Supplementary Information

ZIF-8/Zn_2GeO_4 Nanorods with Enhanced CO_2 Adsorption Property in Aqueous Medium for Photocatalytic Synthesis of Liquid Fuel †

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Qi Liu,[ab] Ze-Xian Low,[a] Lunxi Li,[a] Amir Razmjou,[a] Kun Wang,[a] Jianfeng Yao,[a] Huanting Wang*,[a]

[a] Department of Chemical Engineering, Monash University, Clayton, VIC 3800, Australia. Fax: +61 3 9905 5686 ; Tel: +61 3 9905 3449
E-mail: huanting.wang@monash.edu
[b] Anhui Polytechnic University, Wuhu 241000, P. R. China.

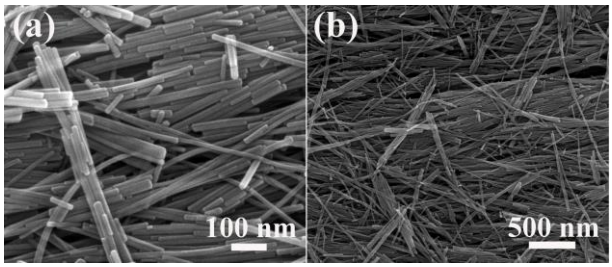

Fig. S1 SEM images of Zn_2GeO_4 nanorods at different magnifications.

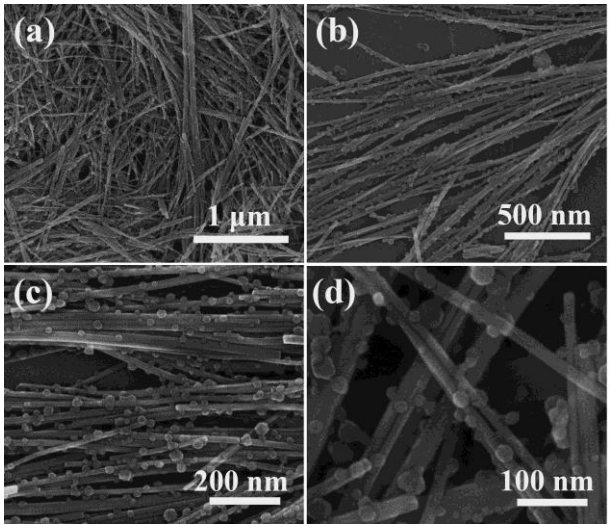

Fig.S2 FE-SEM images of the Zn_2GeO_4/ZIF-8 hybrid nanorods at different magnifications.

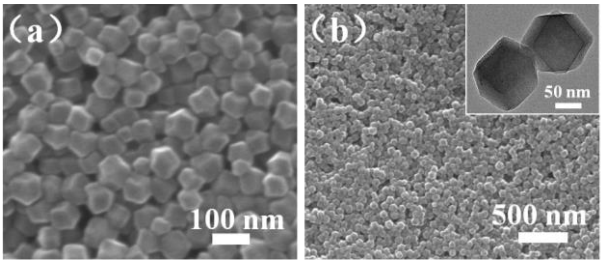

Fig.S3 SEM images of ZIF-8 nanoparticles at different magnifications. The inset shows the TEM image of ZIF-8 nanoparticles.

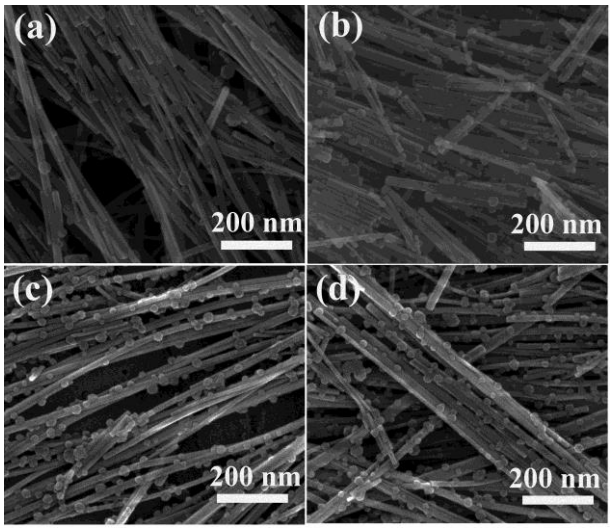

Fig.S4 FE-SEM images of the Zn_2GeO_4/ZIF-8 hybrid nanorods prepared with different deposition time of ZIF-8: (a) 10 min, (b) 20 min, (c) 40 min,and (d) 60 min.

