Electronic Supplementary Material (ESI) for Chemical Communications

Sequential chemical deposition of metal alloy jellyfish using polyaniline: redox chemistry at the metal polymer interface

Hsing-Lin Wang,*[a] Ping Xu,[ab] Elshan Akhadov[a] and Leeyih Wang [c]

[a] *Physical Chemistry and Spectroscopy, Chemistry Division, Los Alamos National Laboratory, Los Alamos, NM 87545, USA. Tel: 1 505 6679944; E-mail: hwang@lanl.gov*
[b] *Department of Chemistry, Harbin institute of Technology, Harbin 150001, China. Fax: 86 451 86418750; Tel: 86 451 86413702*
[c] *Condensed Matter Science, National Taiwan University, Taipei, Taiwan*

Additional Figures:

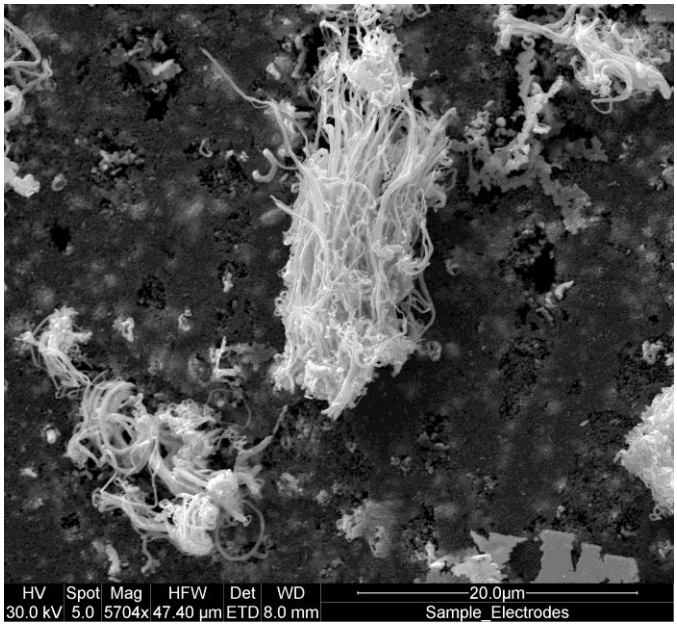

Figure S1. SEM image of the Ag nanoribbons formed on top of a layer of Au surfaces without affecting the morphology of the Au layer.

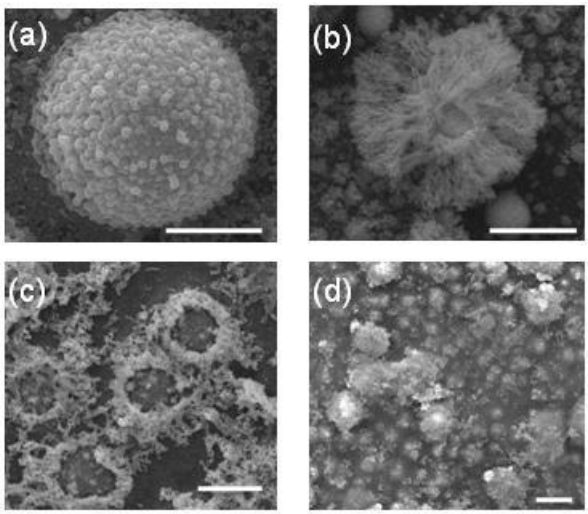

Figure S2. SEM images of metal structures prepared via sequential deposition of Ag and Au on a PANI substrate as a function of reaction time; (a) 5 min, (b) 30 min, (c) 60 min and (d) 24 h after Ag particle supported on polyaniline substrates was immersed in $AuCl_3$ aqueous solution. The scale bar is 5 μm.

Brief introduction of Figure S2: The first step is to deposit Ag particles on the PANI substrate. Then, Ag particles supported on the PANI substrate were immersed in $AuCl_3$ solution. Five minutes after immersed in an $AuCl_3$ aqueous solution, and the particle reveals little change in its morphology, see Fig. S2(a). Thirty minutes after immersion, the Ag particle is almost completely disintegrated into a flower-like morphology. EDAX results suggest this flower-like structure actually contains ~ 11% of Au and 89% of Silver. In one hour, the central portion of the Ag particle is completely vacant, and after 24 hours, some of the Ag particles have been completely wiped out from the PANI substrate surface, and a thin layer of Au is formed on the PANI substrate surface.