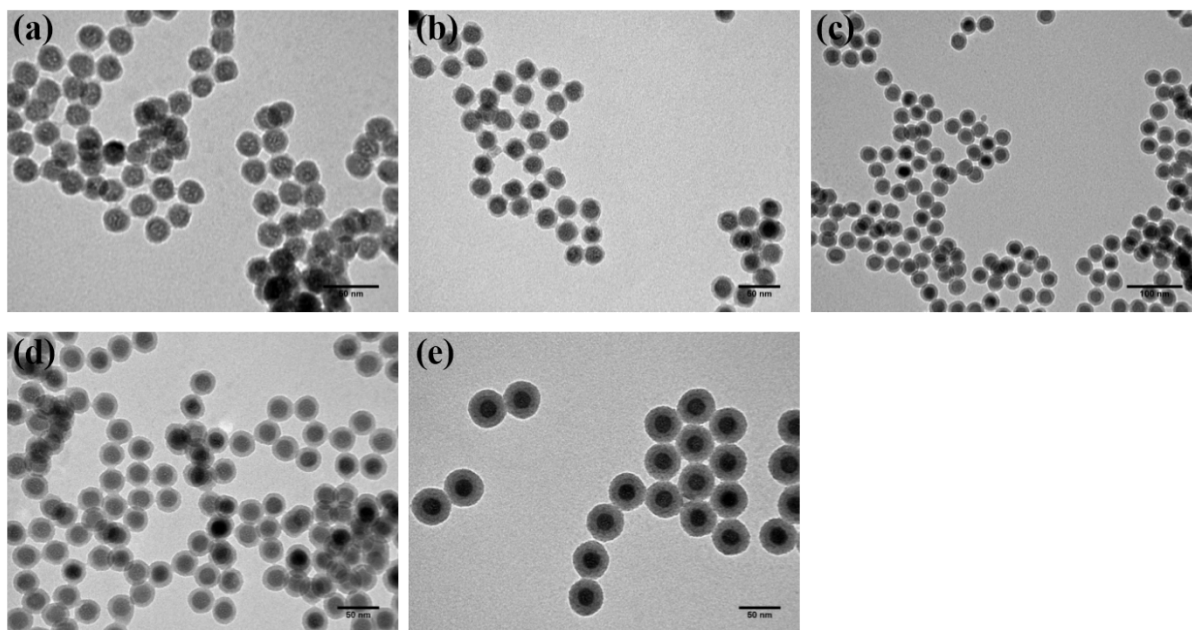


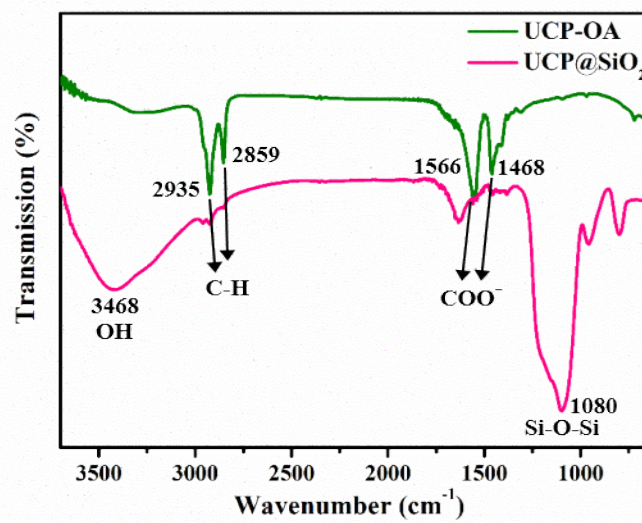
## Plasmon-induced Hyperthermia: Hybrid Upconversion NaYF<sub>4</sub>:Yb/Er and Gold Nanomaterials for Oral Cancer Photothermal Therapy

