Supporting Information

Highly dispersed Au nanoparticles immobilized on Zr-based metal–organic frameworks as heterostructured catalyst for CO oxidation

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S1

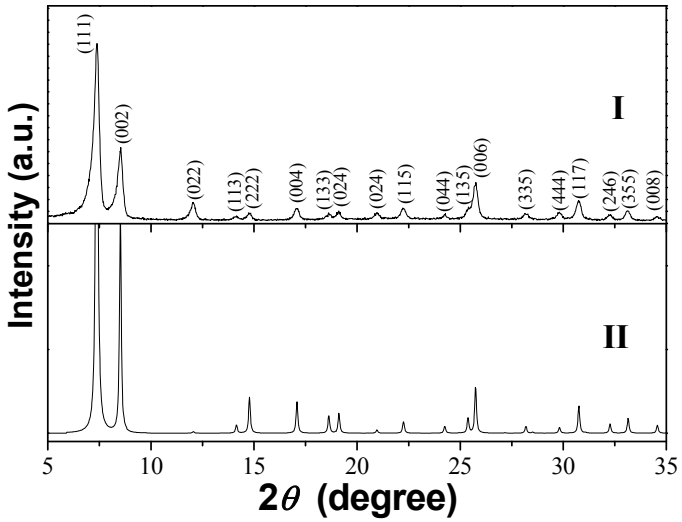

Fig. S1 Comparison between experimental (I) and simulated (II) powder XRD patterns of UIO-66

S2

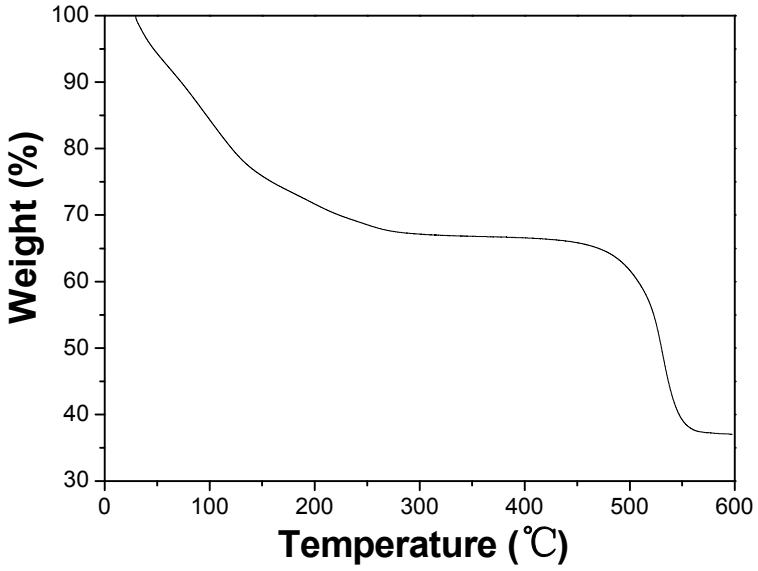

Fig. S2 Thermogravimetric analyses (TGA) curve of as-prepared UIO-66 MOFs in a flowing air.

