

Supporting information for

Hierarchical TiO₂ spheres decorated with Au nanoparticles for visible light hydrogen production

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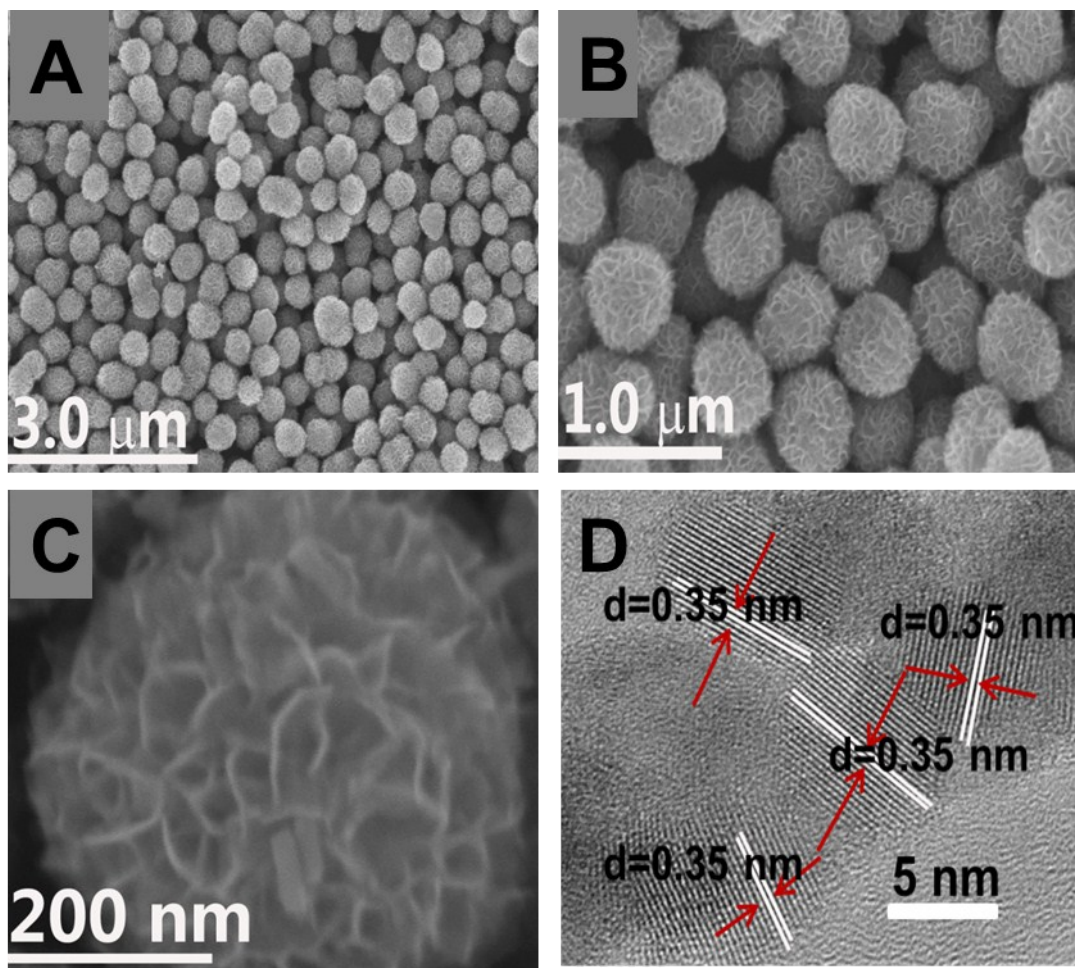


Figure S1. Scanning electron microscopy (SEM, A-C) and high resolution TEM (D) images of as-prepared TiO₂ sphere.

