## Electronic Supplementary Information

## Laser-irradiation induced Au-ZnO nanospheres with enhanced

## sensitivity and stability in ethanol sensing

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Fig. S1 (a) TEM image of a single Au-ZnO nanosphere and (b) the corresponding selected-area electron diffraction pattern.



Fig. S2 TEM images of Au-ZnO NSs before (a) and after (b) annealing treatment at 400 °C for 2 h in air.



**Fig. S3** (a) HRTEM image of the products obtained at 5 min in growth processes of Au-ZnO NSs via laser irradiation and (b) the magnified image corresponding to the area marked with red dotted square in (a).