Electronic Supplementary Material (ESI) for New Journal of Chemistry.

Supporting Information

Fine Co Nanoparticles Encapsulated in N-Doped Porous Carbon for Efficient Oxygen Reduction

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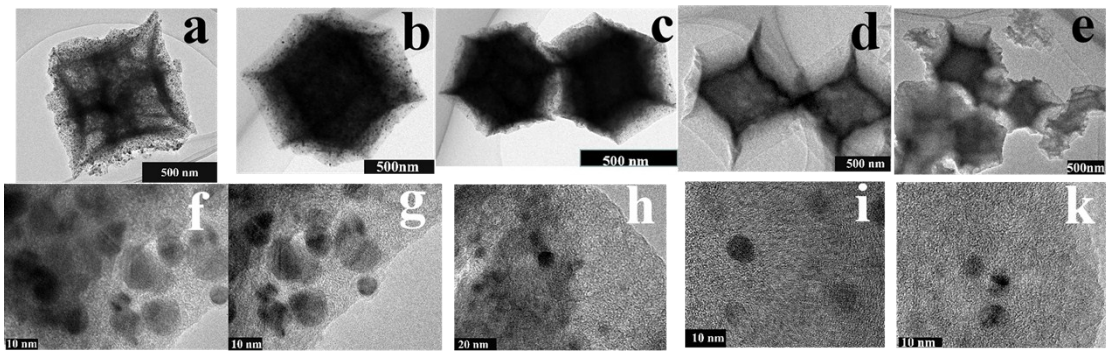

Fig.S1. The TEM and HRTEM of Co@NPC(**a,f**), Co@NPC-APt(t=4h)(**b,g**), Co@NPC-APt(t=8h)(**c,h**), Co@NPC-APt(t=12h)(**d,i**) and Co@NPC-APt(t=16h)(**e,k**)

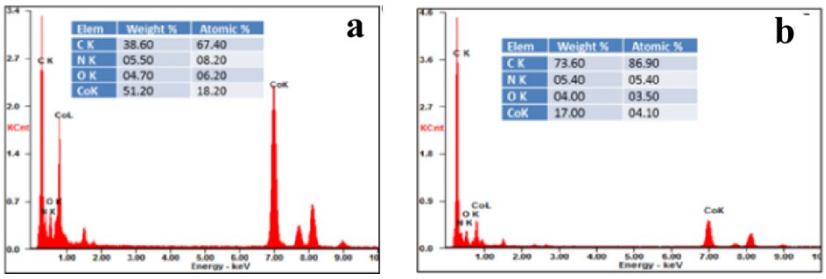

Fig.S2. EDS of Co@NPC(**a**) and Co@NPC-APt(t=12h)(**b**)

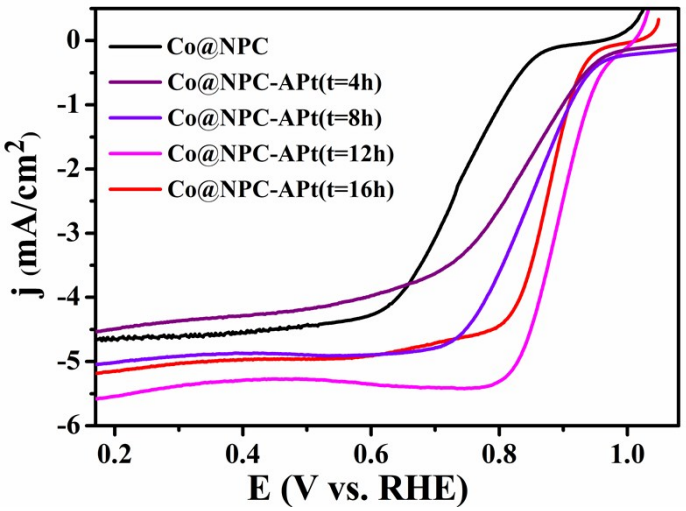

Fig.S3. LSV curves of Co@NPC-APt(t=0,4h,8h,12h,16h) under 1600rpm.

