Supporting Information

Urchin-like Pd@CuO-Pd Yolk-shell Nanostructures: Synthesis, Characterization and Electrocatalysis

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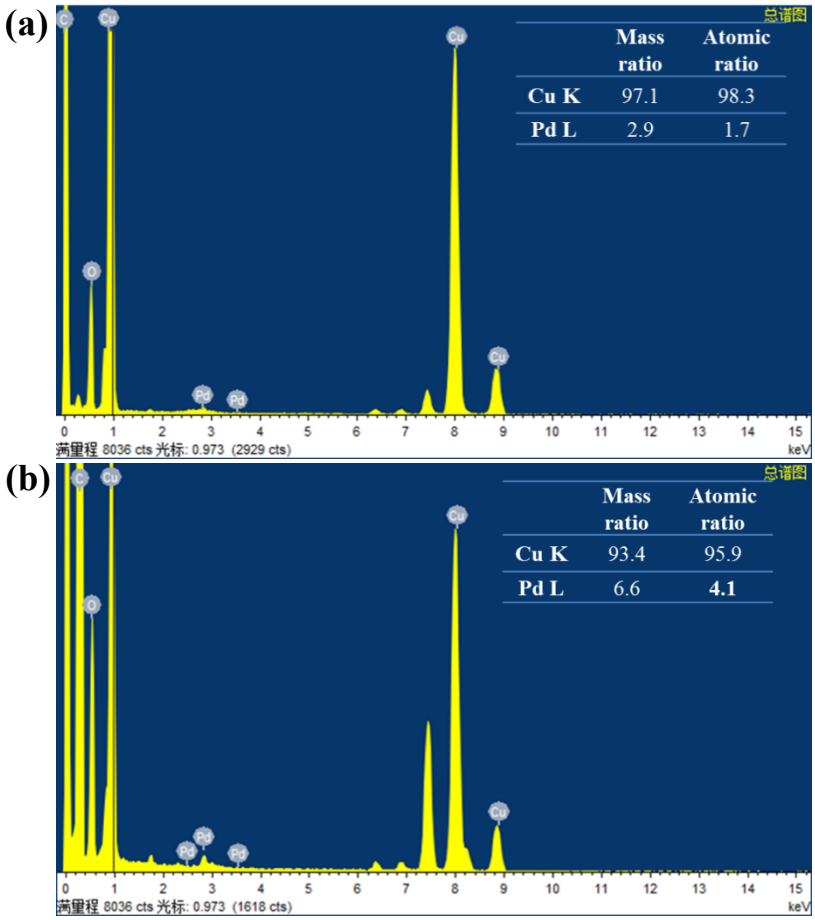

Figure S1. The EDS data of (a) the Pd@Cu_2O truncated octahedrons and (b) the urchin-like Pd@CuO-Pd yolk-shell nanostructures.

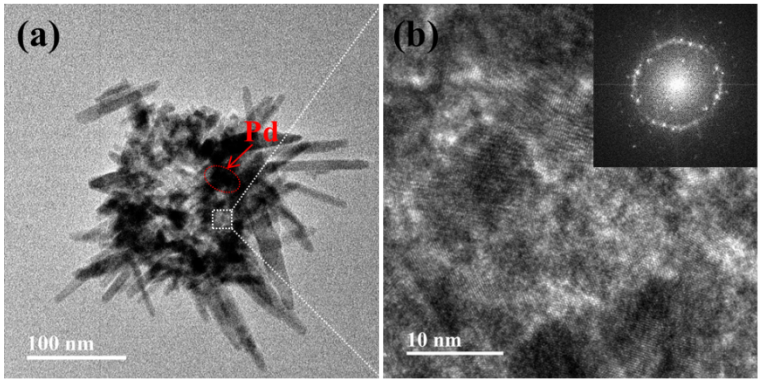

Figure S2. TEM image and HRTEM image of the urchin-like Pd@CuO-Pd yolk-shell nanostructures. Inset: The selected-area electron diffraction (SAED) pattern.

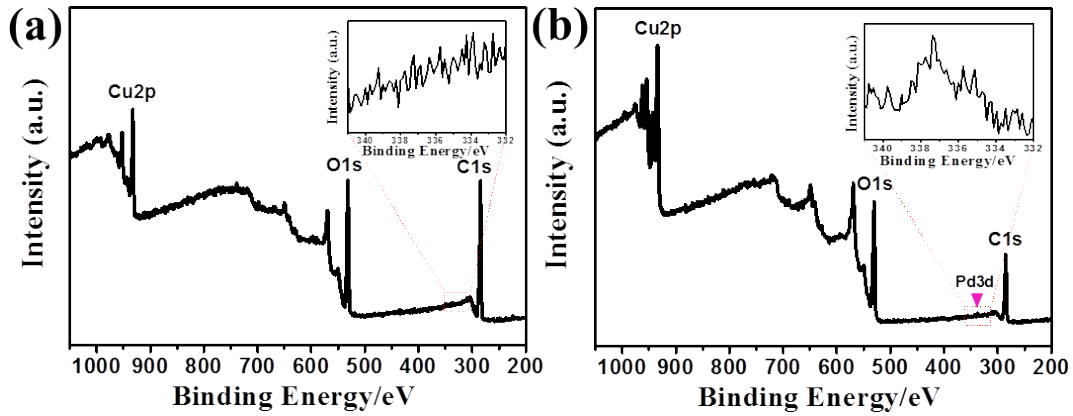

Figure S3. The survey XPS spectra of (a) the Pd@Cu_2O truncated octahedrons and (b) the urchin-like Pd@CuO-Pd yolk-shell nanostructures.

