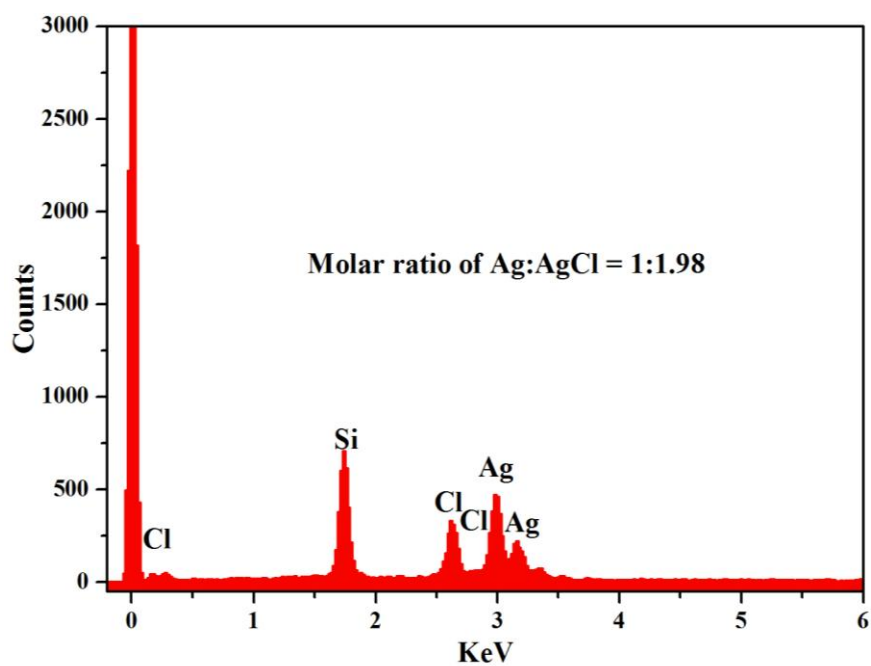


## Supplementary Information for

### A new chemical route to hybrid nanostructure: room-temperature solid-state reaction synthesis of Ag@AgCl with efficient photocatalysis

Pengfei Hu<sup>\*a</sup> · Yali Cao<sup>b</sup>

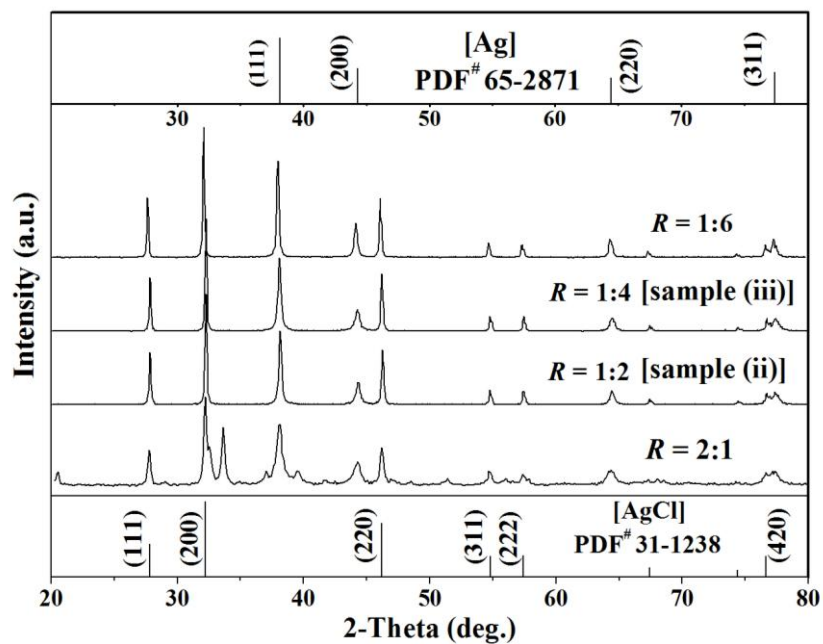


**Figure S1.** EDS spectrum taken from the Ag@AgCl sample prepared with 1:1 of Ag<sub>2</sub>CO<sub>3</sub> and HONH<sub>3</sub>Cl.

<sup>\* a</sup> Laboratory for Microstructures, Shanghai University, Shanghai 200444, P. R. China.

E-mail: [hpf-hqx@shu.edu.cn](mailto:hpf-hqx@shu.edu.cn); Tel/Fax: +86-21-66135030.

<sup>b</sup> Institute of Applied Chemistry, Xinjiang University, Urumqi, Xinjiang 830046, P. R. China.



