Supporting Information

Facile synthesis of $PtCu_3$ alloy hexapods and hollow nanoframes as highly active electrocatalysts for methanol oxidation

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Table S1. ICP-AES data and ECSA of the PtCu hexapods and hollow nanoframes as well as the commercial Pt/C.

Samples	n_{Pt}:n_{Cu}*	Pt/Cu atomic ratio	composition	ECSA(m^2/g_{pt})**
Hexapods	1:3	1:2.58	$Pt_{28}Cu_{72}$	34.2
Hollow nanoframes	1:3	1:2.49	$Pt_{29}Cu_{71}$	73.1
Pt/C	/	/	/	33.9

*: Molar ratio between the Pt and Cu salt precursors fed in the synthesis.

**: The ECSA was calculated from CV curves in Figure S4.

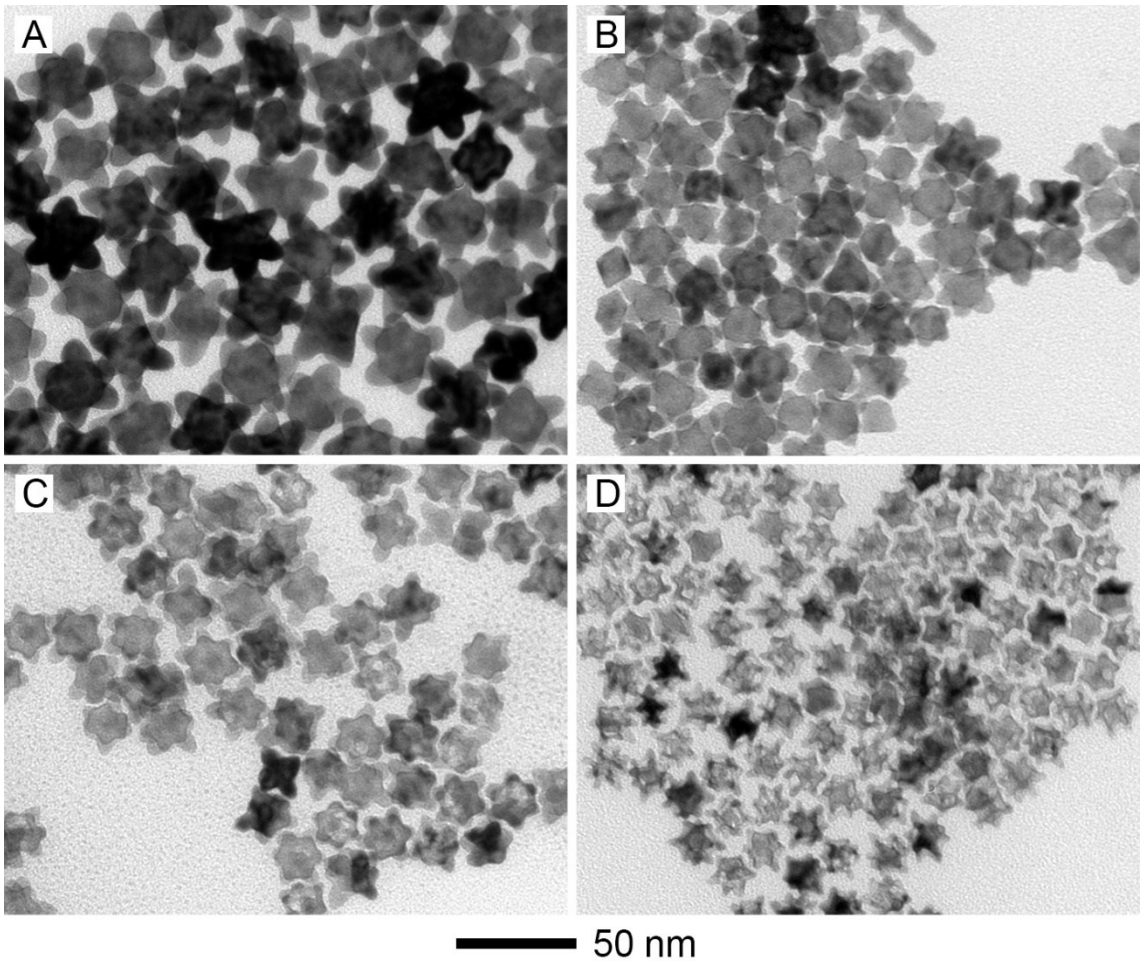

Figure S1. TEM images of the PtCu nanostructures prepared using the standard procedure, except for different temperatures: (a) 220, (b) 210, (c) 200, and (d) 190 ^{o}C.

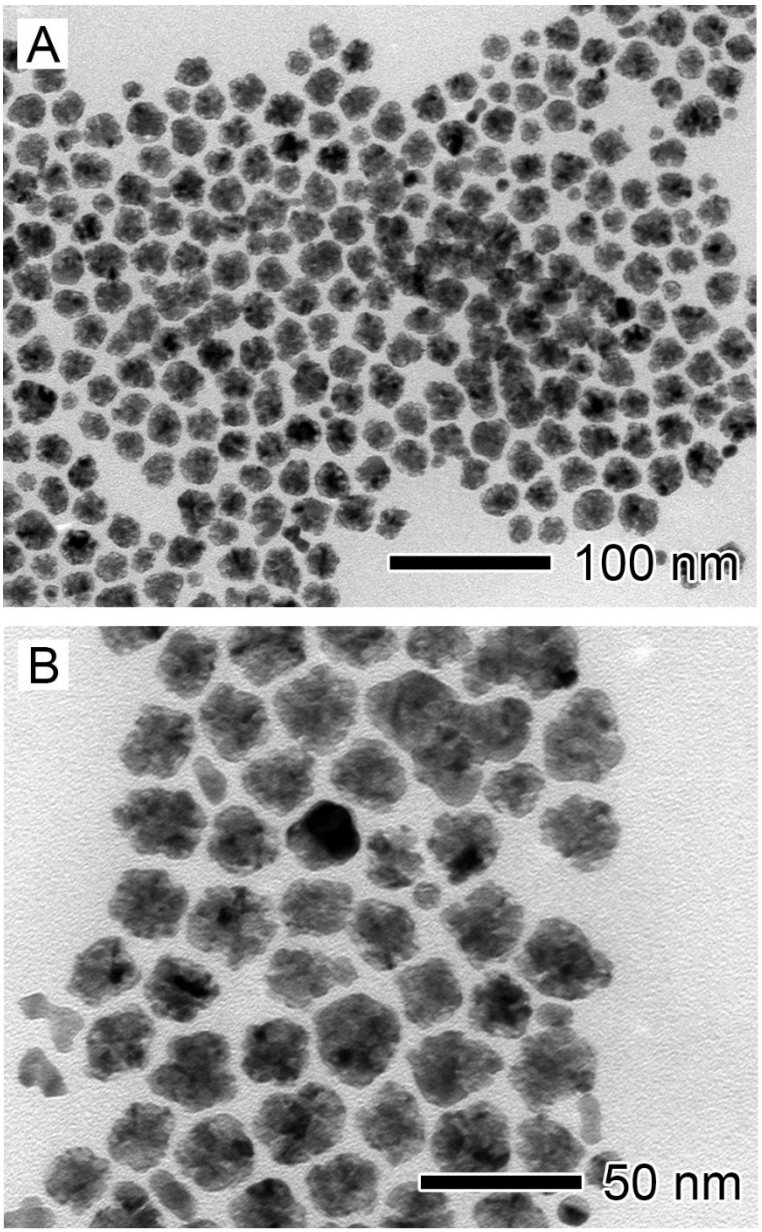

Figure S2. (A, B) TEM images of the PtCu nanocrystals prepared by replacing H_2PtCl_6 with Pt $(acac)_2$ under otherwise identical experimental conditions.

