Electronic Supplementary Information for:

## Structural Controls of AuNR@mSiO<sub>2</sub>: Tuning of the SPR, and

## Manipulations of the Silica Shell Thickness and Structure

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**Fig. S1** (a) Normalized UV-vis spectra of the prepared AuNRs and AuNR@mSiO<sub>2</sub>. (b, c) TEM images of the corresponding AuNRs and AuNR@mSiO<sub>2</sub>.



**Fig. S2** Influences of different time of thermal treatment in ethanol-water solution on etching-caused LSPW changes of AuNR@mSiO<sub>2</sub>.



**Fig. S3** TEM images of AuNR@mSiO<sub>2</sub> in ethanol-water solution with the different etching time. The etching time and silica shell thicknesses at side of AuNRs were: (a) 0 min,  $8.1 \pm 0.9$  nm, (b) 24 min,  $8.0 \pm 0.6$  nm, (c) 56 min,  $8.6 \pm 0.9$  nm, and (d) 96 min,  $9.8 \pm 1.1$  nm, respectively.