In Situ Immobilization of Ag Nanoparticles on Keggin Heteropoly Blue Microtubes

Yan Shen,Jun Peng, Huanqiu Zhang, Changyun Chen, Fang Zhang and Alan M. Bond

Key Laboratory of Polyoxometalate Science of the Ministry of Education Faculty of Chemistry, Northeast Normal University, Changchun, Jilin, 130024, People’s Republic of China. Fax: (+86) 431-85099765; Tel: +86-431-5099667. E-mail: jpeng@nenu.edu.cn

School of Chemistry, Monash University, Clayton, Victoria 3800, Australia. E-mail: alan.bond@sci.monash.edu.au

Figure S1. Plot of electron number vs the mole number of AA in HPB-i (i = 1-4).

Figure S2. ESEM images of the outside wall of SiW$_{12}$ (a) and Ag/SiW$_{12}$/Ag microtubes (b), and the corresponding EDS spectra (c) and (d).
**Figure S3.** XPS spectrum of silver particles in Ag/SiW_{12}/Ag microtubes.

**Figure S4.** ESEM images of Ag NPs (left) and the statistical size distributions (right) derived from the outside wall of Ag/SiW_{12}/Ag microtubes obtained from HPB-i (i = 1, a; 2, b; 3, c).
Figure S5. ESEM images of Ag NPs (left) and the statistical size distributions (right) derived from the inside wall of Ag/SiW_{12}/Ag microtubes obtained from HPB-i (i = 1, a; 2, b; 3, c).