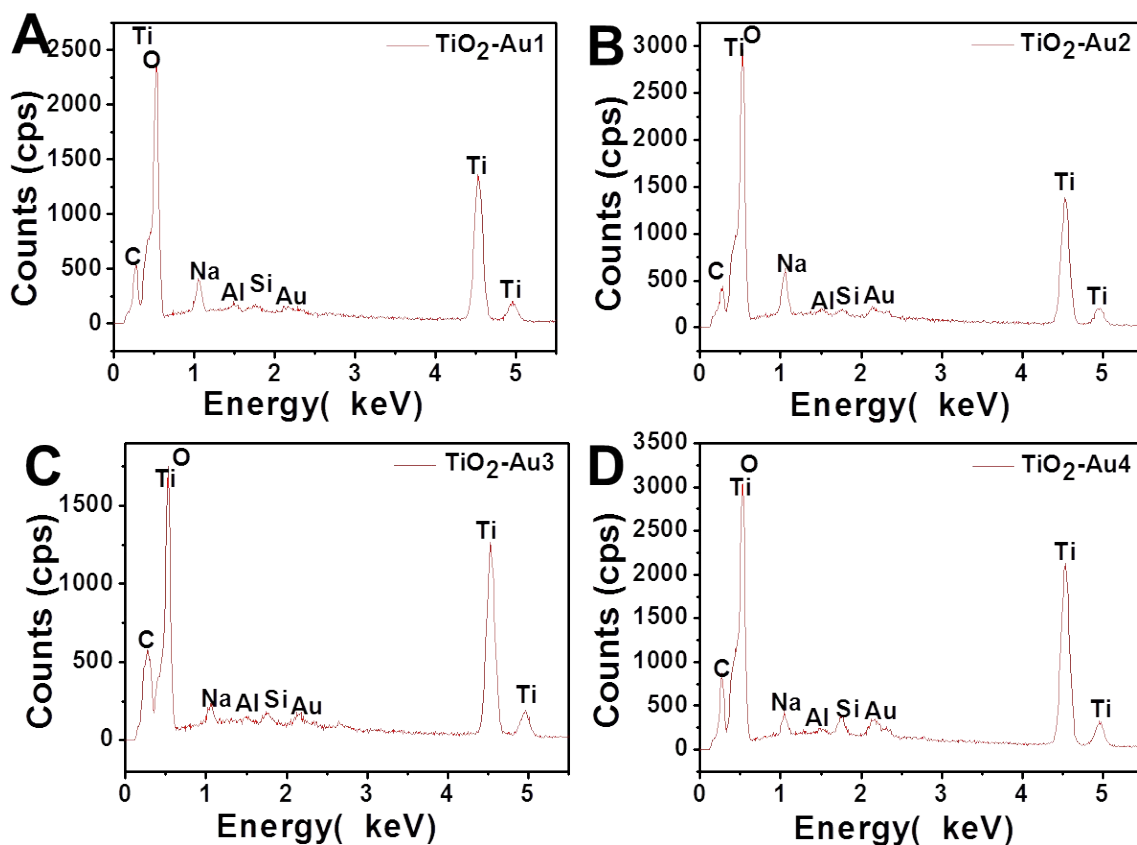


Figure S2. energy dispersive x-ray analysis (EDAX) spectra of $\text{TiO}_2\text{-Au1-4}$ for A-D, respectively.

<i>Element</i>	<i>Wt %</i>	<i>At %</i>
<i>O K</i>	35.01	62.02
<i>AuM</i>	01.07	00.15
<i>TiK</i>	63.92	37.83

$\text{TiO}_2\text{-Au1}$

<i>Element</i>	<i>Wt %</i>	<i>At %</i>
<i>O K</i>	38.44	65.71
<i>AuM</i>	02.00	00.28
<i>TiK</i>	59.56	34.01

$\text{TiO}_2\text{-Au2}$

<i>Element</i>	<i>Wt %</i>	<i>At %</i>
<i>O K</i>	30.23	57.12
<i>AuM</i>	02.43	00.37
<i>TiK</i>	67.34	42.50

$\text{TiO}_2\text{-Au3}$

<i>Element</i>	<i>Wt %</i>	<i>At %</i>
<i>O K</i>	31.25	58.41
<i>AuM</i>	02.82	00.43
<i>TiK</i>	65.93	41.16

$\text{TiO}_2\text{-Au4}$

Figure S3. Element amount analysis of $\text{TiO}_2\text{-Au1-4}$ calculated from EDAX spectra.

