Electronic Supplementary Material (ESI) for Inorganic Chemistry Frontiers.

-Electronic Supplementary Information-

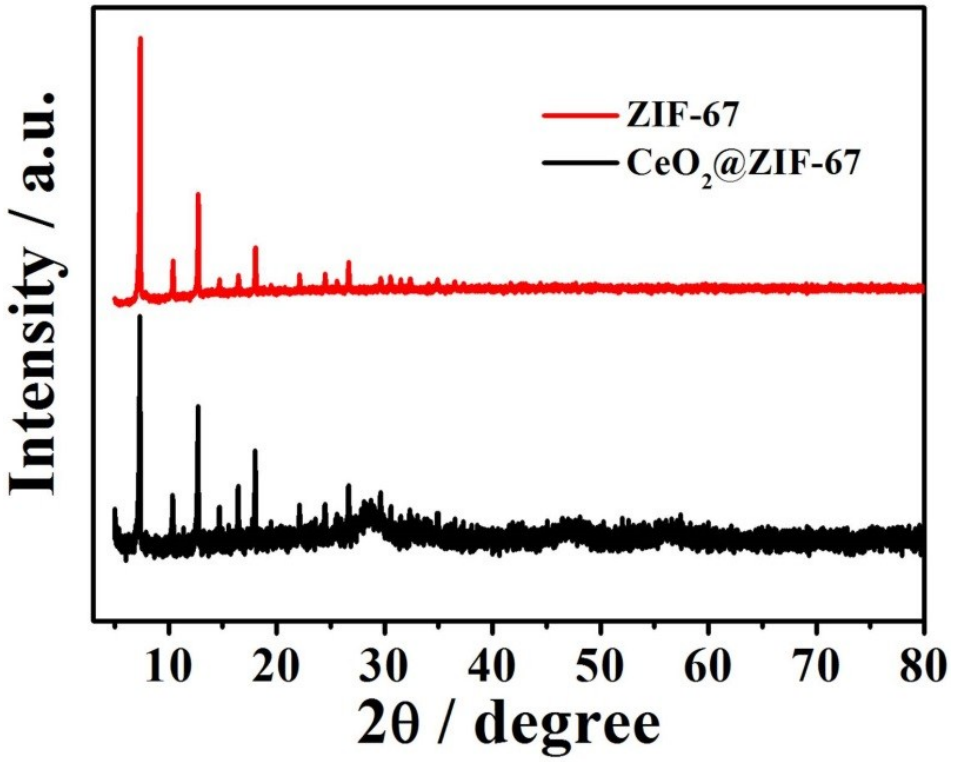

Fig. S1. XRD patterns of ZIF-67 and CeO_2@ZIF-67.

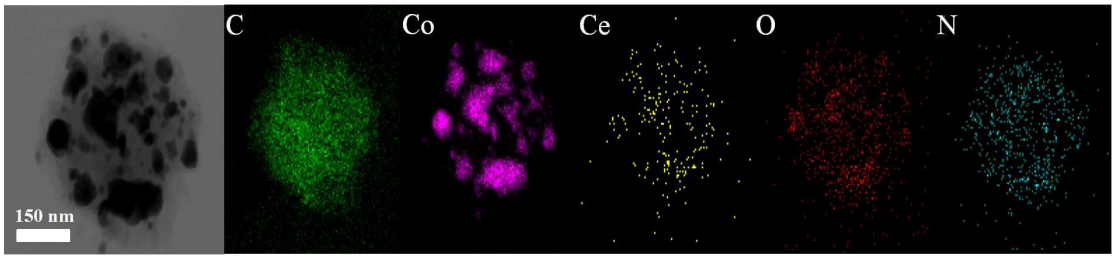

Fig. S2. The element mapping for C, Co, Ce, O, N in CeO_2/Co@N-C.