Chieh-Wei Chen<sup>a</sup>, Po-Han Lee<sup>a</sup>, Yung-Chieh Chan<sup>b</sup>, Michael Hsiao<sup>b,d,\*</sup>, Chung-Hsuan Chen<sup>b</sup>, Pin Chieh Wu<sup>e</sup>, Pei Ru Wu<sup>e</sup>, Din Pin Tsai<sup>e,f,\*</sup>, Datao Tu<sup>g</sup>, Xueyuan Chen<sup>g,\*</sup> and Ru-Shi Liu<sup>a,b,c,\*</sup>

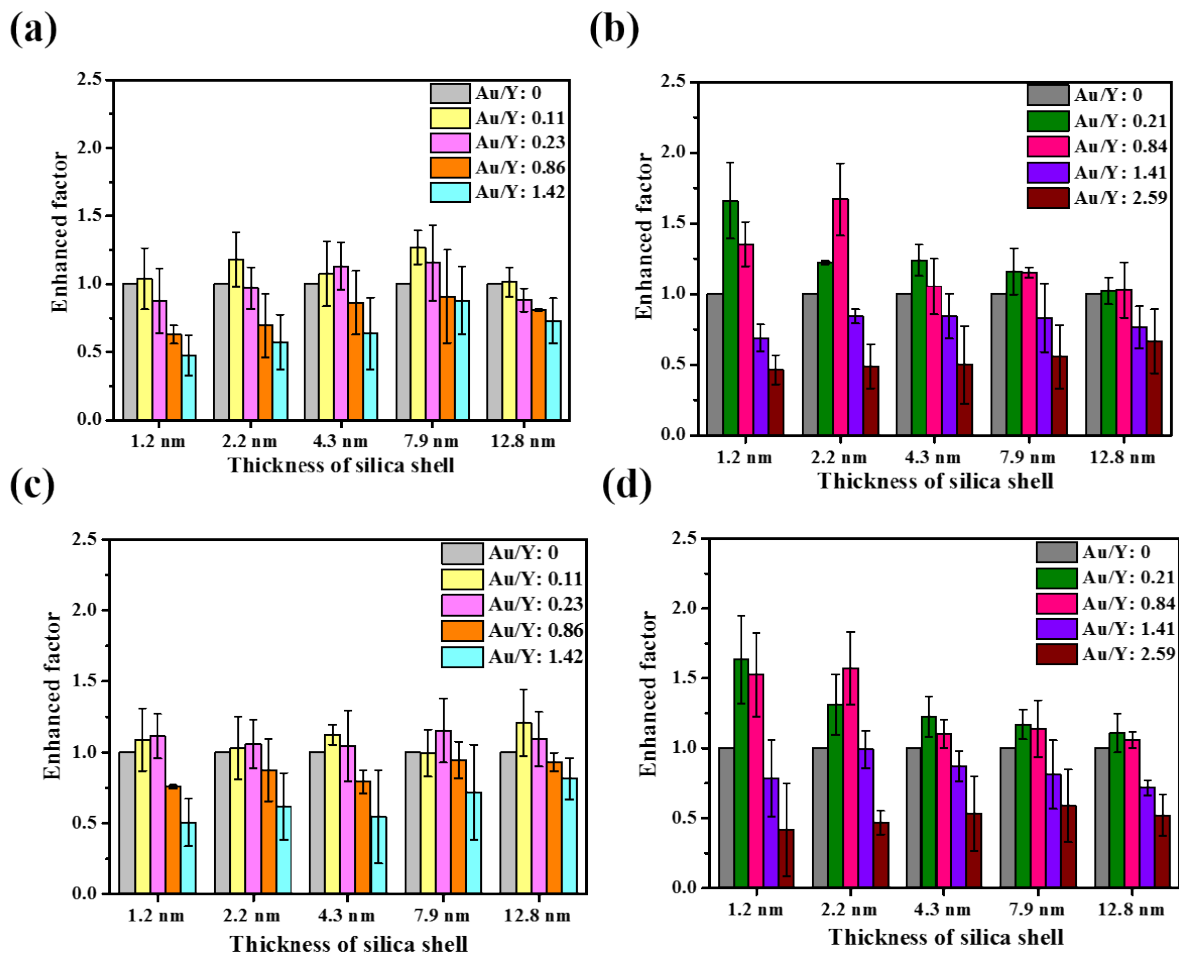
### Supporting Information



**Figure S1.** Different thicknesses of silica shell for UC@SiO<sub>2</sub>: (a) 1.2 nm, (b) 2.2 nm, (c) 4.3 nm, (d) 7.9 nm and (e) 12.8 nm.