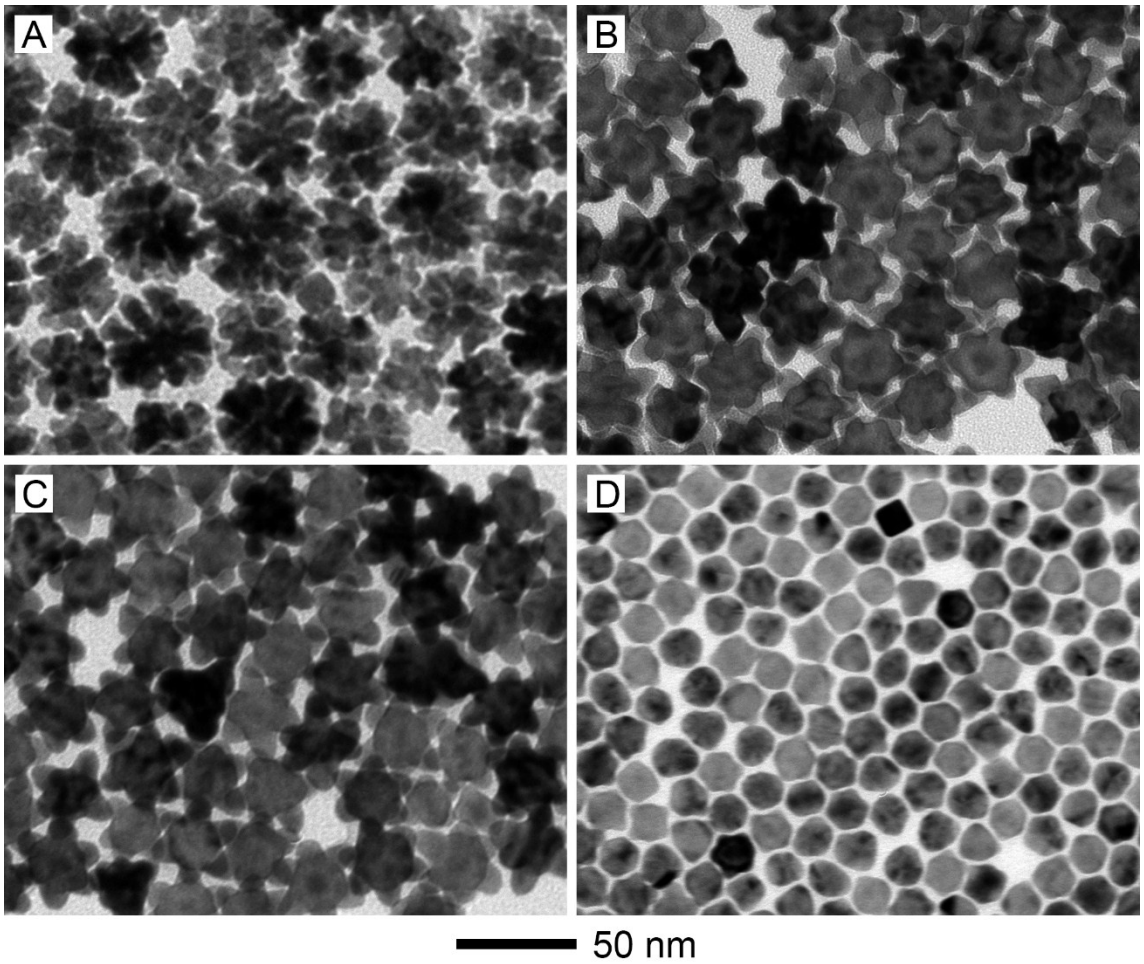

Figure S3. TEM images of $PtCu_3$ nanocrystals prepared using the standard procedure, except for the different amount of TOPO: (A) in the absence of TOPO, (B) 55 mg, (C) 110 mg and (D) 220 mg.

