Supporting information

Silver Iodide Microstructures of a Uniform Tower−Like Shape: Morphology Purification *via* a Chemical Dissolution, Simultaneously Boosted Catalytic Durability and Enhanced Catalytic Performances

Bin Lei,[†,‡] Mingshan Zhu,[‡] Penglei Chen,*[,†,‡] Chuncheng Chen,[‡] Wanhong Ma,[‡] Tiesheng Li,*[,†] and Minghua Liu*[,‡]

[†] *College of Chemistry and Molecular Engineering, Zhengzhou University, 100 Science Road, Zhengzhou, Henan 450001, P. R. China.* [‡] *Beijing National Laboratory for Molecular Science, CAS Key Laboratory of Colloid, Interface and Chemical Thermodynamics, Institute of Chemistry, Chinese Academy of Sciences, No. 2 Zhongguancun Beiyijie, Beijing 100190, P. R. China.*

E–mail: chenpl@iccas.ac.cn; cpl@zzu.edu.cn; lts34@zzu.edu.cn; liumh@iccas.ac.cn

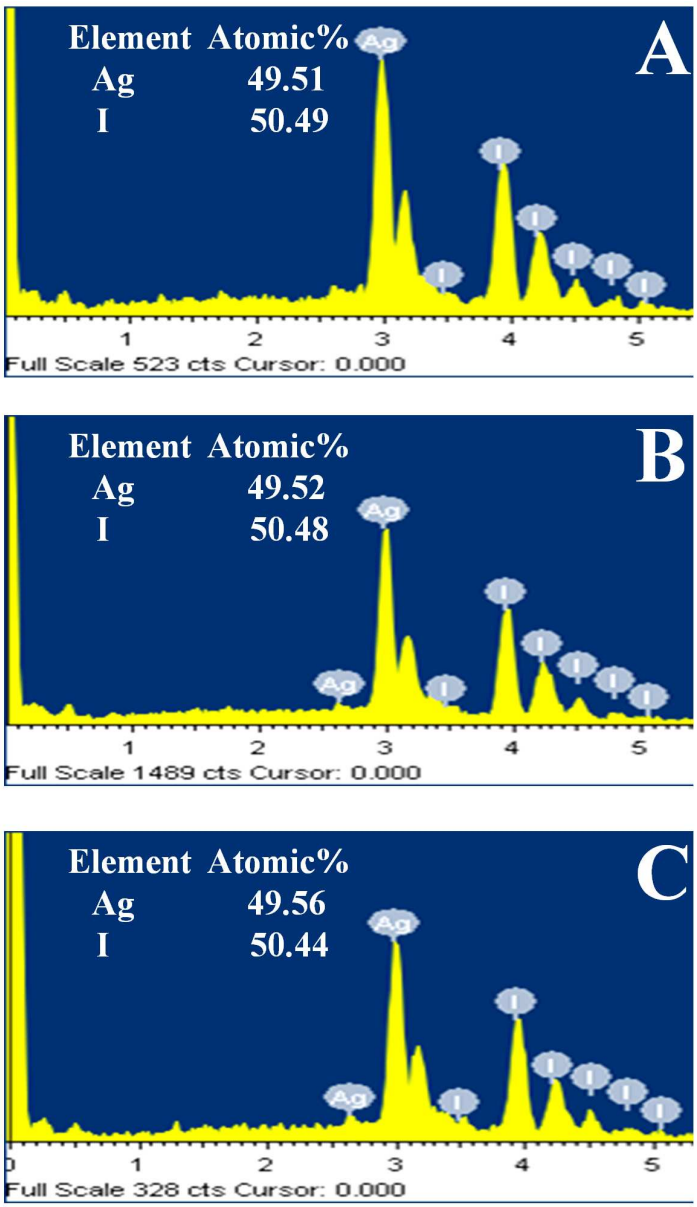

Figure S1. EDX elemental analyses of our AgI species measured before the photocatalytic reactions. A): The irregular AgI structures. B): The mixture of the irregular and tower−like AgI architectures. C): The AgI architectures of a uniform tower−like morphology.

