

Supporting information

Interface Kinetic Diffusion Reaction Leading to Fast and Continuous Generation of AgCl Nanocubes in NaCl Solution

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Table S1 The morphologies and size of AgCl samples prepared under different conditions

Samples	Potential	Concentration of NaCl (mM)	Concentration of Na ₂ SO ₄ (M)	Size of samples (nm)	Morphology	Stirring
A	3	1	0.1	400	Cubes	Without
B	3	2	0.1	600	Cubes	Without
C	3	4	0.1	800	Cubes	Without
D	3	8	0.1	1000	Cubes(with bad edges)	Without
A'	1.5	3	0.1	1200	Cubes	Without
B'	3	3	0.1	500	Cubes	Without
C'	4	3	0.1	500	Cubes	Without
D'	6	3	0.1	500	Cubes	Without
a	3	3	0	////	Thick AgCl layer	Without
b	3	3	0.16	300	Cubes	Without
c	3	3	0.32	200	Cubes	Without
a'	3	3	0.1	200-1000	Irregular particles	With
b'	3	3	0.1	400	Concave cubes	Without (bottom)

The production of AgCl nanocubes can be calculated using the equation E1:

$$\text{E1} \quad m_{\text{AgCl}} = \frac{I \cdot t}{e \cdot N} M_{\text{AgCl}} \quad (1)$$

where m_{AgCl} is the weight (g) of the produced AgCl nanocubes per h, I the current (A), t the time (s), and e the electrical charge (1.6×10^{-19}), N the Avogadro number, and M_{AgCl} the molar mass of AgCl.

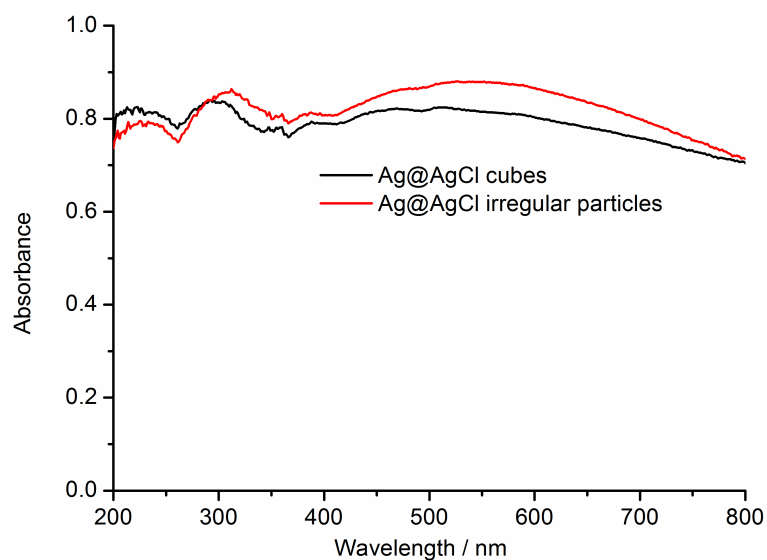


Figure S1. UV-VIS diffuse reflectance spectra of the samples: Ag@AgCl cubes (black) and Ag@AgCl irregular-shaped particles (red).

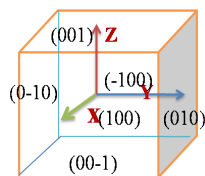


Figure S2. The crystallographic orientation of cubic AgCl crystal.

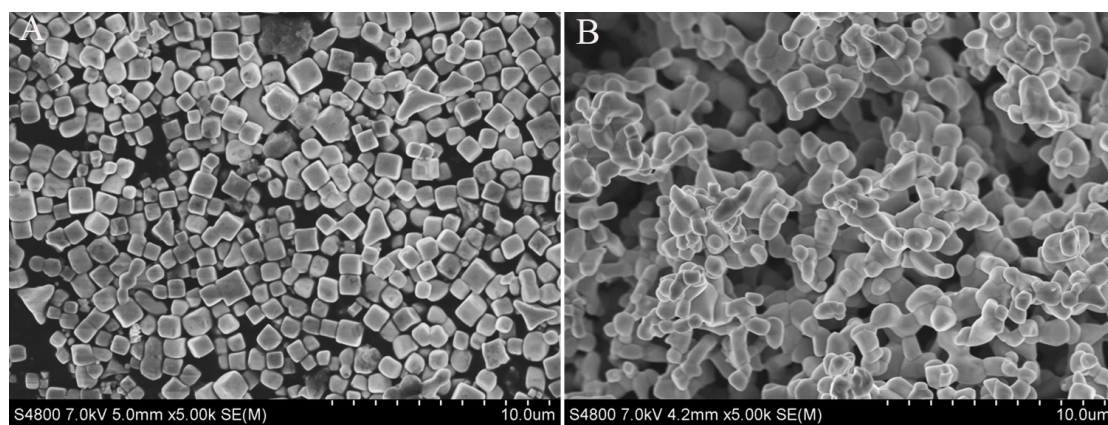


Figure S3. SEM images of Samples: AgCl cubes prepared by using electrochemical method (A); irregular-shaped AgCl prepared by traditional precipitation method (B).