Electronic Supplementary Information

Mesoporous Fe/N/C oxygen reduction catalyst through NaCl crystallites-confined pyrolysis of polyvinylpyrrolidone

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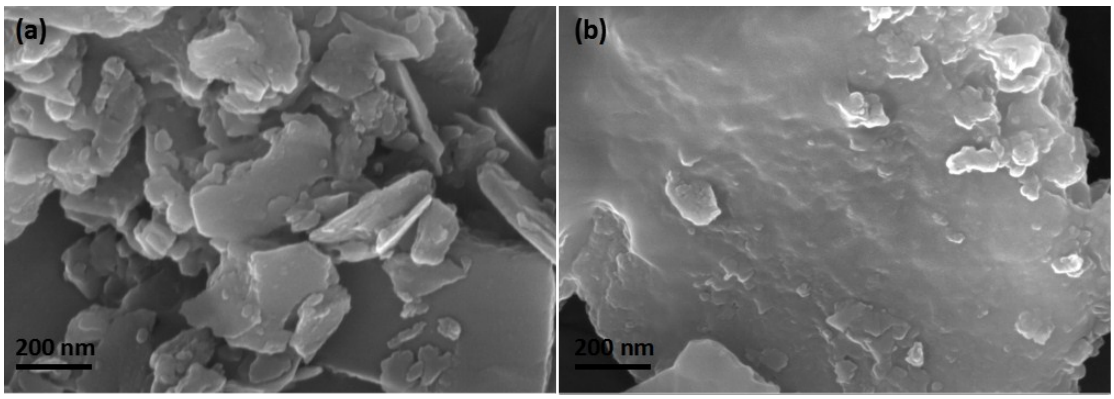

Fig. S1. SEM images of PVP-NaCl-Fe/N/C (a) and PVP-Fe/N/C (b).

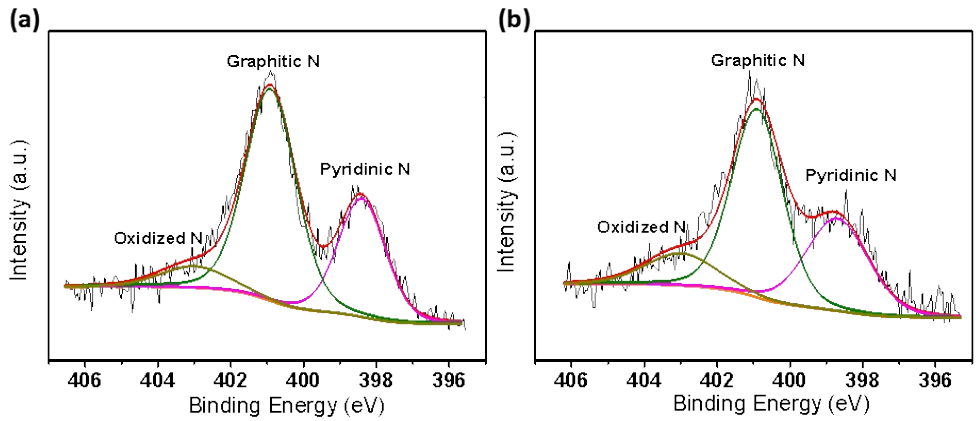

Fig. S2. XPS spectra of N 1s in PVP-NaCl-Fe/N/C (a) and PVP-Fe/N/C (b).

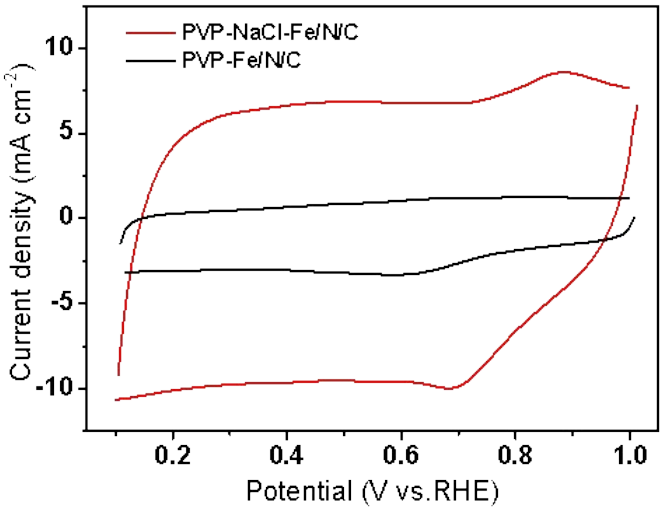

Fig. S3. CV of PVP-Fe/N/C and PVP-NaCl-Fe/N/C in O_2-saturated 0.1 M $HClO_4$. Scan rate: 100 mV s^{-1}.