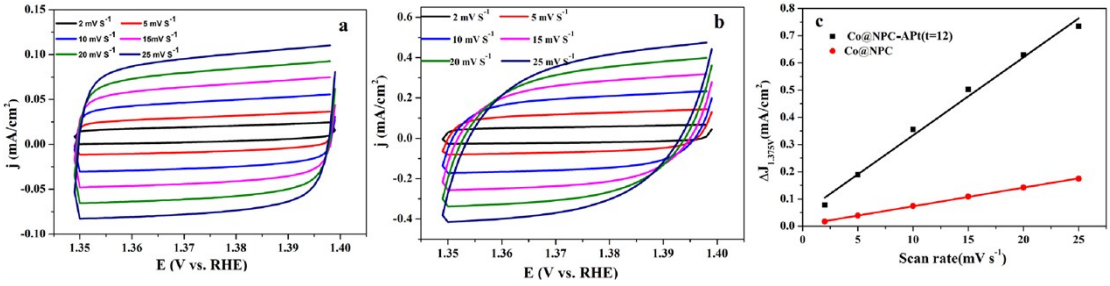

Fig.S4. CVs of the Co@NPC (**a**) and Co@NPC-APt(t=12) (**b**) (Potential from 1.35 V to 1.40 V) measured in 0.1 M KOH at scan rates of 2-25 mV s^{-1}. (**c**) Plots of the ΔJ (ΔJ=Ja-Jc , Ja is the anodic current density and Jc is the cathodic current density) at 1.375 V vs. the scan rate to determine the double layer capacitance (C_{dl})

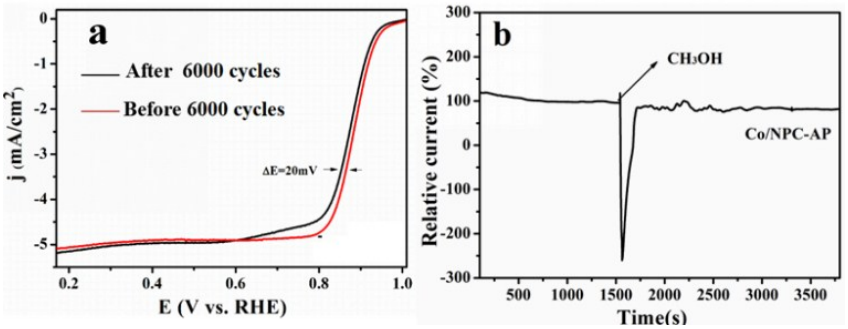

Fig.S5 The durability (**a**) and methanol-tolerance evaluation (**b**) of Co@NPC-APt(t=12) catalysts by the chronoamperometric responses.

Table 1. Comparison of electrocatalytic performance of Co@NPC-APt(t=12) with various catalysts reported in the literature.

Samples	E_{onset} （V vs. RHE）	$E_{1/2}$ (V vs. RHE）	$\|J_d\|$(mA·cm^{-2})	Electrolyte	references
Co_3O_4/N-C/MWCNTs	0.89	~0.81	4.5	0.1 M KOH	S1
Co@C-800	0.92	0.82	4.9	0.1 M KOH	S2
Co@Pt-NC	0.99	0.87	5.9	0.1 M KOH	S3
Co@Co_3O_4-NC	0.91	0.74	4.5	0.1 M KOH	S4
LDHs@Co,Zn-ZIF	0.97	0.84	5.8	0.1 M KOH	S5
Co-NC@CoP-NC	0.89	0.78	4.8	0.1 M KOH	S6
N, Co-CNSs-800	0.96	0.83	4.7	0.1 M KOH	S7
Carbon-L	0.86	0.70	4.6	0.1 M KOH	S8
Co@NPC-AP	0.95	0.89	5.6	0.1 M KOH	This work

Reference:

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