SupplementaryInformation

Novel Ag3PO4/Nb2O5 fiber composite with enhanced photocatalytic performance and stability

Ruyi Shao[1], Xi Zeng[2], Zhenzhu Cao*[1], Hongjie Dong [1], Liying Wang[1], Fang Wang[2], Jinrong Liu[1], Zhi Li[3], Qinghua Liang[3]

1. College of Chemical Engineering, Inner Mongolia University of Technology, Hohhot, 010051, China
2. State Key Laboratory of Multi-phase Complex System, Institute of Process Engineering, Chinese Academy of Sciences, Beijing, 100190, China
3. Key Laboratory of Photochemical Conversion and Optoelectronic Materials, Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, Beijing, 100190, China

*Corresponding author: czz03@163.com

Tel: +86 471 6575722;

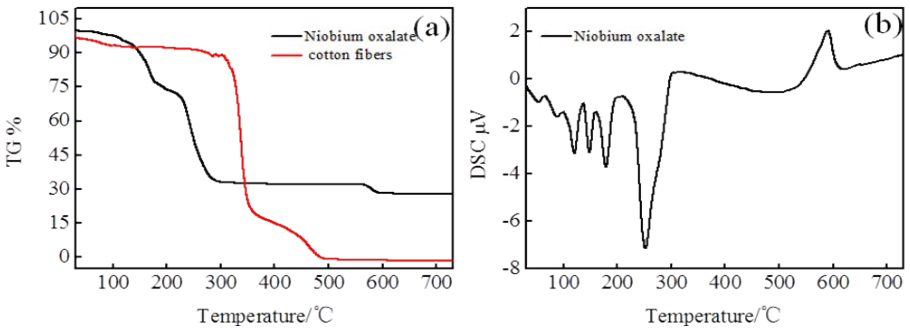

Fig.S1 The TG and DSC curves of catalyst precursor a) TG curves of niobium oxalate and cotton fibers b) DSC curve of niobium oxalate

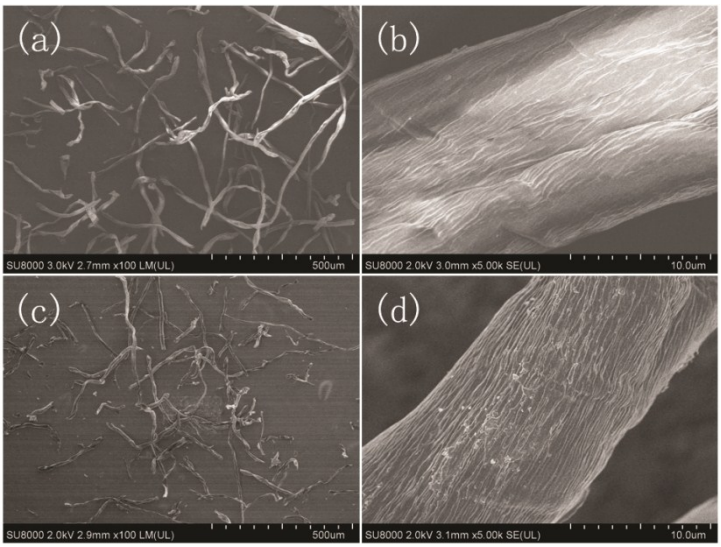

Fig.S2 (a and b) SEM images of biomorphic Nb_2O_5 fibers precursor pretreatment at 300℃(in air). (c and d) SEM images of sample pretreatment at 700℃(in N_2)

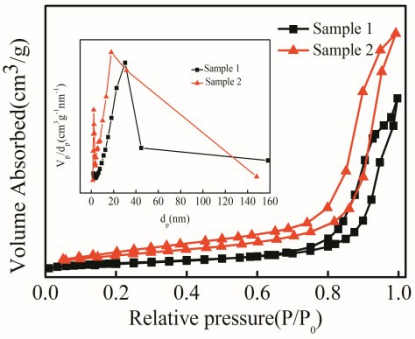

Fig.S3 N_2 adsorption-desorption isotherms and BJH measurement (inset) of synthesized biomorphic Nb_2O_5 hollow fibers sample 1: previously-prepared Nb_2O_5 fiber and sample 2: Nb_2O_5 fibers with coarse surface