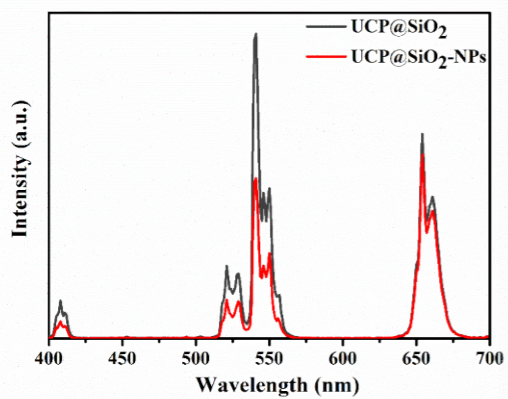


**Figure S2.** FT-IR spectra of UCP and UCP@SiO<sub>2</sub>.

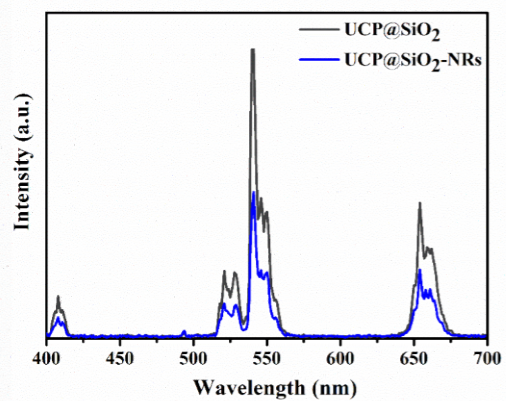


**Figure S3.** UCL emission for UCP@SiO<sub>2</sub>-NPs with different Au/Y ratios at (a) 408 nm and (c) 541 nm; UCP@SiO<sub>2</sub>-NRs at (b) 408 nm and (d) 541 nm.

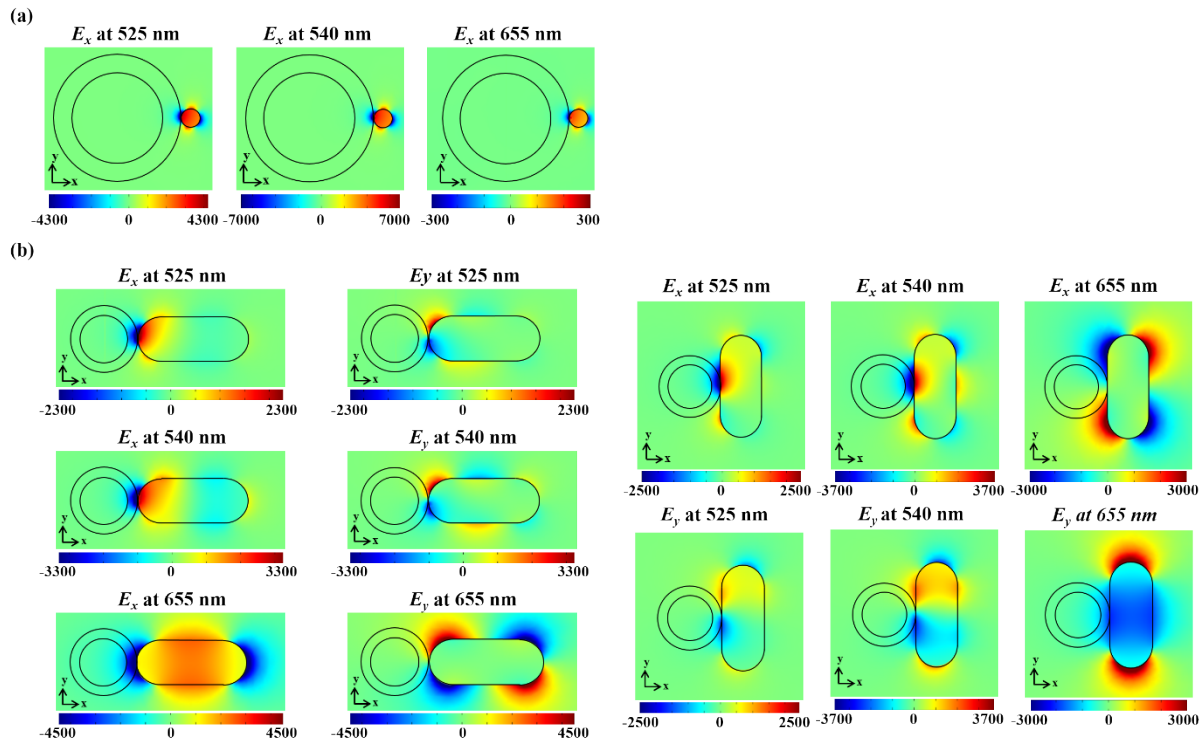
(a)