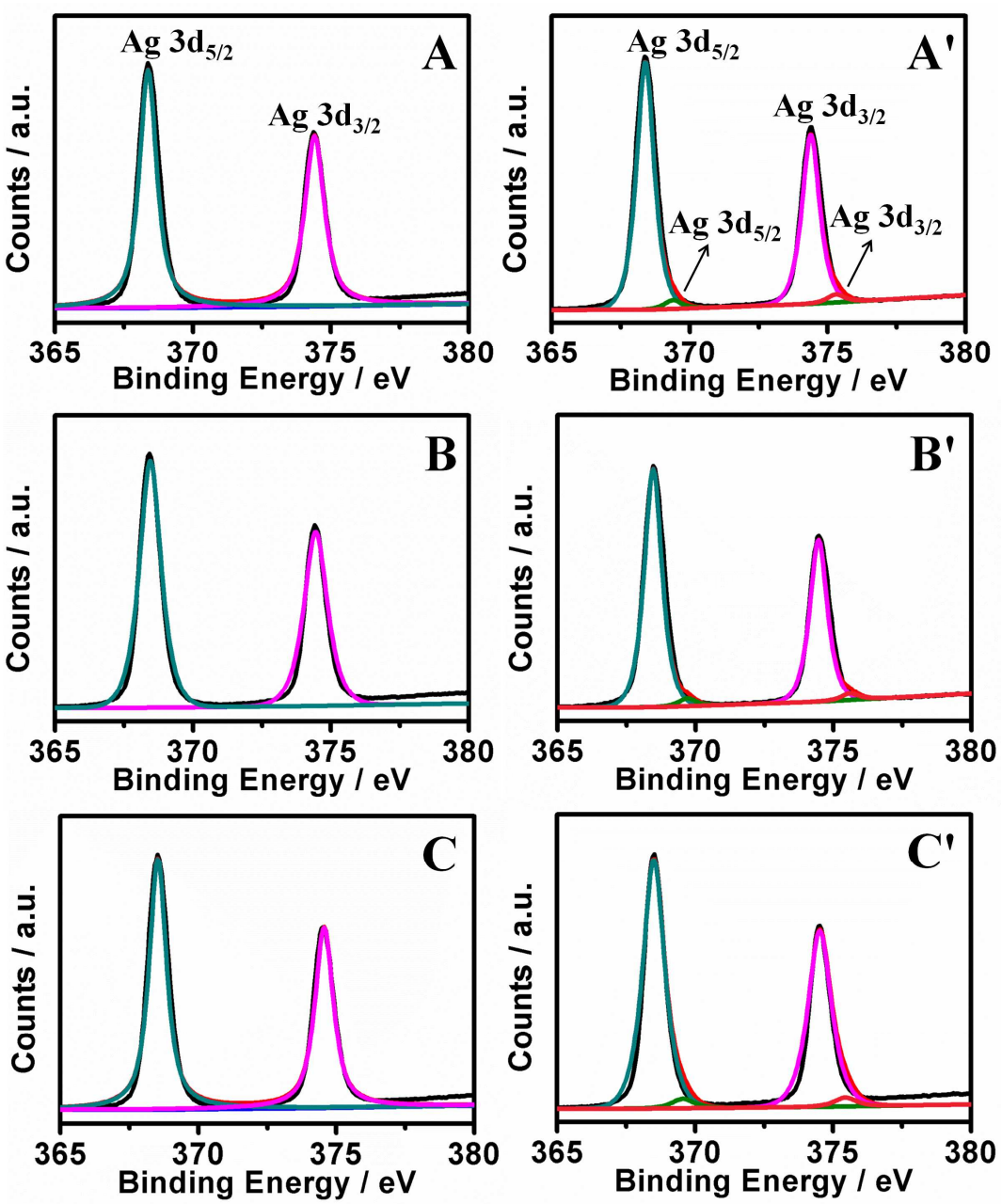

Figure S2. XPS spectra of Ag 3d of the irregular AgI structures (A), the mixture of the irregular and tower−like AgI architectures (B), and the AgI architectures of a uniform tower−like morphology (C) before the catalytic reactions. Those of the corresponding samples after the catalytic reactions are repeated 3 times (A', B' and C') are also shown for comparison.