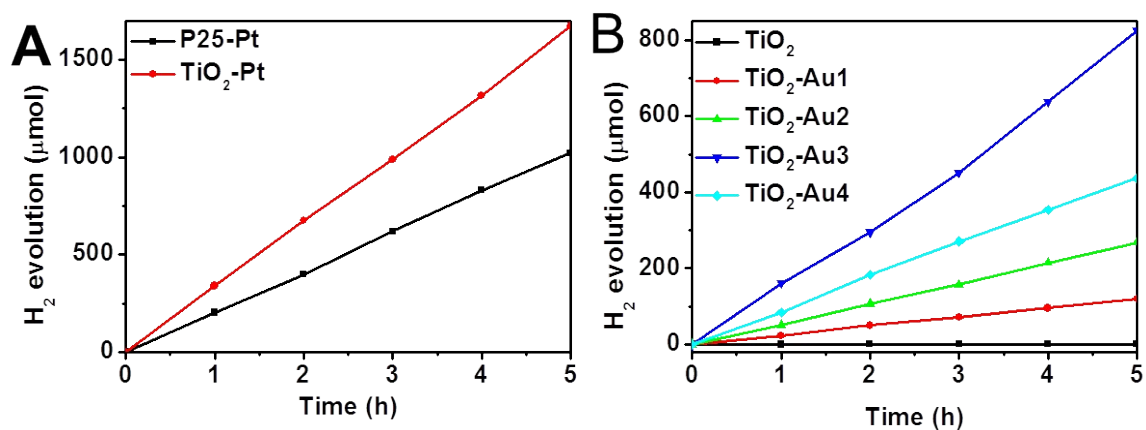


Figure S4. H₂ production relationship with time for P25 TiO₂ and TiO₂ spheres (A) and TiO₂ spheres loaded with different amount Au nanoparticles (B) under 300W Xe lamp without any filter.

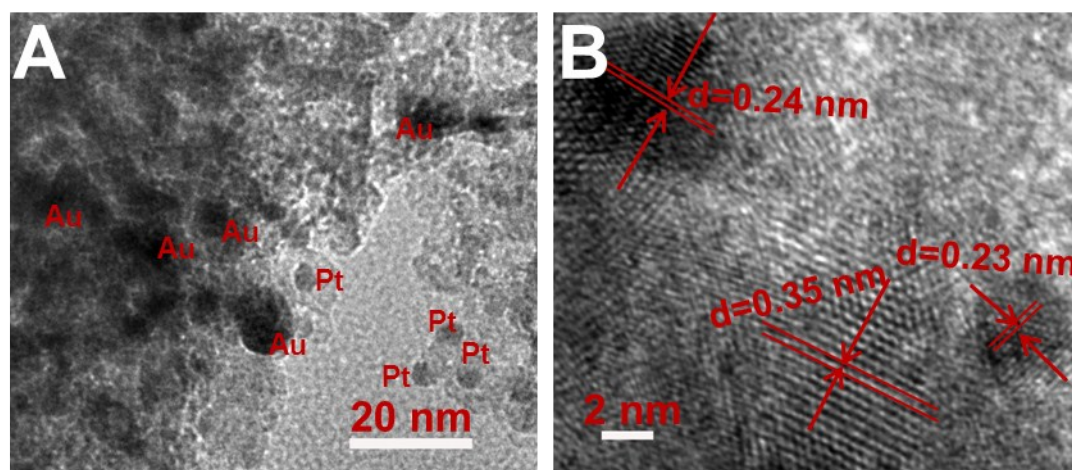


Figure S5. TEM (A) and high resolution TEM (B) images of TiO₂-Au₃ photocatalyst loaded with 1.0 wt% Pt.