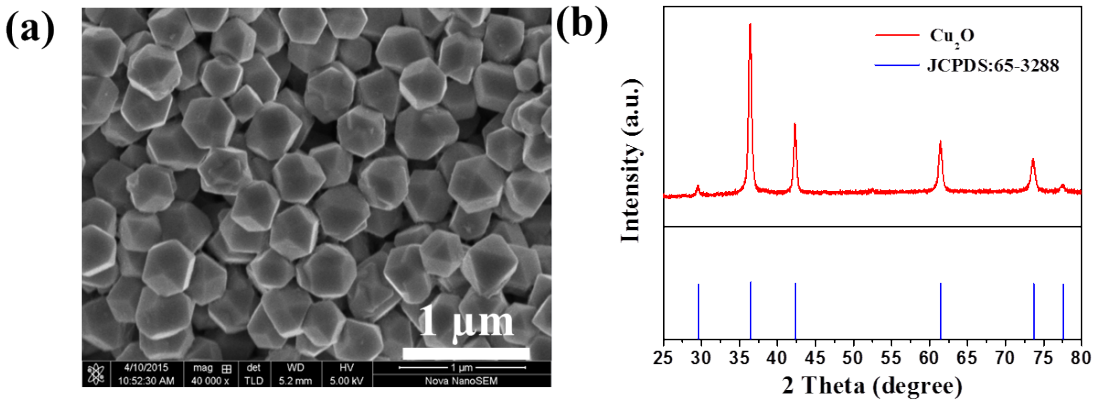

Figure S4. (a) SEM image and (b) XRD patterns of pure Cu_2O nanoparticles.

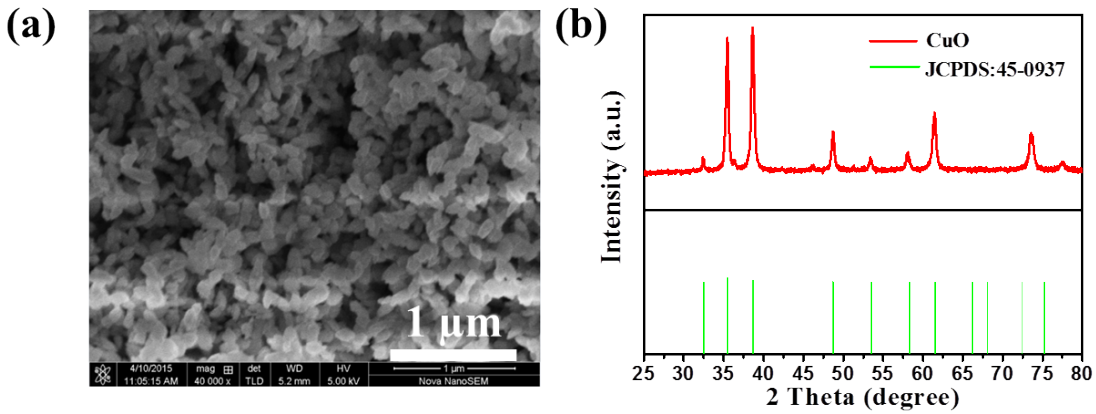

Figure S5. (a) SEM image and (b) XRD patterns of the CuO nanoparticles.