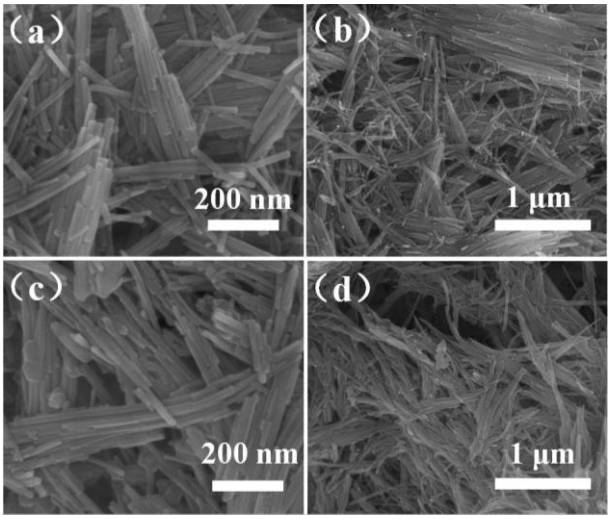

Fig.S5 SEM images of Zn_2GeO_4 nanorods prepared by fluoride ion (a) (b), and after in-situ growth of ZIF-8 (c)(d), indicating no ZIF-8 nanoparticles are formed.

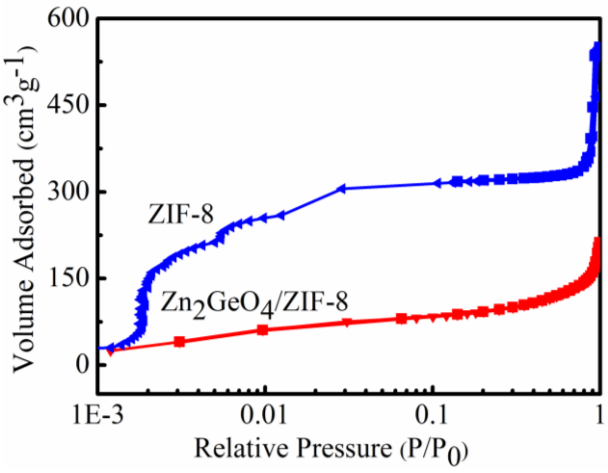

Fig. S6 Semi-log plot for nitrogen adsorption isotherms of the ZIF-8 and ZIF-8/Zn_2GeO_4 composite. The nitrogen adsorption on Zn_2GeO_4/ZIF-8 is more gradual than that on ZIF-8, especially at low relative pressures. This is because (1) the composite contains only 25% ZIF-8, and (2) ZIF-8 nanocrystals grown on Zn_2GeO_4 are much smaller than the ZIF-8 crystals freely grown in the solution; much faster gas transport occurs in nanoparticles.

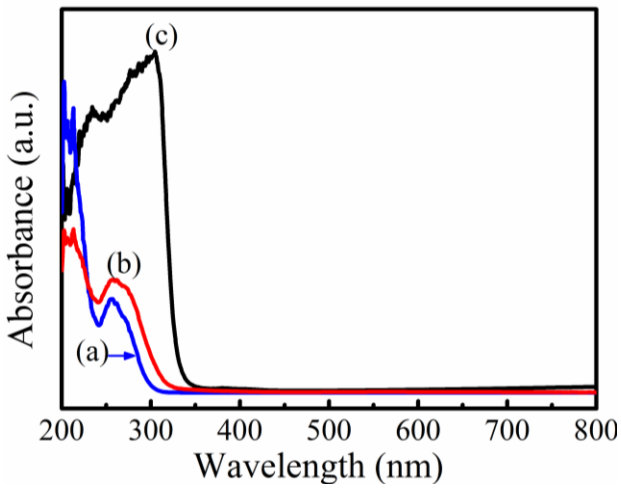

Fig.S7 UV-vis absorption spectra of (a) Zn_2GeO_4 nanorods, (b) Zn_2GeO_4/ZIF-8 hybrid nanorods, and (c) pure ZIF-8.

