

Electronic Supplementary Information

Mesoporous Ag@TiO₂ Nanofibers and Their Photocatalytic Activity for Hydrogen Evolution

Minghui Shang, Huilin Hou, Fengmei Gao, Lin Wang and Weiyu Yang**

Institute of Materials, Ningbo University of Technology, Ningbo City, 315016, P.R. China

Corresponding author E-mails: houhuilin86@163.com (H. Hou)

weiyuyang@tsinghua.org.cn (W. Yang)

Tel: +86-574-87080966

Fax: +86-574-87081221

Table S1. Crystal size of the TiO₂ according to the XRD results of the three sample products

Samples	Crystallite (101)	Crystallite (004)	Crystallite (200)	Average crystal size (nm)
Unloaded Sample	21.1	26.9	22.2	23.4
Ag loaded sample A	19.1	24.2	18.3	20.5
Ag loaded sample B	20.6	25.8	21.8	22.7

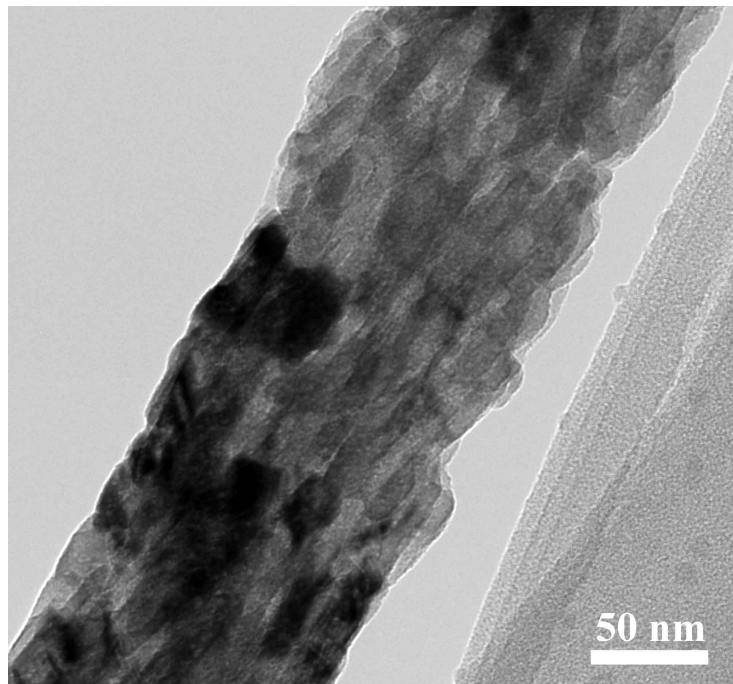


Fig. S1. A typical TEM image of the pure TiO₂ Sample

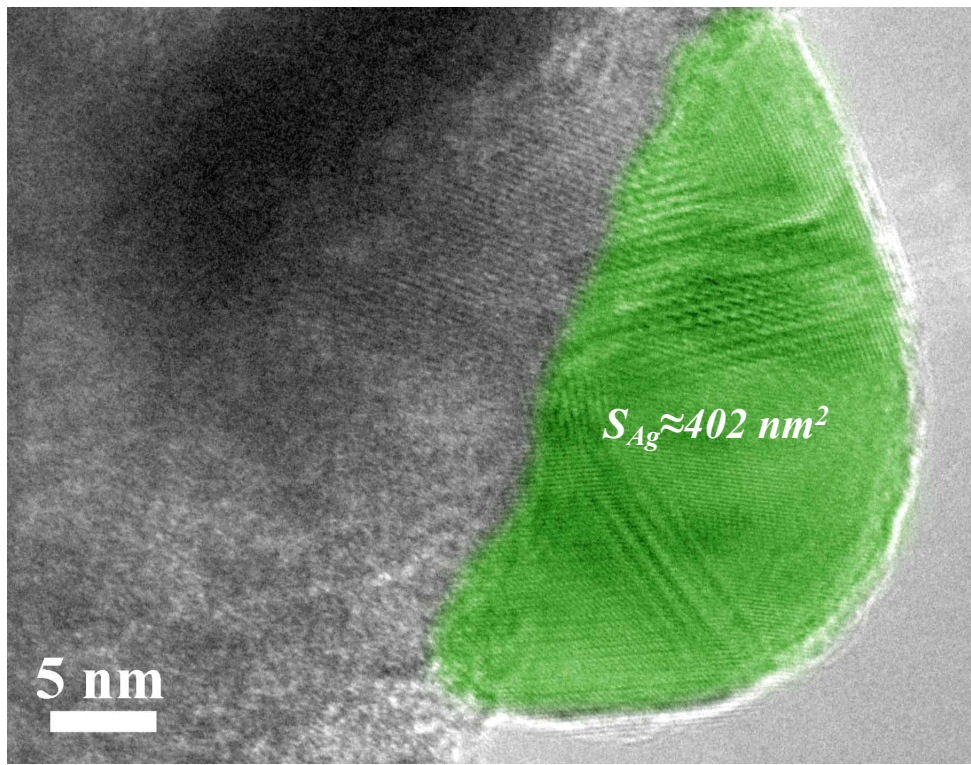


Fig. S2. A typical HTRM image showing that the assembled Ag nanoparticle in the platform of porous TiO_2 fibers of Sample A is hemispheric shape and the areas is 402 nm^2 . The green marked areas refer to the crystalline Ag nanoparticles.

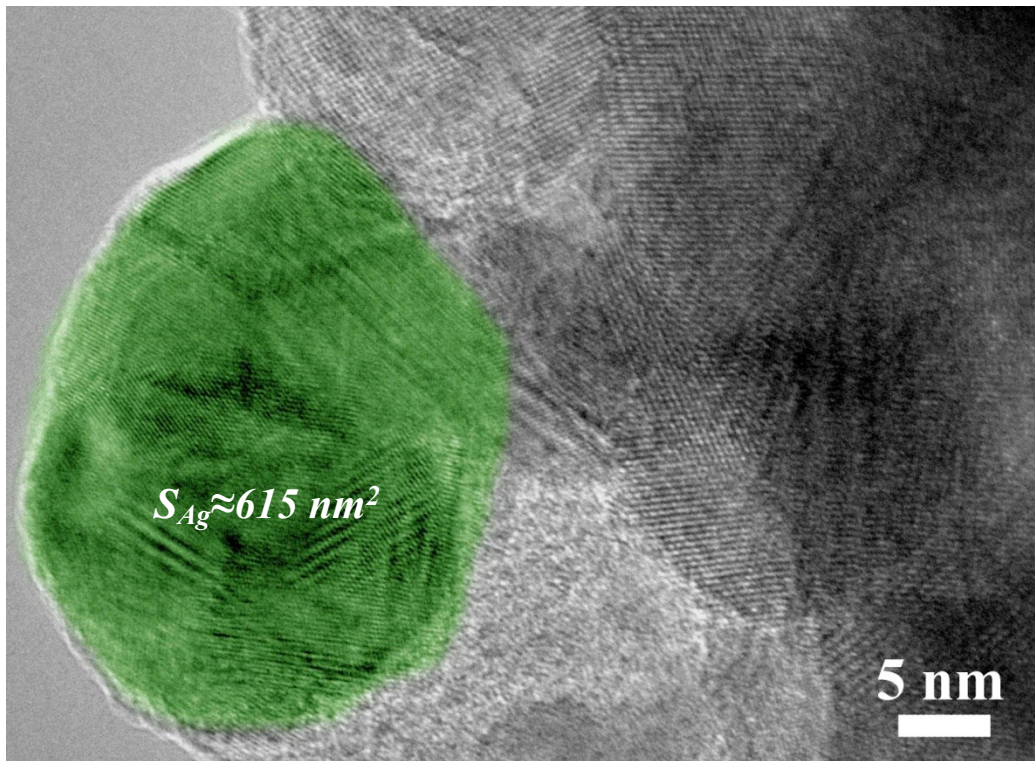


Fig. S3. A typical HTRM image showing that the assembled Ag nanoparticle in the platform of porous TiO₂ fibers of Sample B is spheroid shape and the areas is 615nm². The green marked areas refer to the crystalline Ag nanoparticles.