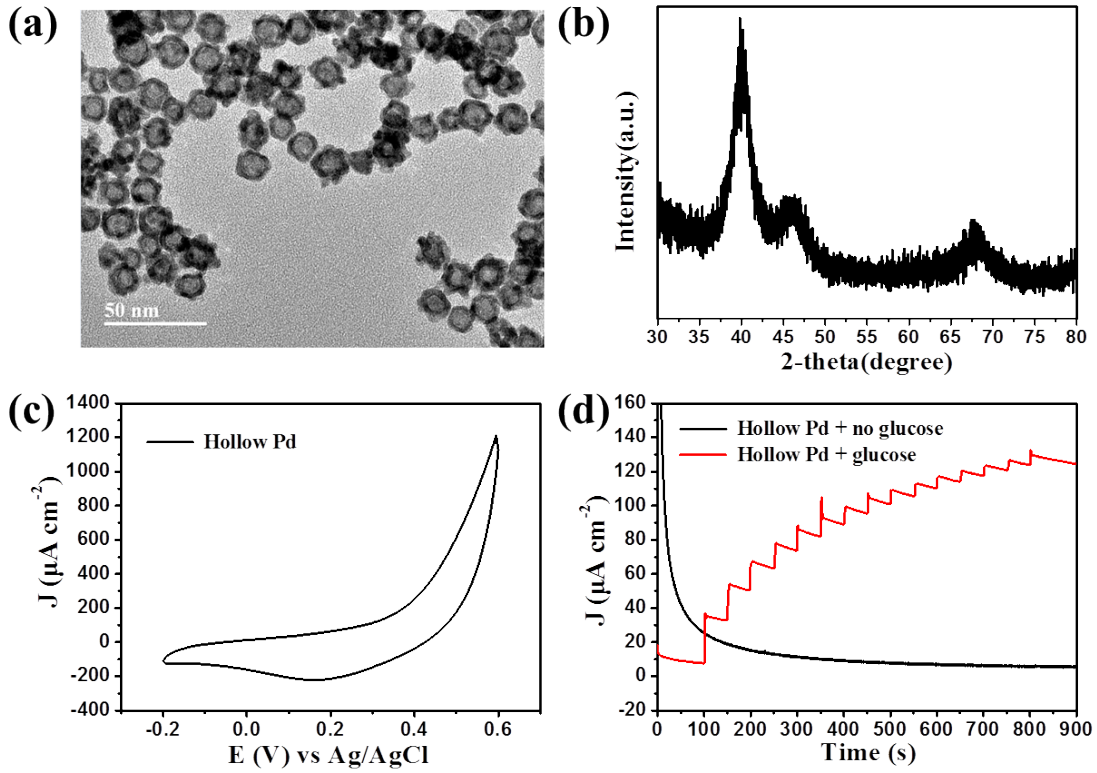

Figure S6. (a) TEM image and (b) XRD patterns of the hollow Pd nanoparticles. (c) CV curves of the hollow Pd nanoparticles in N_2-saturated 0.1 M KOH solution with 3 mM glucose at a scan rate of 100 mV s^{-1}. (d) Amperometric response of the hollow Pd nanoparticles after successive addition of glucose in N_2-saturated 0.1 M KOH at 0.5 V (vs Ag/AgCl).

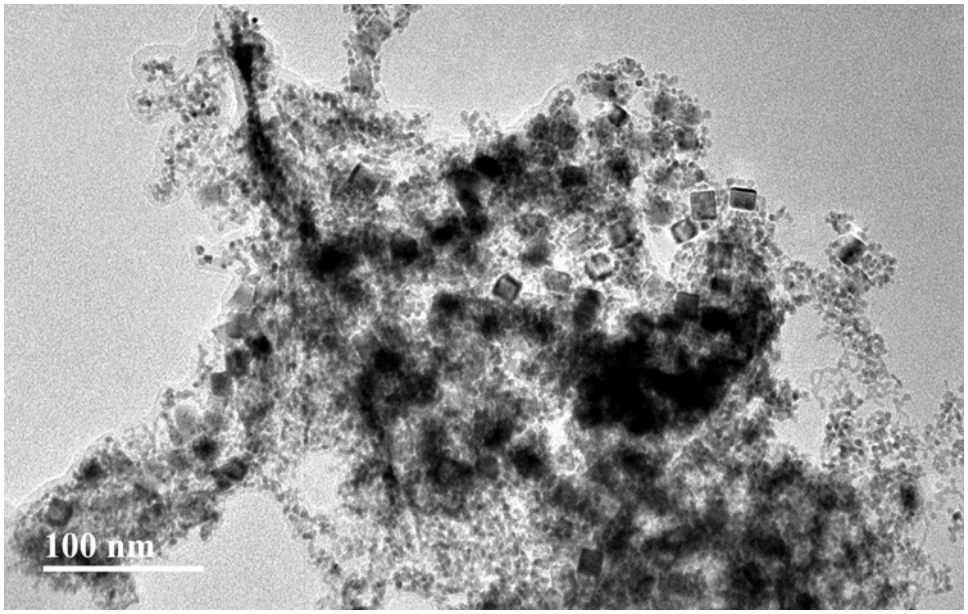

Figure S7. TEM image of the Pd mixtures obtained by etching CuO in the urchin-like Pd@CuO-Pd yolk-shell nanostructures.

Table S1. Comparison of performance of some non-enzymatic glucose sensors.

Materials	Sensitivity (μA cm^{-2} mM^{-1})	Response time (s)	Linear Range	Ref.
Pd@CuO-Pd	695	< 3 s	10 μM-6 mM	This work
CuO fibers	431.3	1	6 μM-2.5 mM	1
CuO nanoparticles	629	--	5 μM-6 mM	2
CuO nanospheres	404.53	--	1 μM-2.55 mM	3
Cu nanocluster/CNTs	250	5	0.7μM-3.5 mM	4
Pd@Cys-C_{60}	35.46	--	2.5μM-1.0mM	5
Cu/Cu_2O HMs	476	< 2	0.22 mM-10.89 mM	6
Cu_2O/GNs	285	<9	0.3 mM-3.3 mM	7
Cu_2O nanocubes	200	<9	--	7
Pt-Pb nanowire	11.25	~10	up to 11 mM	8
Pd/graphene hybrid	--	9	10μM-5 mM	9

Notes and references

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