Supporting Information

Configuration-controlled Au Nanocluster Arrays on Inverse Micelle Nano-patterns: Versatile Platforms for SERS and SPR Sensors

Yoon Hee Jang, Kyungwha Chung, Li Na Quan, Barbora Špačková, Hana Šipová,
Seyoung Moon, Won Joon Cho, Hae-Young Shin, Yu Jin Jang, Ji-Eun Lee, Saji Thomas Kochuvedu, Min Ji Yoon, Jihyeon Kim, Seokhyun Yoon, Jin Kon Kim, Donghyun Kim,
Jiří Homola, and Dong Ha Kim*
Fig. S1 (a) TEM image of citrate-capped Au NPs. Inset is magnified image. (b) UV-VIS absorption spectrum of citrate-capped Au NPs.
**Fig. S2** AFM height (left) and phase (right) images of core-centered Au NC (Au-CC) arrays deposited BCP films by one-step approach obtained from different immersion time in Au NP solution (Scale: 2 X 2 µm). Inset: magnified height images and sectional profiles along the dotted lines.
Fig. S3 AFM height (left) and phase (right) images of disordered Au NC (Au-DC) arrays deposited BCP films by two-step approach obtained from different immersion time in Au NP solution (Scale: 2 X 2 µm). Inset: magnified height images and sectional profiles along the dotted lines.
**Fig. S4** ImageJ-analyzed results (from corresponding SEM images of Figure 1 and 2) of BCP$_{\text{PS-}}$

\text{b-P4VP}_r$-templated (a) Au-CC and (b) Au-DC arrays.
<table>
<thead>
<tr>
<th>Immersion time</th>
<th>10 min</th>
<th>30 min</th>
<th>1 hr</th>
<th>3 hr</th>
<th>24 hr</th>
</tr>
</thead>
<tbody>
<tr>
<td>One-step approach (Au-CC arrays)</td>
<td>2.1</td>
<td>3.3</td>
<td>3.8</td>
<td>9.9</td>
<td>11.4</td>
</tr>
<tr>
<td>Two-step approach (Au DC arrays)</td>
<td>3.0</td>
<td>7.4*</td>
<td>9.3</td>
<td>25.5</td>
<td>34.8</td>
</tr>
</tbody>
</table>

* interpolated value, while all other values were taken from ImageJ-analyzed area fraction (Fig. S4).

**Table S1.** Calculated %-surface coverage of samples with respect to immersion time for the two approaches.
**Fig. S5** SPR angular spectra of Au film (gray line), biotin-thiol SAM on BCP(PS-b-P4VP)-templated Au DC arrays with 1 hr of immersion time (black line), and streptavidin (500 nM) (red line) in PBS medium.
**Fig. S6** SEM images (up) and corresponding ImageJ-analyzed results (bottom) of Au-CC arrays fabricated via one-step method varying Au NPs deposition time (1 hr ~ 24 hr). (Scale bar: 200 nm)
**Fig. S7** SEM images (up) and corresponding ImageJ-analyzed results (bottom) of Au-DC arrays fabricated via two-step method varying Au NPs deposition time (10 min ~ 24 hr). (Scale bar: 200 nm)
Table S2 Results of ImageJ analysis of BCP_{PS-b-P2VP}-templated Au NC arrays obtained from the SEM images in Fig. S6 and S7.