Electronic Supplementary Material (ESI) for Inorganic Chemistry Frontiers.

Supporting information *for*

Sacrificial Template Induced Interconnected Bubble-like N-doped Carbon Nanofoam as a PH-universal Electrocatalysts for Oxygen Reduction Reaction

Table S1 precursor species and their corresponding components

Precursor	Zinc nitrate hexahydrate (g/600mL water)	Glucose (g/600mL water)
a	18	22.8
b	8.925	11.4
c	1	1.28

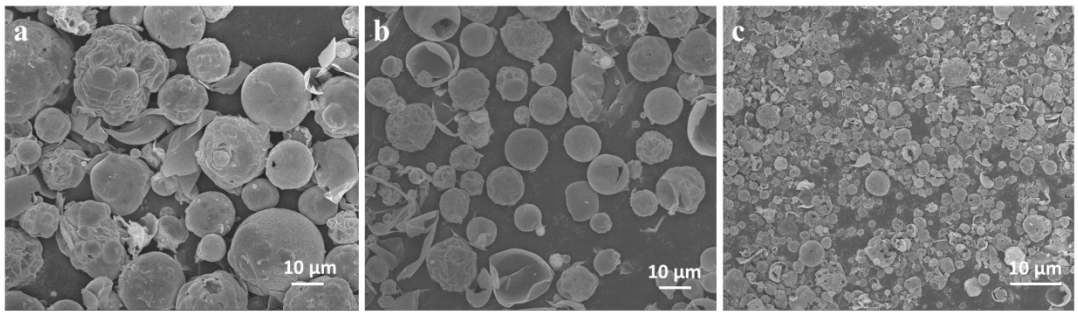


Fig. S1 SEM images of sphere-like carbon materials derived from precursor a (a), b (b) and c (c).

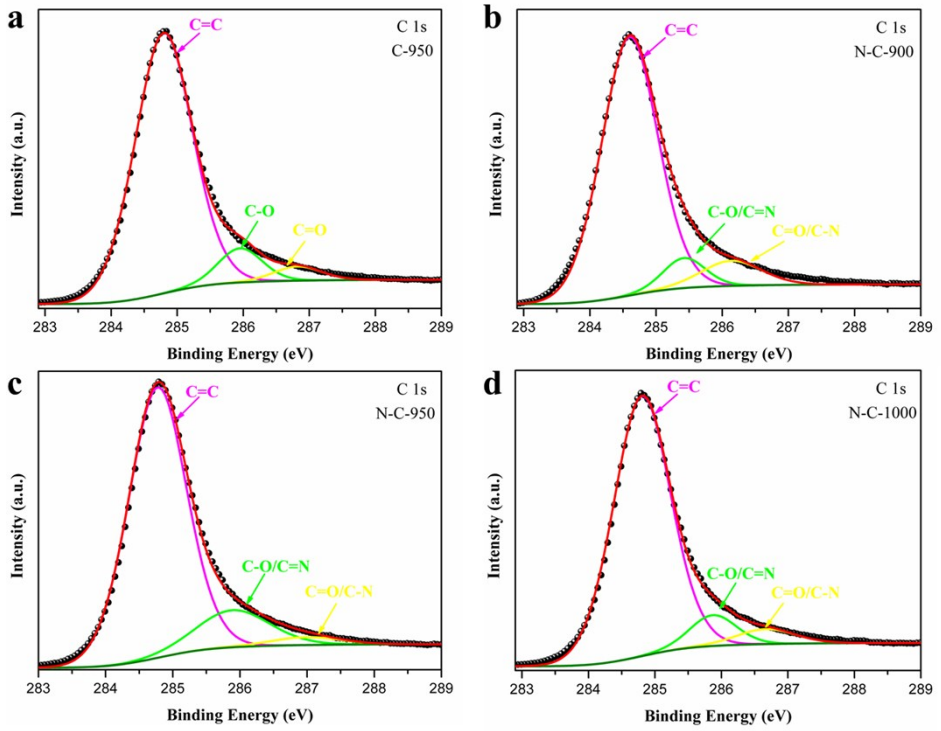


Fig. S2 High resolution C 1s spectra of C-950 (a), N-C-900 (b), N-C-950 (c) and N-C-1000 (d).