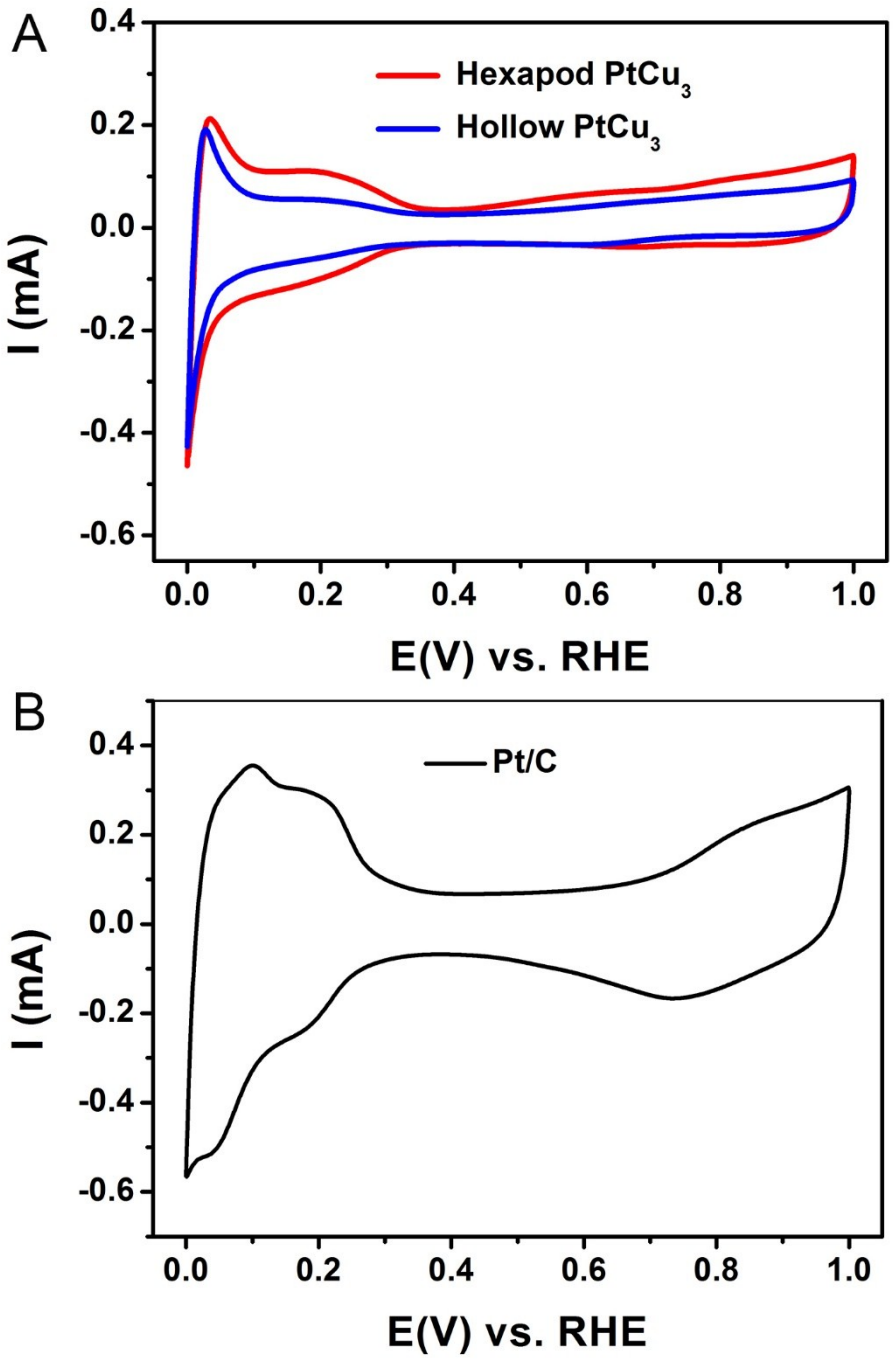

Figure S4. Cyclic voltammograms (CVs) of (A) $PtCu_3$ alloy hexapods and hollow nanoframes and (B) commercial Pt/C in an Ar-saturated 0.1 M $HClO_4$ solution at a sweep rate of 50 mV/s.