Supplementary information for

Facile Au catalyst loading on inner shell of hollow SnO_2 spheres using Au-decorated block copolymer sphere templates and their selective H_2S sensing characteristics

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Pristine SnO_2 hollow spheres:

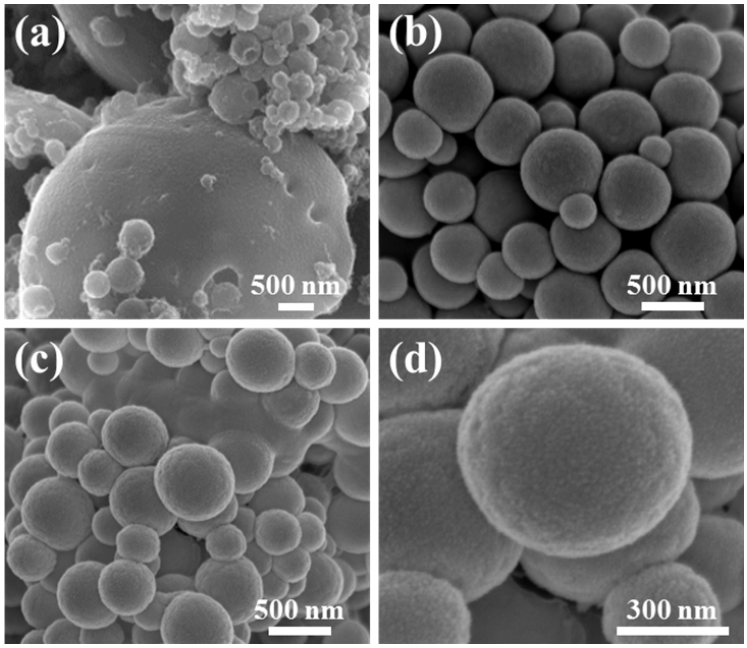

Fig. S1 SEM images of (a) as-prepared BCP spheres without Au decoration, (b) thin SnO_2 layer coated BCP sphere, (c) SnO_2 microspheres after calcination at 500 ˚C for 1 h and (d) magnified image of (c).

Coating of sensing materials on patterned electrodes & sensor testing setup:

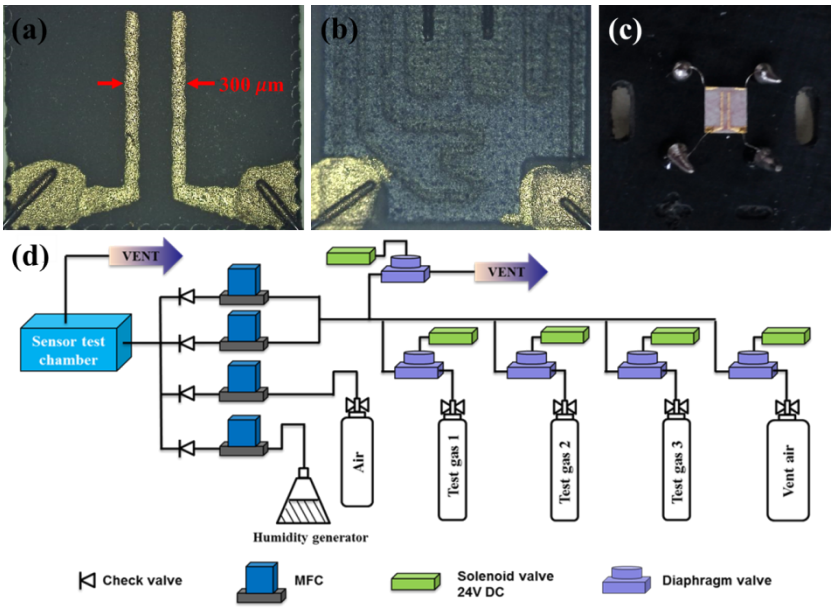

Fig. S2 (a) Optical microscopic image of patterned Au electrodes (front side), (b) a patterned Pt heater (back side), (c) sensing material coated onto an Al_2O_3 substrate, and (d) schematic illustration of sensor testing setup.

