h^{-1}·g^{-1} can be reached in pure water.