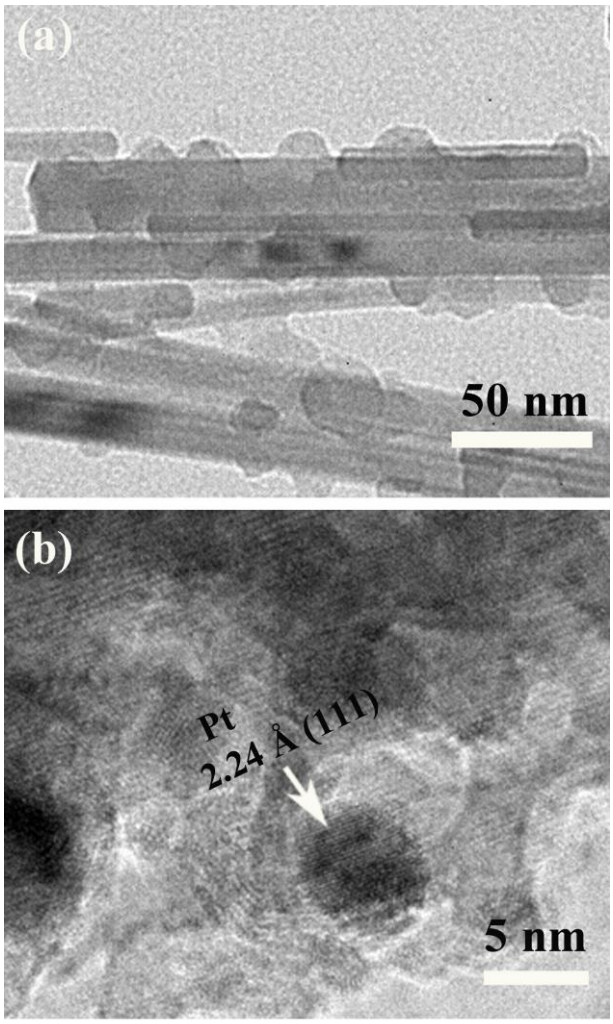

Fig.S8 (a)TEM and (b)HRTEM images of 1 wt % Pt-loaded Zn_2GeO_4/ZIF-8 hybrid nanocrods

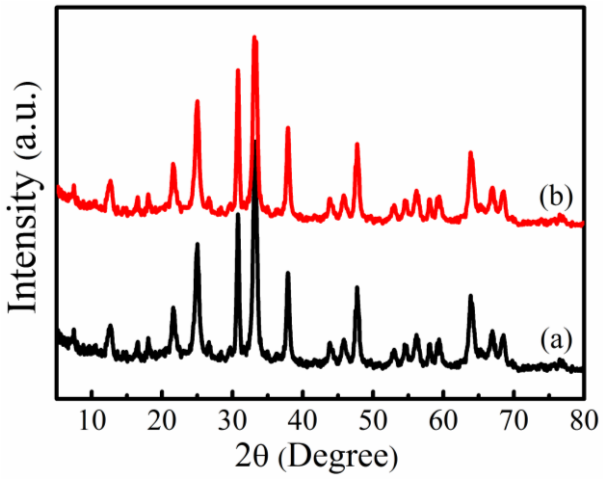

Fig.S9 Powder X-ray diffraction patterns of Zn_2GeO_4/ZIF-8 hybrid nanorods (a) before and (b) after the photocatalytic reaction.