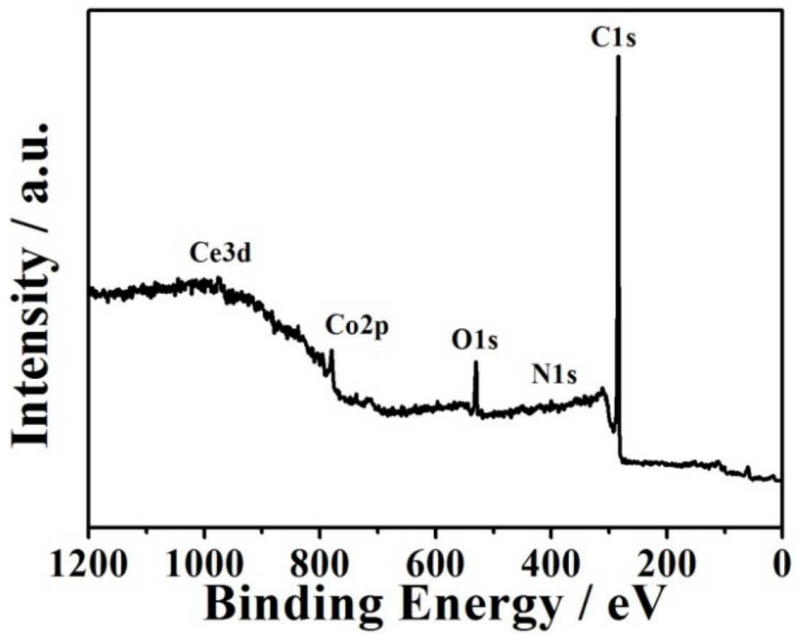

Fig. S3. XPS survey spectrum of CeO_2/Co@N-C.

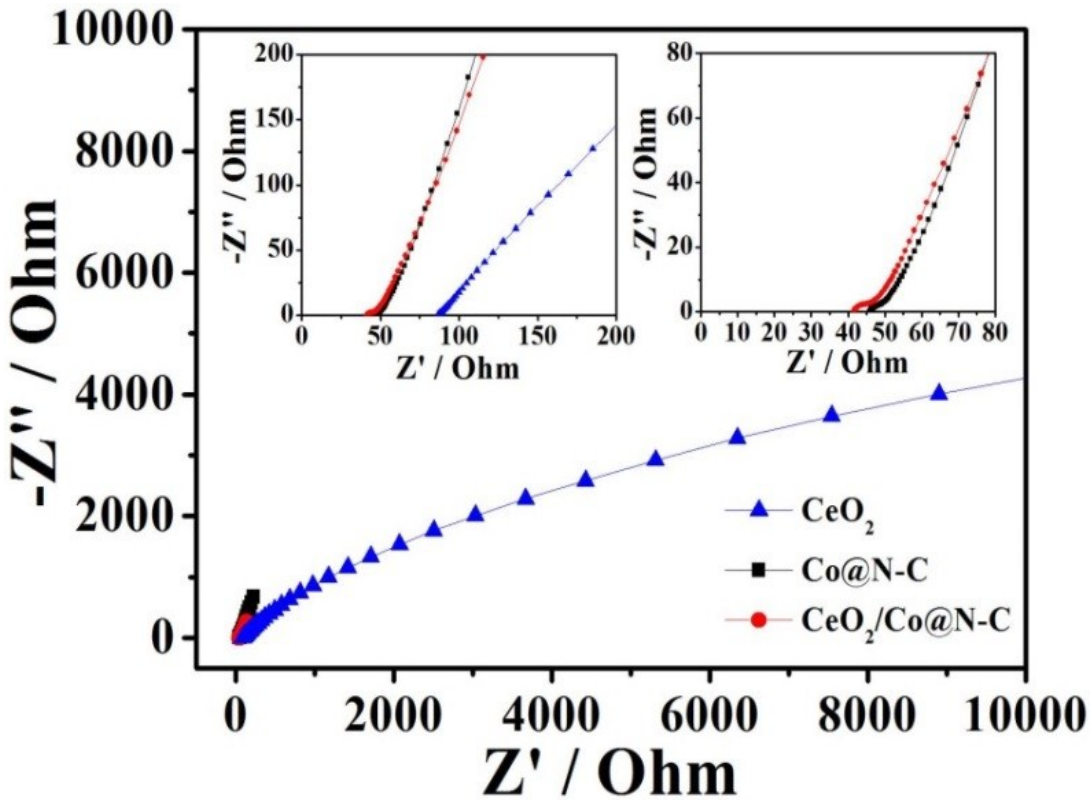

Fig. S4. Electrochemical impedance spectroscopy measurements: Nyquist plots of CeO_2,Co@N-C and CeO_2/Co@N-C.

