Electronic Supplementary Information

Construction of donor-mediator-receptor heterojunctions: $Ni_{12}P_5/In(OH)_3/CdIn_2S_4$ ternary catalyst for photocatalytic hydrogen production

Wenwen Yang[a], *Shan-Shan Xu*[b], *Yawen Niu*[a], *Yanhui Zhang*[a], *Jian-Feng Li*[b], *Juan Xu**[a]

[a]College of Chemistry, Chemical Engineering and Environment, Fujian Province Key Laboratory of Modern Analytical Science and Separation Technology, Minnan Normal University, Zhangzhou 363000, China.

[b]College of Physical Science and Technology, College of Materials, State Key Laboratory of Physical Chemistry of Solid Surfaces, College of Chemistry and Chemical Engineering, College of Energy, Fujian Key Laboratory of Advanced Materials, Xiamen University, Xiamen 361005, China.

*Corresponding Author, Email: xjzhejiang.2008@163.com

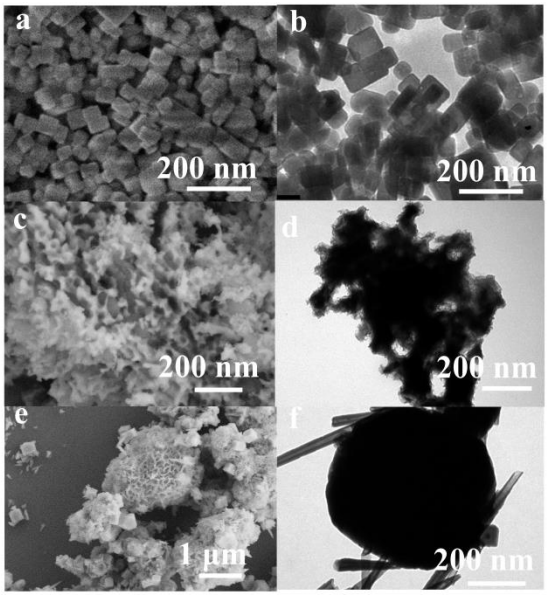

Fig. S1 The SEM images and TEM images of $In(OH)_3$ **a-b**, $Ni_{12}P_5$ **c-d**, and 1% $In(OH)_3$/CIS **e-f**.

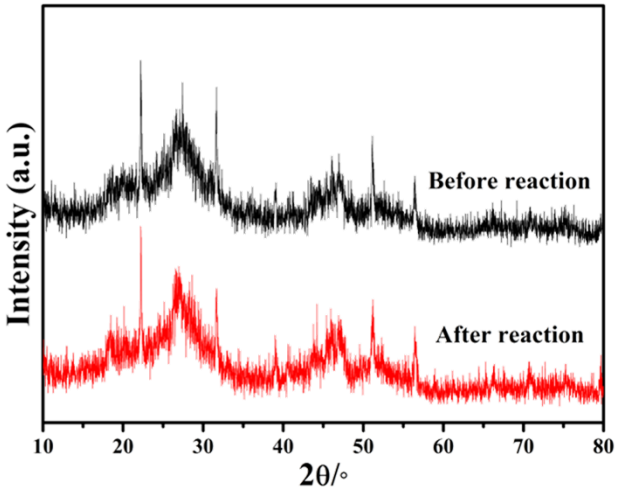

Fig. S2 XRD patterns of 5% $Ni_{12}P_5$/$In(OH)_3$/CIS sample before and after the photocatalytic reaction.