

## **Electronic Supplementary Information**

### **Platinum-Cobalt Alloy Networks for Methanol Oxidation Electrocatalysis**

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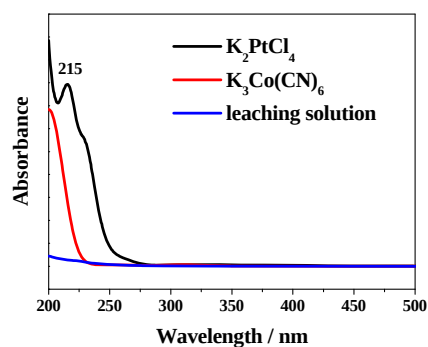
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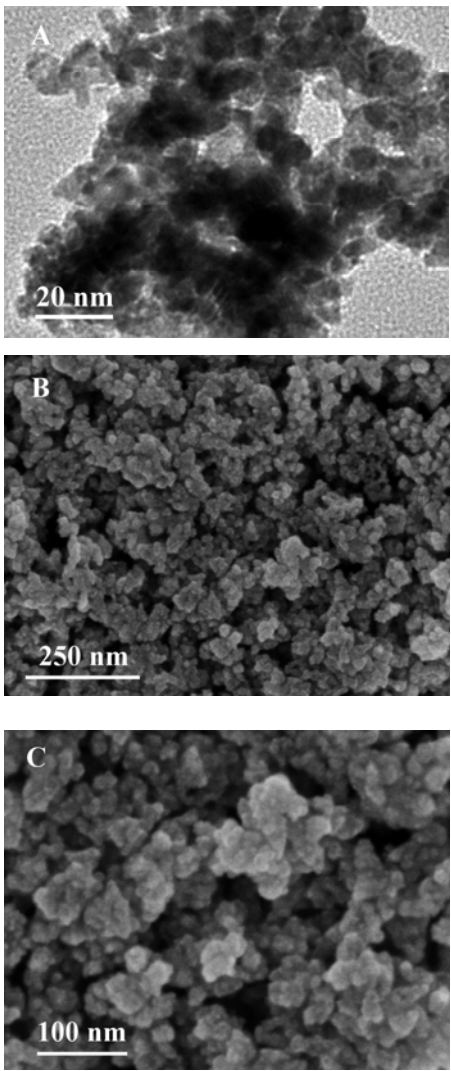
*E-mail:* ndchenyu@yahoo.cn (Y. Chen); tangyawen@njnu.edu.cn (Y. Tang)



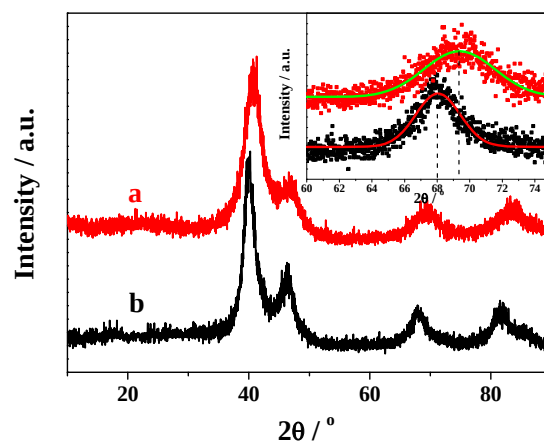
**Fig. S1.** Digital photograph of the as-prepared  $\text{K}_2\text{PtCl}_4/\text{K}_3\text{Co}(\text{CN})_6$  cyanogel.



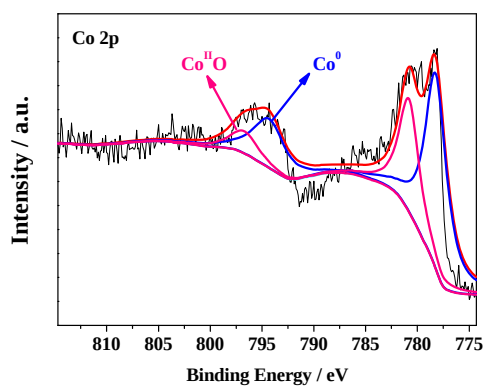
**Fig. S2.** UV-vis spectra of aqueous  $\text{K}_2\text{PtCl}_4$  (black line) and  $\text{K}_3\text{Co}(\text{CN})_6$  (red line) solution and the leaching solution of the as-prepared  $\text{K}_2\text{PtCl}_4/\text{K}_3\text{Co}(\text{CN})_6$  cyanogel (blue line).