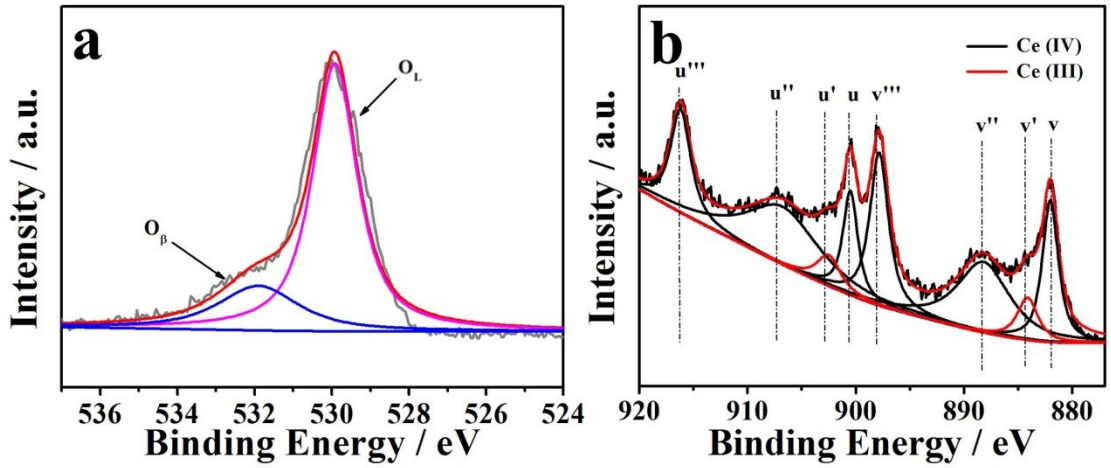

Fig. S5. XPS high-resolution spectra of O 1s (a) and Ce 3d (b) of CeO_2.

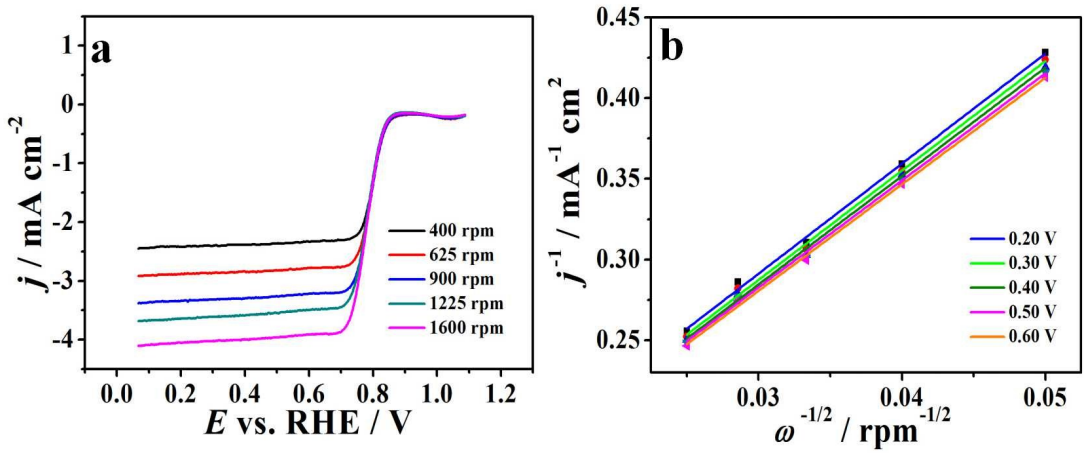

Fig. S6. (a) ORR LSV curves for Co@N-C at different rotation rates and (b) the corresponding Koutecky-Levich (K-L) plots at different potentials. All the ORR measurements were performed in O_2-saturated 0.1 M KOH solution.

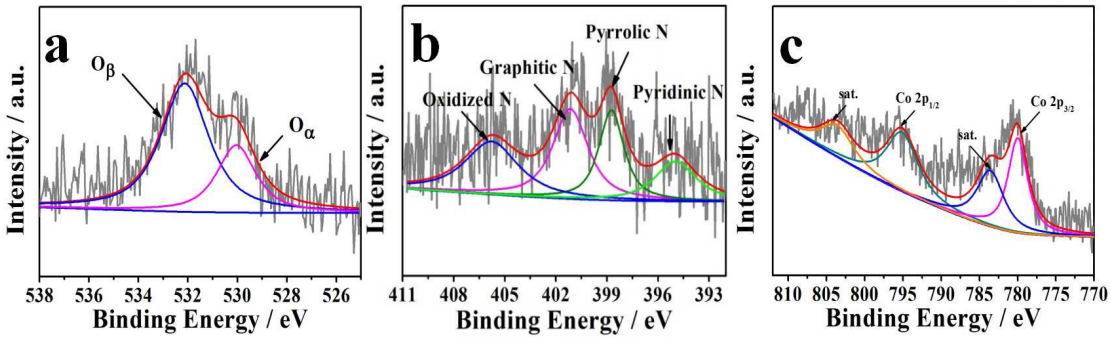

Fig. S7. XPS high-resolution spectra of O 1s (a), N 1s (b) and Co 2p (c) of Co@N-C.