S3

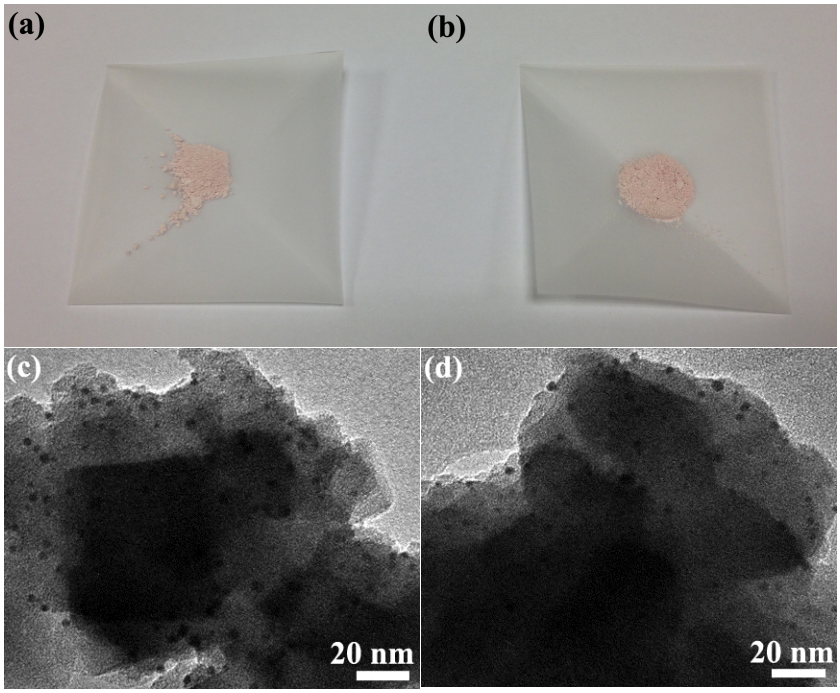

Fig. S3 Macroscopic digital photo images of 2.8 wt% Au@UIO-66 (a) before and (b) after being washed five times and 20-min sonication, TEM images of 2.8 wt% Au@UIO-66 (c) before and (d) after being washed five times and 20-min sonication. Comparative images indicate that highly dispersed Au nanoparticles were effectively immobilized by Zr-based MOFs.

S4

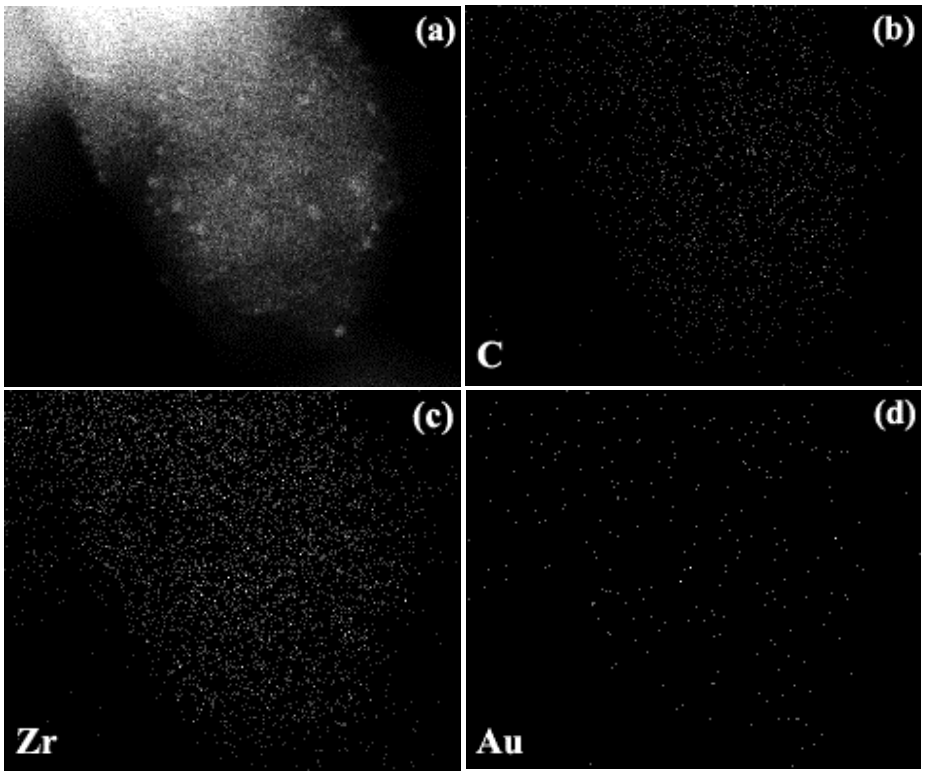

Fig. S4 (a) HAADF-STEM image of Au@UIO-66 and its elemental mapping for (b) C, (c) Zr, and (d) Au.