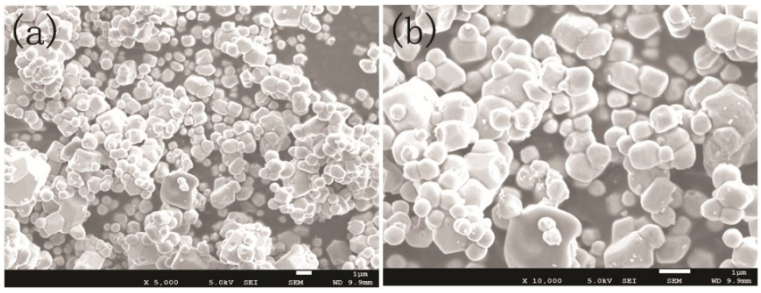

Fig. S4 SEM images of as-prepared Ag_3PO_4 particle

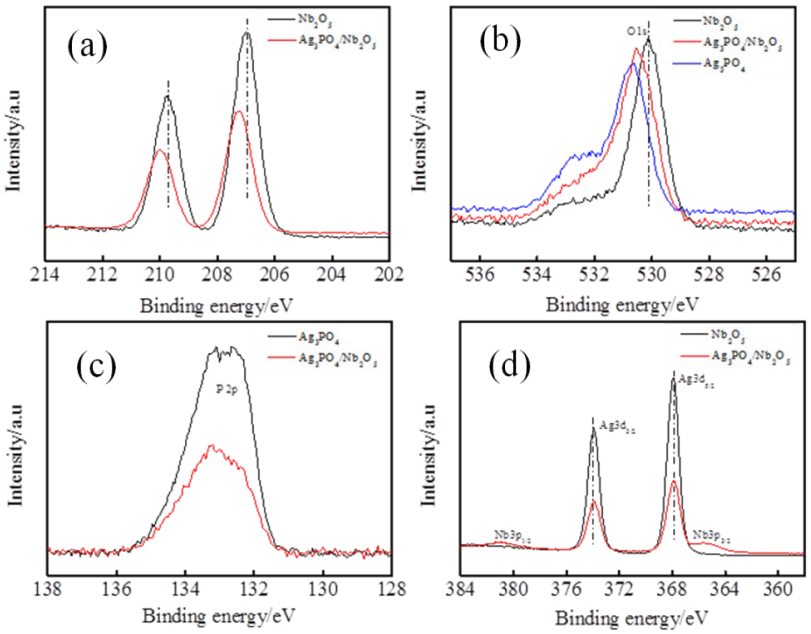

Fig. S5. XPS spectra of the Nb_2O_5, Ag_3PO_4/Nb_2O_5, and Ag_3PO_4: (a) O 1s, (b) P 2p, (c) Ag 3d and (d) C 1s.

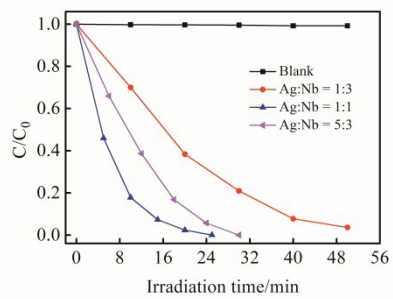

Fig. S6 Photocatalytic activity of different Ag_3PO_4/Nb_2O_5 molar ratio for RhB degradation under visible light irradiation;

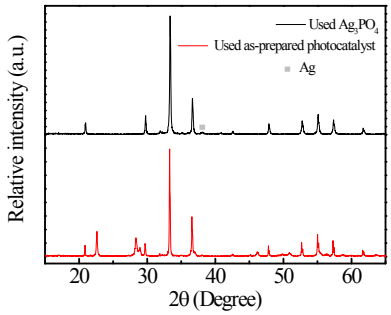

Fig. S7 XRD patterns of used Ag_3PO_4 and used Ag_3PO_4/Nb_2O_5.

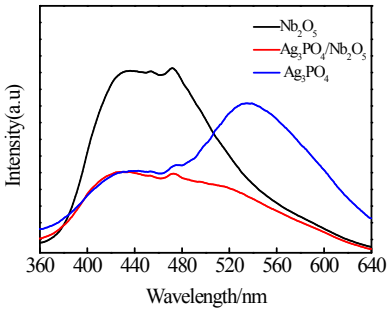

Fig. S8 Photoluminescence spectra of Nb_2O_5, Ag_3PO_4 and Ag_3PO_4/Nb_2O_5 photocatalysts.

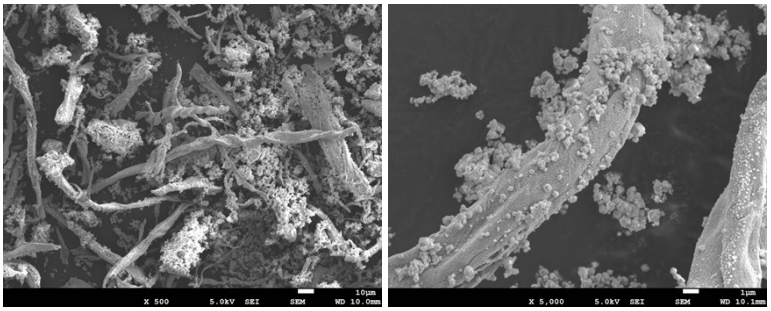

Fig. S9 SEM results of Ag_3PO_4/Nb_2O_5 composite with Ag:Nb =5:3