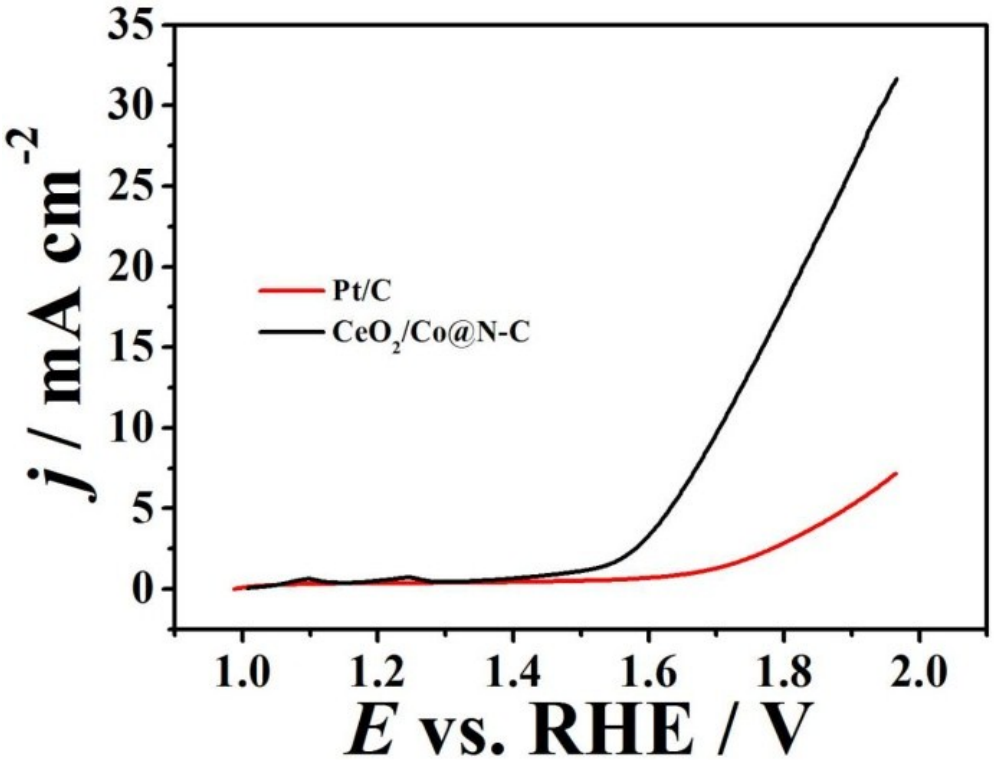

Fig. S8. OER LSV curves for CeO_2/Co@N-C and Pt/C at scanning rate of 10 mV s^{-1} in 0.1 M KOH.

Table S1 Comparison of ORR/ OER performances of reported CeO_2-based electrocatalysts

Catalyst	$E_{onset,\ ORR}$ (V)	$E_{1/2,ORR}$ (V)	n_{ORR}	electrolyte	$E_{j=10,OER}$(V)	electrolyte	Reference
CeO_2/Co@N-C	0.998	0.934	3.98	0.1 M	1.704	0.1 M	This work
Co-CeO_2-N-C	0.89	0.82	3.96	0.1 M	1.556	1.0 M	1
CeO_2/Co_3O_4@N-C	0.97	0.86	3.94	0.1 M	1.504	0.1 M	2
CeO_2/rGO	0.946	0.84	3.3-3.5	0.1 M	1.72	0.1 M	3
0.5Co-NC-CeO_2	0.875	0.817	3.97	0.1 M	-	-	4
5 wt% Pt-CeO_x NW/C	0.89	0.75	4.1	0.1 M	-	-	5
Co_3O_4-CeO_2/C	0.93	0.83	3.91	0.1 M	-	-	6
CeO_2@PIZA-1-400	-	-	-	-	1.6	1.0 M	7
Ni_4Ce_1@CP	-	-	-	-	1.45	1.0 M	8
Ag-CeO_2/VXV-72	0.905	0.717	3.46	0.1 M	-	-	9
Ce-HPCNs	0.923	0.831	3.87	0.1 M	-	-	10
MnO_x-CeO_2/KB	0.94	0.81	~4	0.1 M	-	-	11
CeO_2 nanowires	0.756	0.666	-	0.1 M	1.934	0.1 M	12
Co-CeO_2/N-CNR	0.87	0.83	3.95	0.1 M	1.64	0.1 M	13
CeGS	0.92	0.81	~4	0.1 M	-	-	14

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