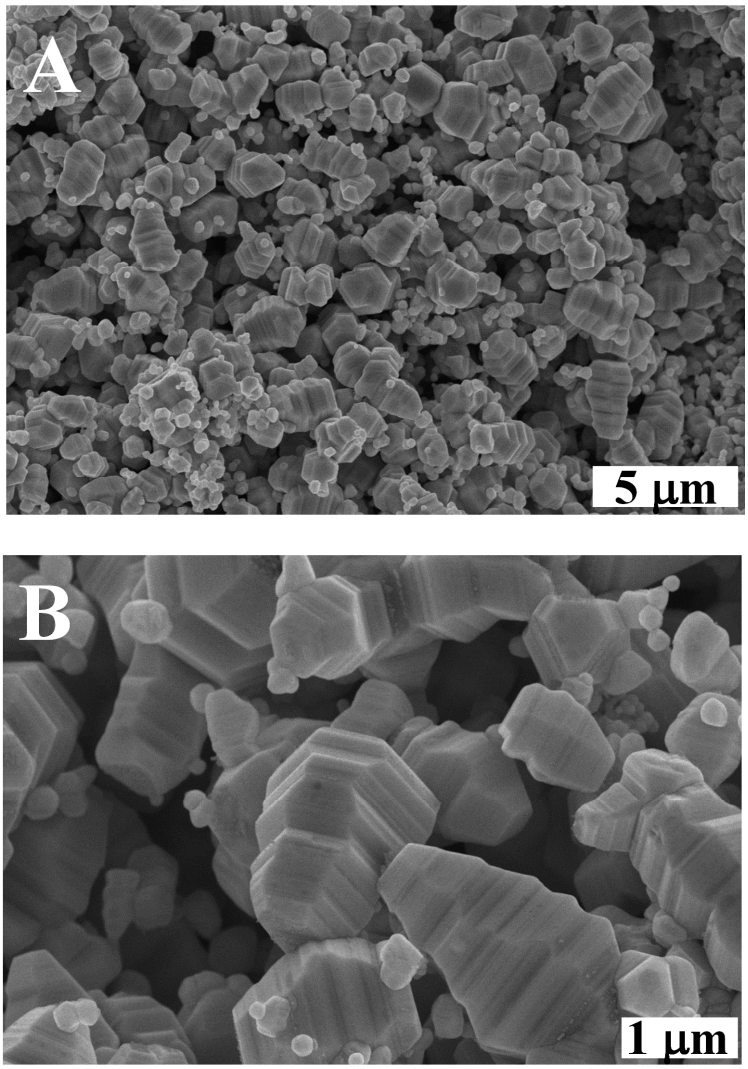

Figure S3. Typical low–magnification (A) and high–magnification SEM (B) images of the mixture of the irregular and tower−like AgI architectures measured after a centrifugation−based morphology purification (1000 rpm, 2 minutes).

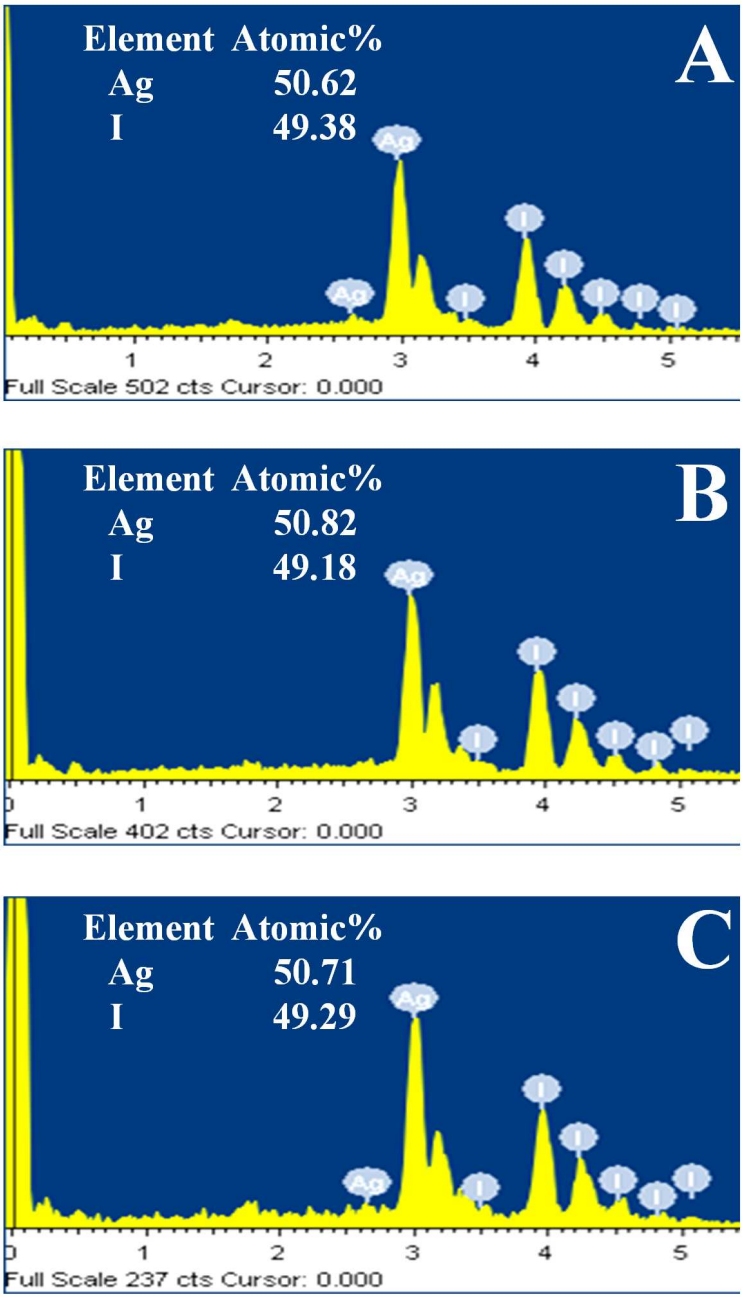

Figure S4. EDX elemental analyses of our AgI species measured after the photocatalytic reactions are repeated 3 times. A): The irregular AgI structures. B): The mixture of the irregular and tower−like AgI architectures. C): The AgI architectures of a uniform tower−like morphology.