

Supporting Information

Amino acid-assisted synthesis of In_2S_3 hierarchical architectures for selective oxidation of aromatic alcohols to aromatic aldehydes

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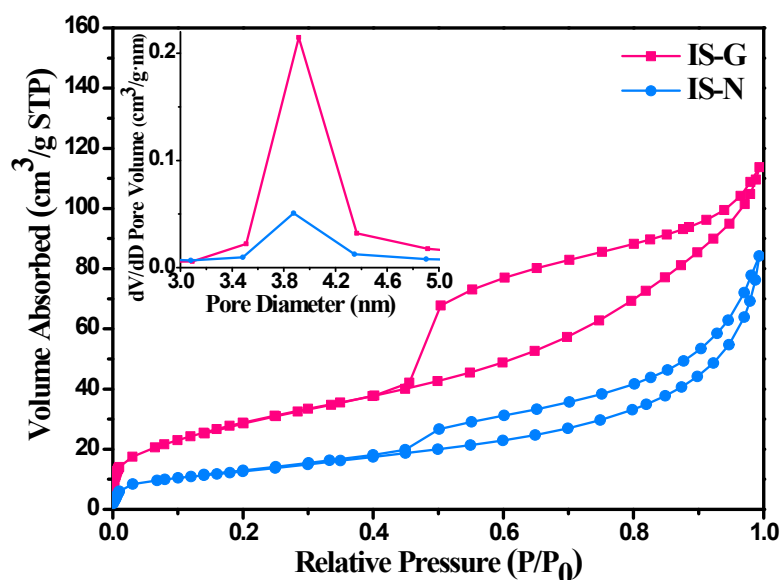


Fig. S1. Nitrogen adsorption-desorption isotherms of the IS-G and IS-N composites;

the inset is the corresponding pore diameter distribution of In_2S_3 samples.

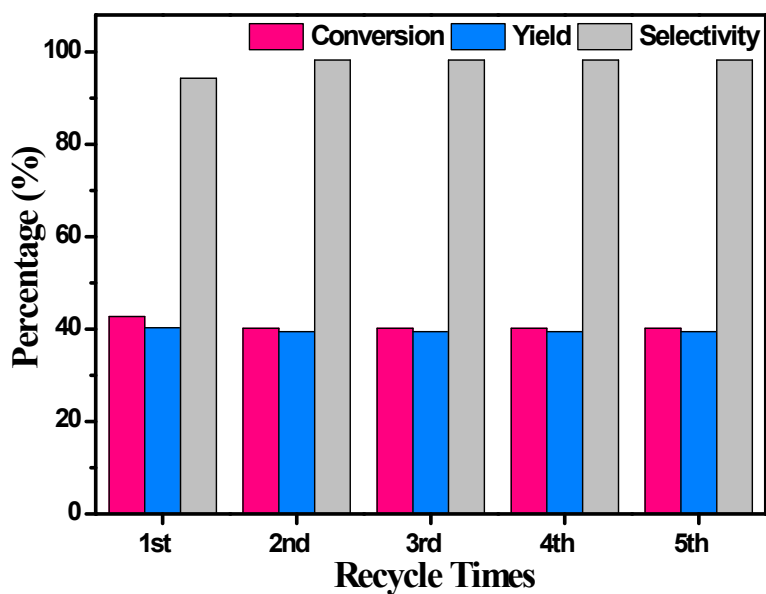


Fig. S2. Recycle experiment for photocatalytic oxidation of benzyl alcohol with IS-G catalyst under visible light irradiation for 2 h.

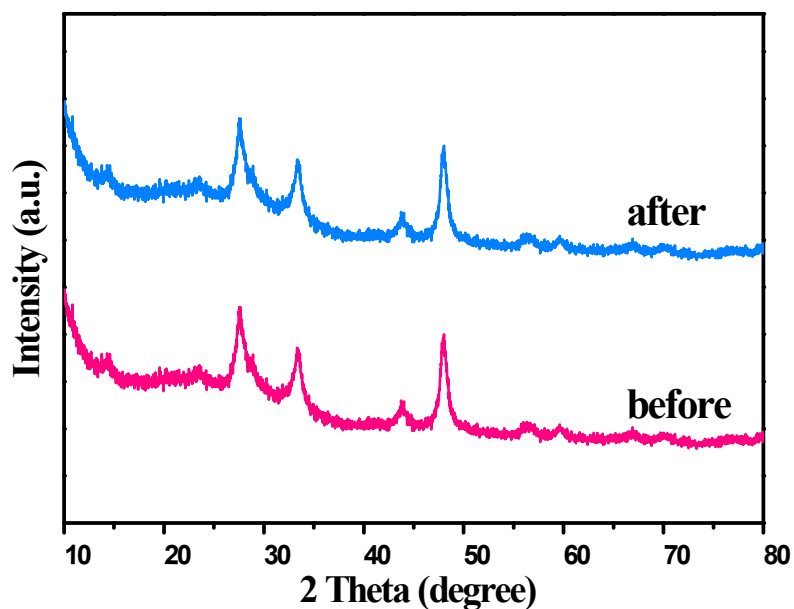


Fig. S3. XRD patterns of IS-G catalyst before and after the photocatalytic reactions.