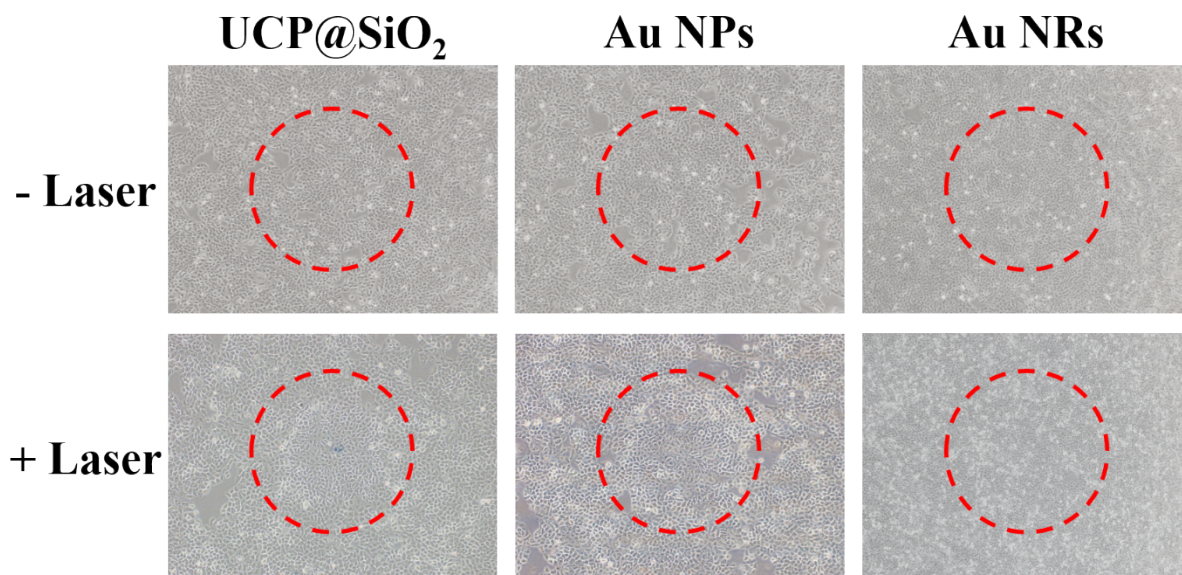
(b)



**Figure S4.** UCL emission of (a) UCP@SiO<sub>2</sub>-NPs and (b) UCP@SiO<sub>2</sub>-NRs when the thickness of the silica shell was 4.3 nm and with high Au/Y ratio.



**Figure S5.** Electric field distribution of (a) UCP@SiO<sub>2</sub>-NP and (b) UCP@SiO<sub>2</sub>-NR.



**Figure S6.** PTT for OECM-1 treatment with UCP@SiO<sub>2</sub>, Au NPs and Au NRs for 12 h. The dead cells were immediately stained by trypan blue.