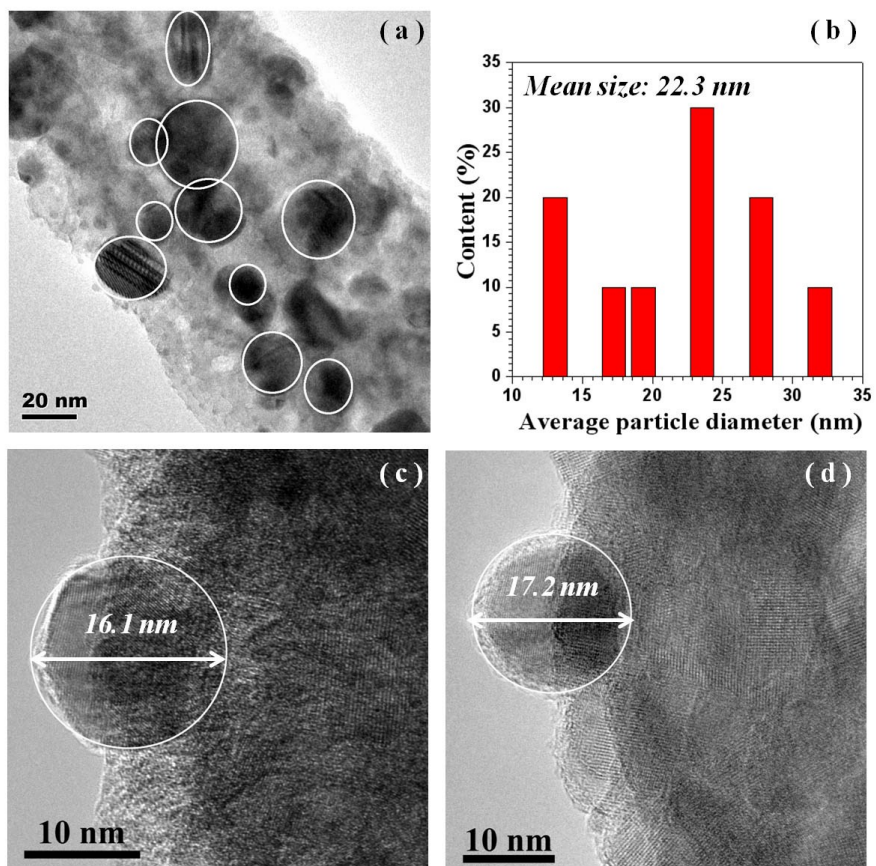


Fig. S4. (a) A representative TEM image of the Ag loaded Sample B. (b) The corresponding particle size distribution of the silver NPs from (a) of Ag loaded Sample B. (c-d) Representative TEM images of the Ag loaded Sample A.

Table S2. Comparison of the related work for photocatalytic H₂ production

Material	Preparation	Irradiation conditions	Reaction solution	Activity ($\mu\text{mol g}^{-1}\text{h}^{-1}$)	Reference
Cu/TiO ₂ spherical particles	impregnation	6 W UV lampe	methanol/water	333.5	1
Pt/TiO ₂ Nanosheets	hydrothermal	350-W Xe arc lamp	ethanol/water	334	2
Au/TiO ₂	photodeposition	500 W xenon (Xe) lamp	2-propanol/water solution	1320	3
Ag-TiO ₂	sol-gel	6 W UV lampe	methanol/water	356.75	4
Pt/TiO ₂ (B) Nanofiber	wet impregnation	15 W UV lamp	Neat ethanol	477	5
Pt/TiO ₂ (B) nanofiber	impregnation	15 W UV lamps	neat ethanol	2380	6
Au/Pt/TiO ₂ composite nanofibers	electrospinning	300 W Xe lamp	aqueous solution	233.16	7
Au-Pt/TiO ₂ nanoparticles	chemical reduction	300 W xenon arc lamp	water/methanol	1183	8
Ag/TiO ₂ mesoporous nanofibers	foaming-assisted electrospinning	300 W Xe	water/methanol	537.5	Current work

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