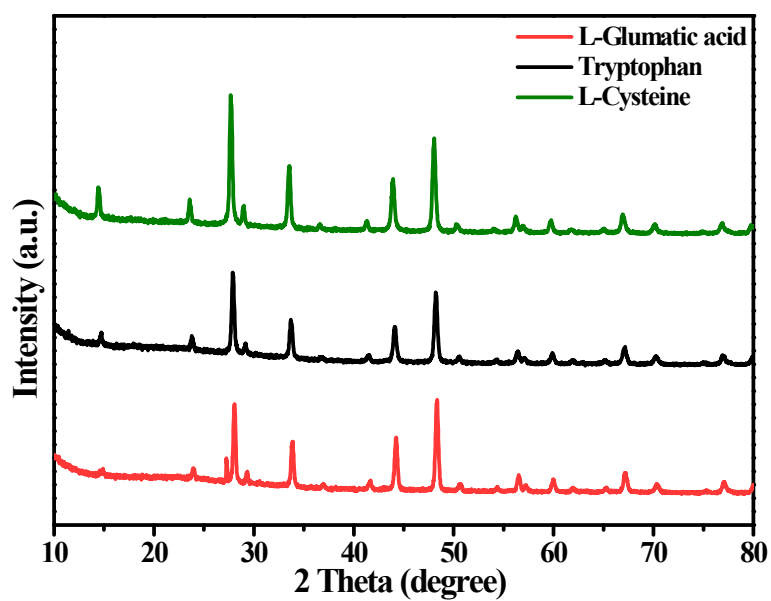


Fig. S4. XRD images of In₂S₃ in the presence of different amino acids: L-Glutamic acid, Tryptophan, L-cysteine.

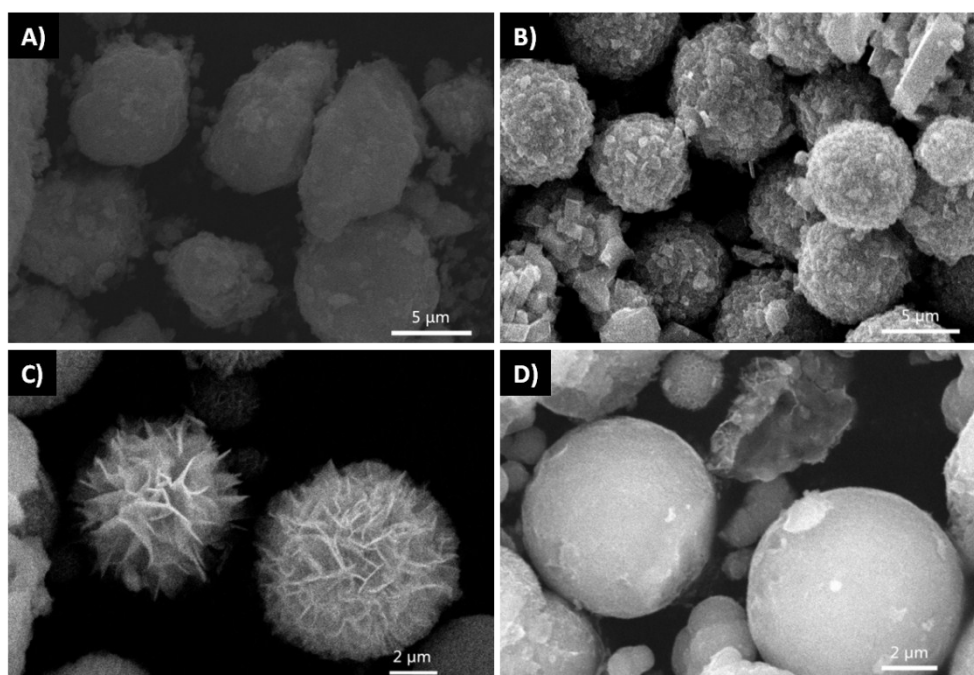
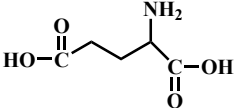
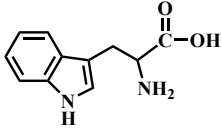


Fig. S5. FESEM images of the morphologies of In₂S₃ in the presence of different amino acids: (A) without amino acids, (B) L-Glutamic acid, (C) Tryptophan, (D) L-cysteine.

Table S1. Molecular structures, morphology of the different amino acids used in the synthesis and the conversion rates (C) for selective oxidation of benzyl alcohol to benzaldehyde with as synthesized In_2S_3 samples.

Amino acids	Molecular structure	Morphology	C (%)
Aspartic acid	$\begin{array}{c} \text{O} \\ \parallel \\ \text{H}_2\text{N}-\text{CH}-\text{C}-\text{OH} \\ \\ \text{CH}_2 \\ \\ \text{O}=\text{C}-\text{OH} \end{array}$	Spheres of thick flakes	40
Serine	$\begin{array}{c} \text{O} \\ \parallel \\ \text{H}_2\text{N}-\text{CH}-\text{C}-\text{OH} \\ \\ \text{CH}_2 \\ \\ \text{OH} \end{array}$	Spheres of tiny flakes	30
Glycine	$\text{H}_2\text{N}-\text{CH}_2-\text{C}-\text{OH}$ \parallel O	Spheres of uniform flakes	42
L-Glutamic acid		Spheres of nanobricks	35
Tryptophan		Spheres of thin flakes	32
L-cysteine	$\begin{array}{c} \text{O} \\ \parallel \\ \text{H}_2\text{N}-\text{CH}-\text{C}-\text{OH} \\ \\ \text{CH}_2 \\ \\ \text{SH} \end{array}$	Spheres with slippery surface	30