S5

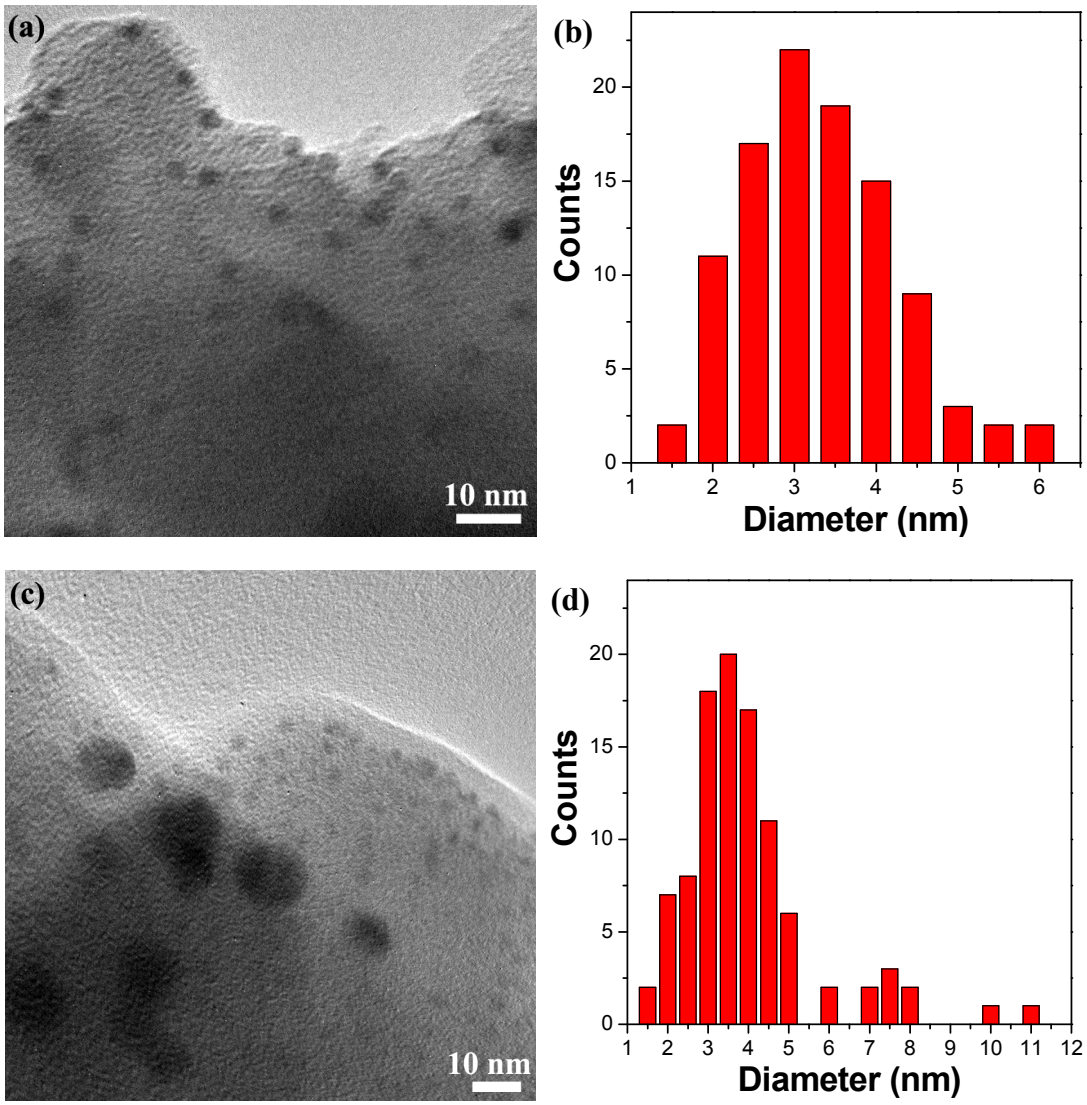

Fig. S5 (a) TEM image of 1.5 wt% Au@UIO-66 and (b) corresponding size distribution of Au nanoparticles; (c) TEM image of 4.0 wt% Au@UIO-66 and (d) corresponding size distribution of Au nanoparticles.

S6

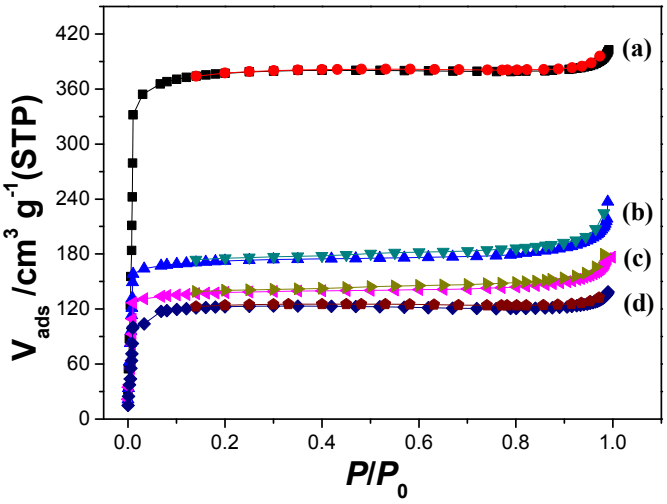

Fig. S6 (a) Nitrogen adsorption isotherms of (a) UIO-66, (b) 1.5 wt% Au@UIO-66, (c) 2.8 wt% Au@UIO-66, and (d) 4.0 wt% Au@UIO-66 with being degassed at 200 °C.