Supporting Information for:

Au Nanocluster Arrays on Self-assembled Block Copolymer Thin Films as Highly Active SERS Substrates with Excellent Re-producibility

Yale Shen, a Yuanjun Liu, a,* Wei Wang, b Fan Xu, b Chao Yan, b Junhao Zhang, a Jing Wang, a Aihua Yuan a,*

a School of Environmental and Chemical Engineering, Jiangsu University of Science and Technology, Zhenjiang 212003, P. R. China. Email: liuyuanjun@just.edu.cn; aihua.yuan@just.edu.cn; Tel: +86 0511-85639001

b School of Material Science and Engineering, Jiangsu University of Science and Technology, Zhenjiang 212003, P. R. China.
Fig. SI-1 The cross-sectional SEM image of the as-annealed PS-\textit{b}-P4VP thin film.

Fig. SI-2 TEM image of Au nanoparticle film prepared by heating the cluster-like array film (shown in Figure 1) at 200 °C in N\textsubscript{2} atmosphere for 30 min.
Fig.SI-3 SERS spectra of $10^{-5}$ M R6G methanol solution collected by the Au cluster-like array film (shown in Figure 1) and Au nanoparticle film prepared by heating the corresponding cluster-like array film at 200 °C in N$_2$ atmosphere for 30 min.

Fig.SI-4 SEM image of Au nanoparticle clusters prepared with PS-b-P4VP spherical micelle template.
**Fig.SI-5** SERS spectra of $10^{-5}$ M R6G methanol solution collected by the Au cluster-like array film (shown in Figure 1) and Au nanocluster film prepared with spherical micelle template.