Size distribution of Au NPs on Au-BCP spheres:

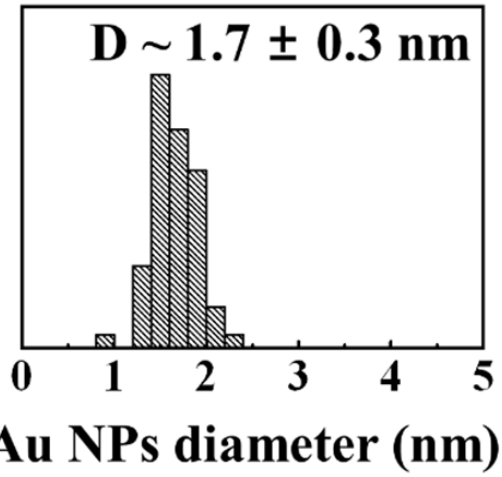

Fig. S3 The histogram represents the diameter distribution of the Au NPs on the BCP spheres.

The diameter distribution of the Au NPs, which have an average diameter of 1.7 ± 0.3 nm, on the sphere was determined from a TEM image using image-analysis software.[1]

Au nanoparticle size & distribution analysis using TEM :

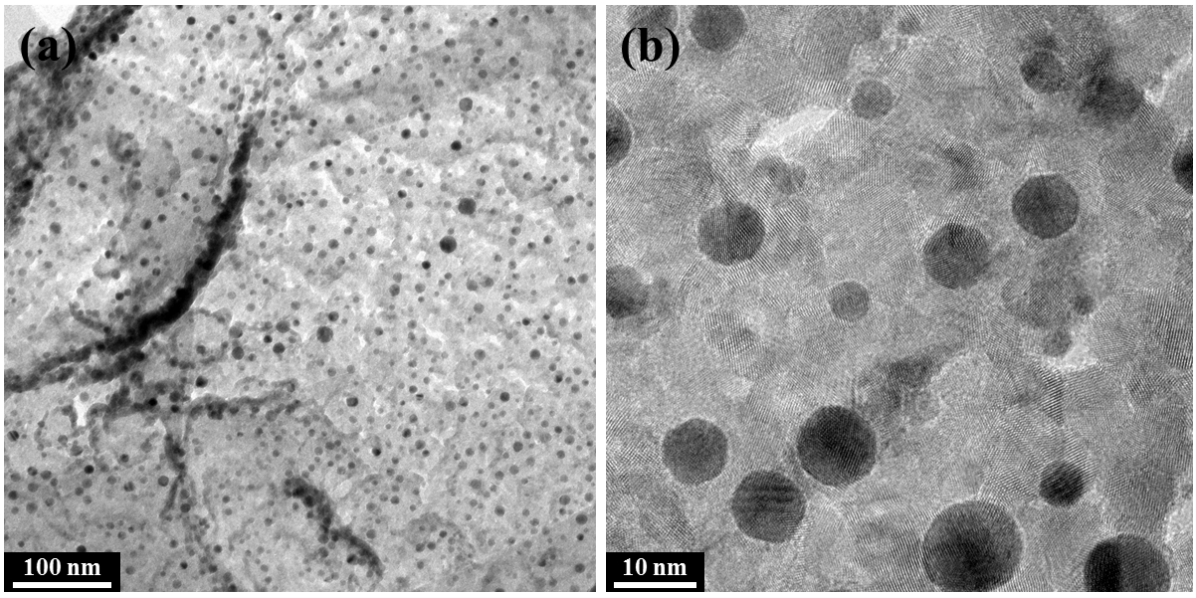

Fig. S4 (a) TEM image of Au functionalized SnO_2 layer and (b) magnified TEM image of (a).

References

1. M. P. Kim, D. J. Kang, D. W. Jung, A. G. Kannan, K. H. Kim, K. H. Ku, S. G. Jang, W. S. Chae, G. R. Yi and B. J. Kim, *ACS Nano*, 2012, 6, 2750-2757.