## Supporting Information

## Asymmetrical Molecular Decoration of Gold Nanorods for Engineering of Shape-Controlled AuNR@Ag Core-Shell Nanostructures

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Figure S1. The SEM image and UV-vis spectra of AuNRs stabilized by CTAC.



**Figure S2.** The SEM image and UV-vis spectra of AuNR@Ag obtained by utilizing the AuNRs without modification as seeds.



**Figure S3.** The SEM image and UV-vis spectra of AuNR@Ag obtained by utilizing the AuNRs modified by HS-PEG<sub>2000</sub> at both end and side parts as seeds.



Figure S4. The SEM image and UV-vis spectra of AuNR@Ag obtained by utilizing the AuNRs modified by HS-PEG2000 molecule at the end part and HS-PEG1000 molecule at the side of

nanorods.



**Figure S5.** The SEM image and UV-vis spectra of AuNR@Ag obtained by utilizing the AuNRs modified by HS-PEG<sub>2000</sub> at the end and HS-PEG-NH<sub>2</sub> (Mw=2000) at the side as seeds.



**Figure S6.** The SEM image and UV-vis spectra of AuNR@Ag obtained by utilizing the AuNRs modified by HS-PEG<sub>10000</sub> at the end and MEA at the side as seeds.