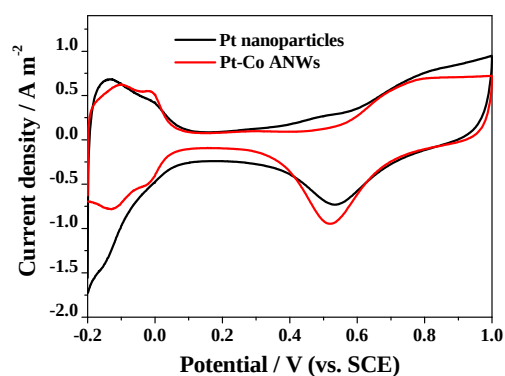
**Fig. S3** (A) TEM and (B, C) SEM images of Pt nanoparticles.



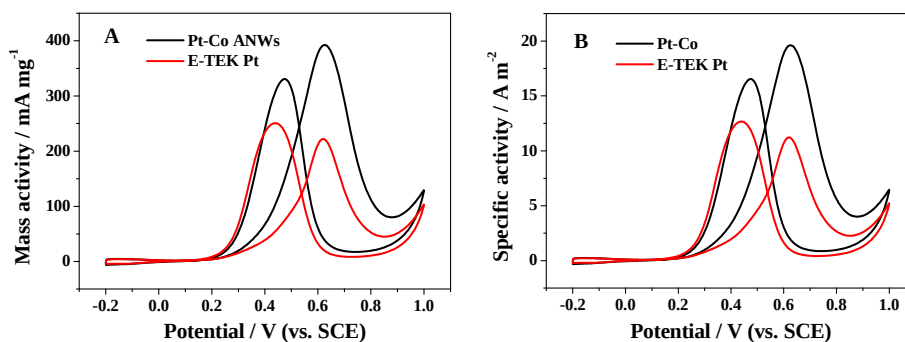
**Fig. S4.** XRD patterns of (a) the Pt-Co ANWs and (b) the Pt-Co-control nanoparticles.



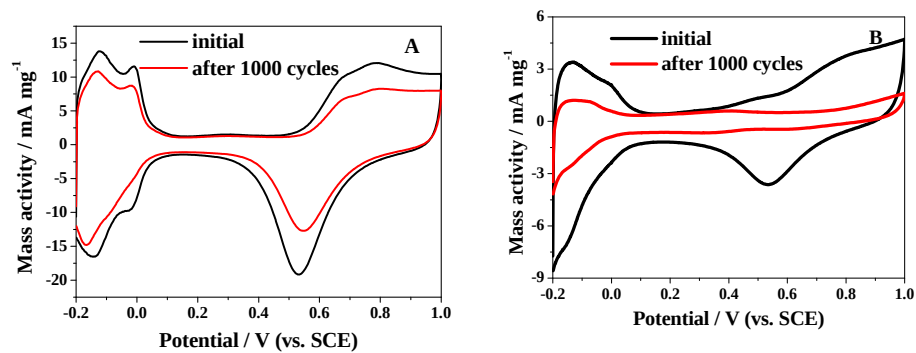
**Fig. S5.** XPS spectra of Pt-Co ANWs in the Co 2p region.



**Fig. S6.** CV curves for (red line) the Pt-Co ANWs and (black line) the Pt nanoparticles in N<sub>2</sub>-saturated 0.5 M H<sub>2</sub>SO<sub>4</sub>, which are normalized to the real Pt surface areas. Scan rate: 50 mV s<sup>-1</sup>.



**Fig. S7.** CV curves for (black line) the Pt-Co ANWs and (red line) the E-TEK Pt black in N<sub>2</sub>-saturated 0.5 M H<sub>2</sub>SO<sub>4</sub> and 0.5 M CH<sub>3</sub>OH solution, which are normalized to (A) the Pt mass (mass activity) and (B) the real Pt surface areas (specific activity), respectively. Scan rate: 50 mV s<sup>-1</sup>.



**Fig. S8.** Cyclic voltammograms of (A) the Pt-Co ANWs and (B) the pure Pt nanoparticles in 0.5 M H<sub>2</sub>SO<sub>4</sub> solution before and after 1000 cycles at the scan rate of 50 mV s<sup>-1</sup>.