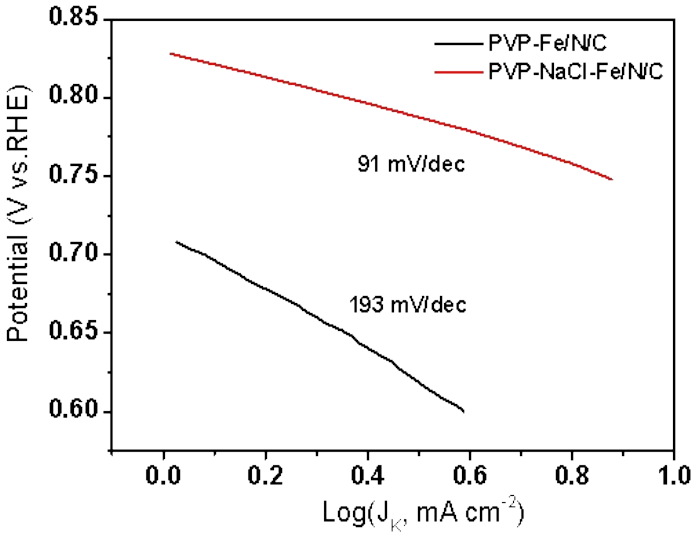

Fig. S4. Tafel plots of kinetic current for PVP-Fe/N/C and PVP-NaCl-Fe/N/C.

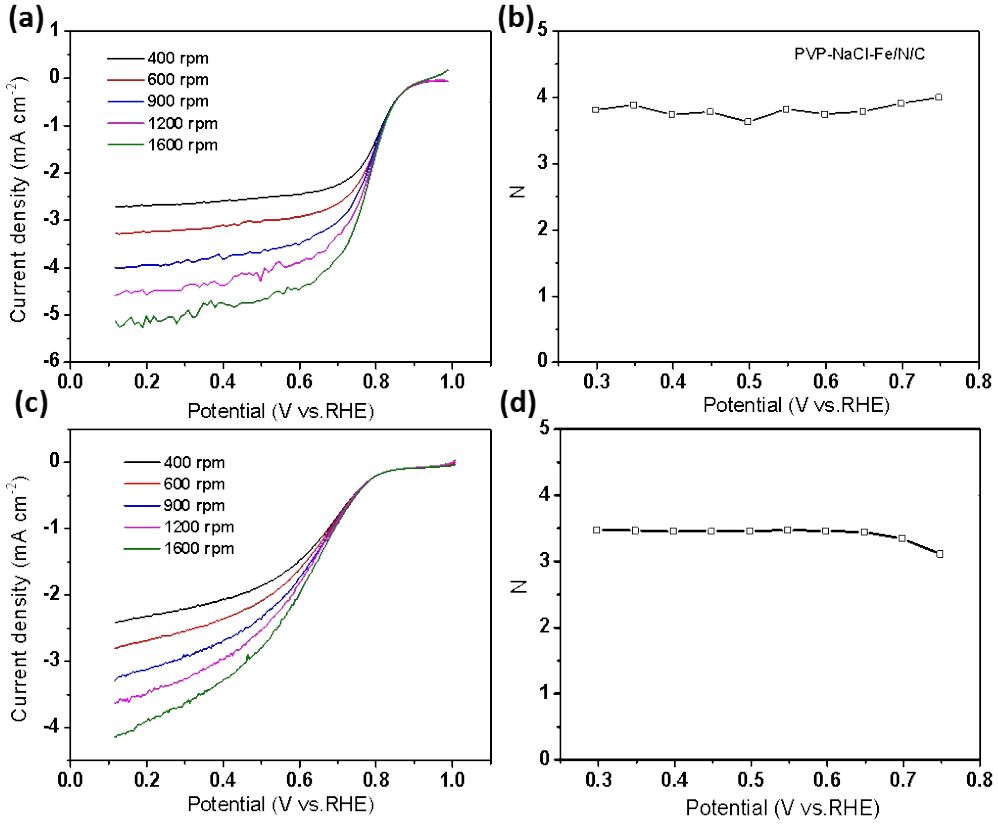

Fig. S5. (a) ORR polarization curves of PVP-NaCl-Fe/N/C in O_2-saturated 0.1 M $HClO_4$ at various rotating speeds. Scan rate: 5 mV s^{-1}. (b) The number of electron transferred for ORR on PVP-NaCl-Fe/N/C calculated from the K-L equation. (c) ORR polarization curves of PVP-Fe/N/C in O_2-saturated 0.1 M $HClO_4$ at various rotating speeds. Scan rate: 5 mV s^{-1}. (d) The number of electron transferred for ORR on PVP-Fe/N/C calculated from the K-L equation.

Table S1. RDE performance comparison of non-precious metal catalysts for ORR.

Catalysts	Catalyst loading/ μg cm^{-2}	$E_{1/2}$ in acidic media (V vs. RHE)	$E_{1/2}$ in alkaline media (V vs. RHE)	Ref.
PVP-NaCl-Fe/N/C	**500**	**0.793**	**0.878**	This work
CNT/(N–C)-800	500	-	0.848	1
C–N–Co	600	0.79	-	2
NP-HPC	200	-	0.83	3
FePPyC-900	400	0.740	0.877	4
Fe–N–CC	100	~0.60	0.83	5
Co–N–C	283 (alkaline), 600 (acid)	0.761	0.841	6

Reference for Table S1

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