**Figure S2.** XRD patterns of Ag@AgCl samples prepared with various  $R$ . The upper and bottom of (a) are the standard patterns of Ag (JCPDS file: 65-2871) and AgCl (JCPDS file: 31-1238) respectively.

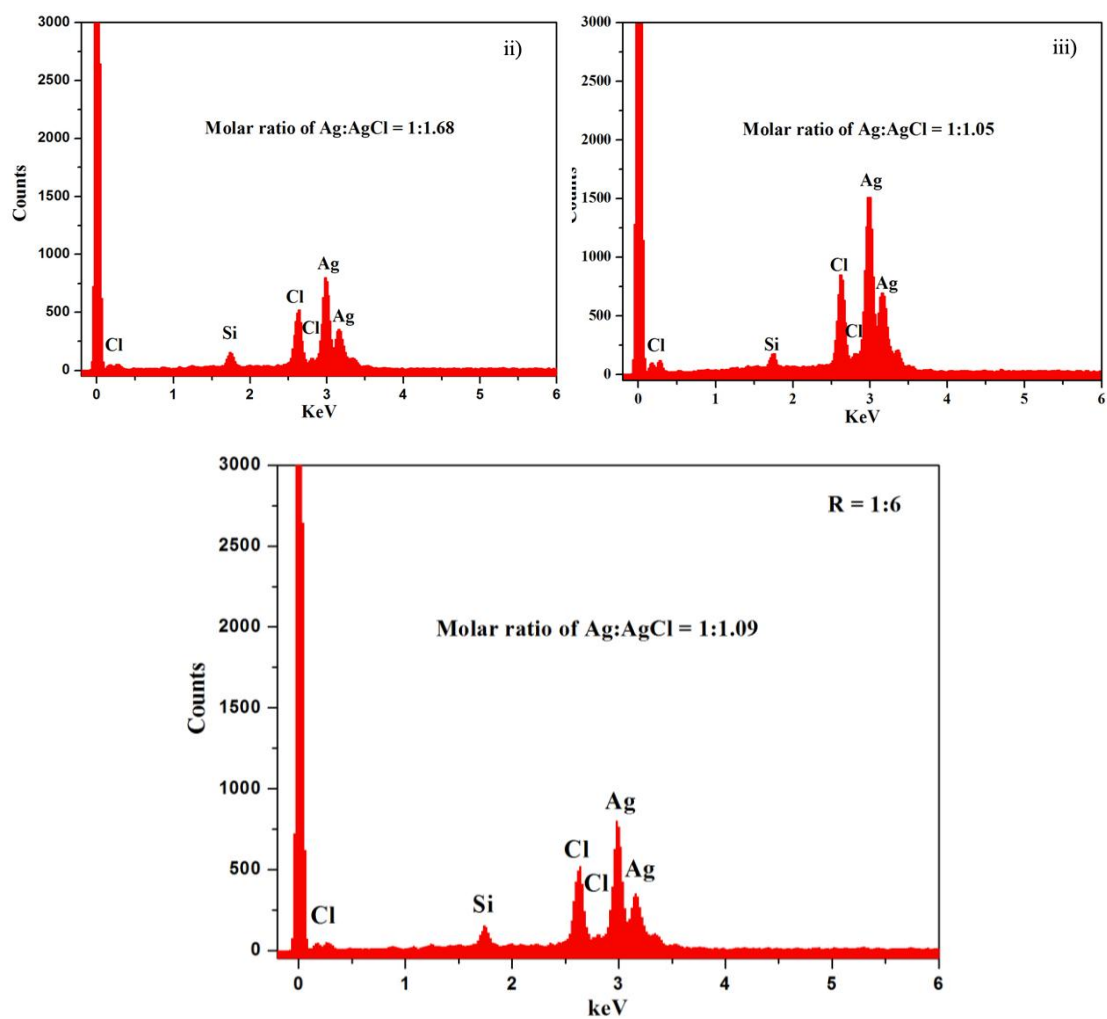
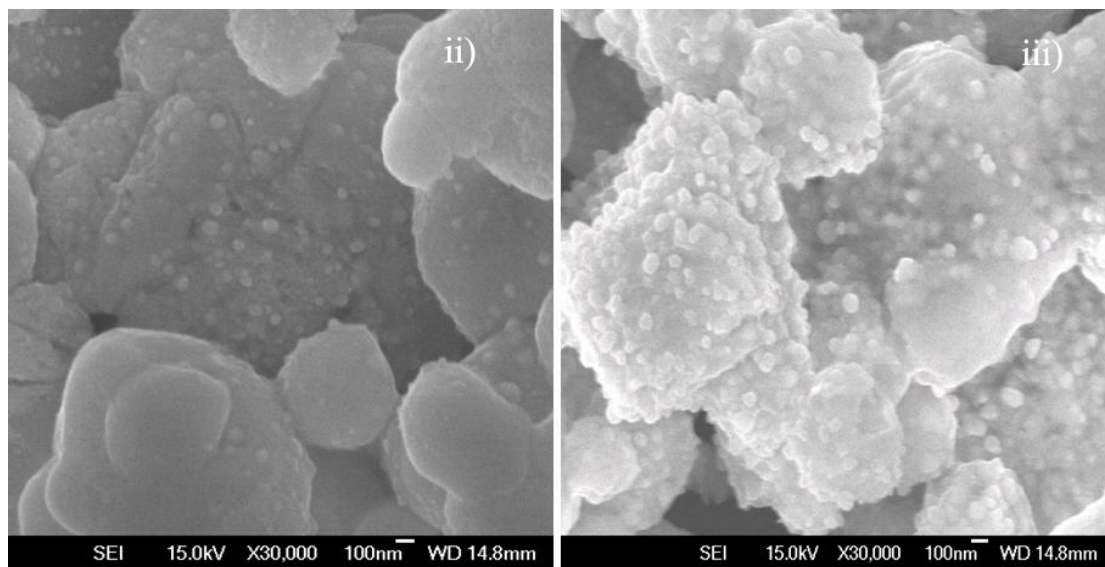
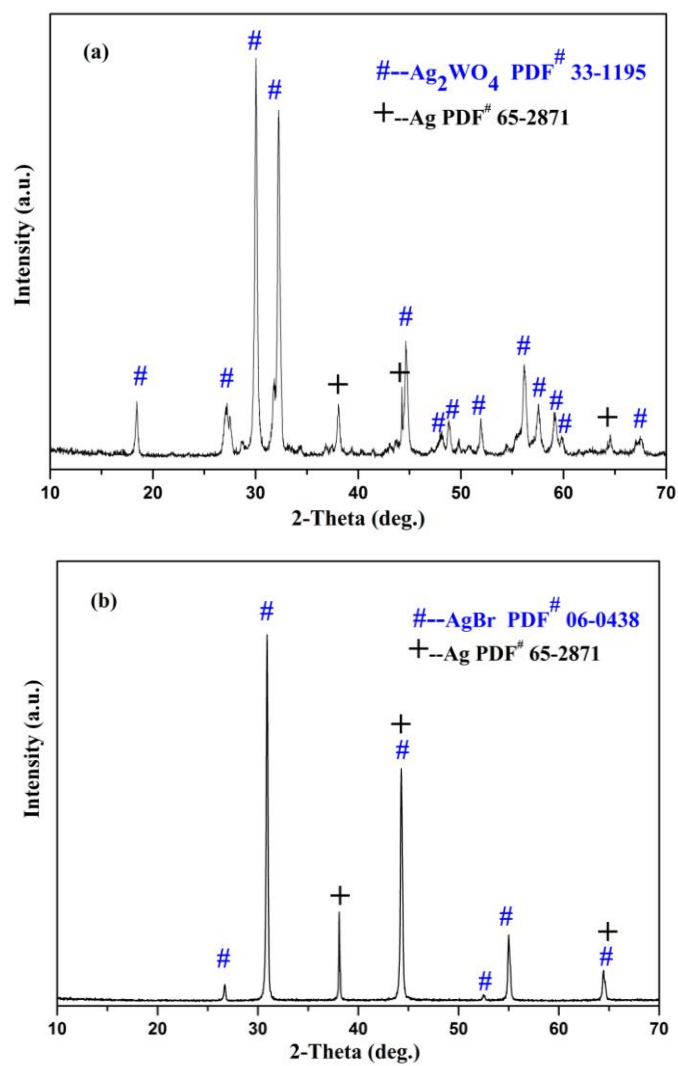


Figure S3. EDS spectra of the Ag@AgCl samples ii), iii), and sample obtained with  $R = 1:6$ .



**Figure S4.** SEM images of the as-prepared Ag@AgCl samples ii) and iii).



**Figure S5.** XRD spectra of as-obtained Ag@Ag<sub>2</sub>WO<sub>4</sub> (a), and Ag@AgBr (b) with room-temperature solid-state reaction.