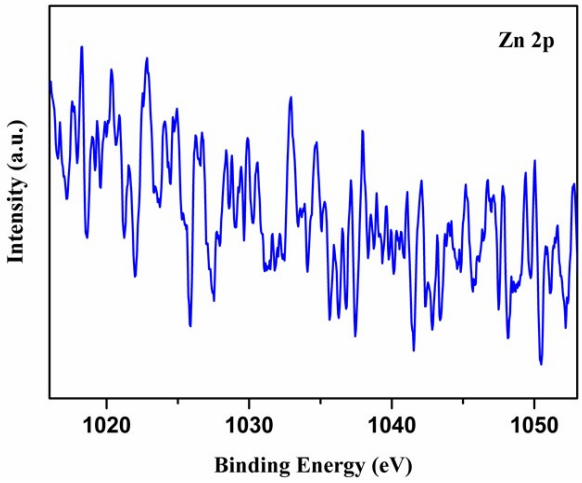


Fig. S3 High resolution Zn 2p XPS spectrum of N-C-950.

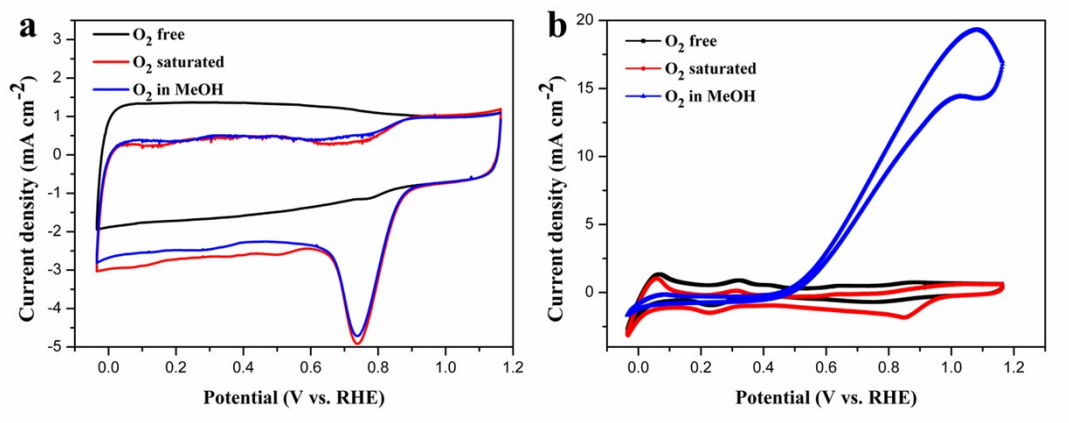


Fig. S4 CV curves of N-C-950 (a) and Pt/C (b) measured in three different solutions.

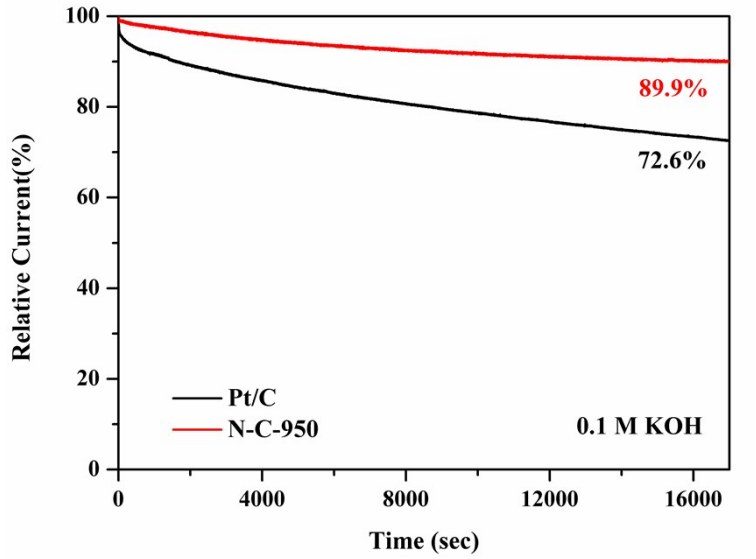


Fig. S5 Chronoamperometric curves of a glassy carbon electrode modified with N-C-950 and Pt/C at -0.30 V vs. Ag/AgCl in an O_2-saturated 0.1 M KOH solution at a rotation rate of 1600 rpm.

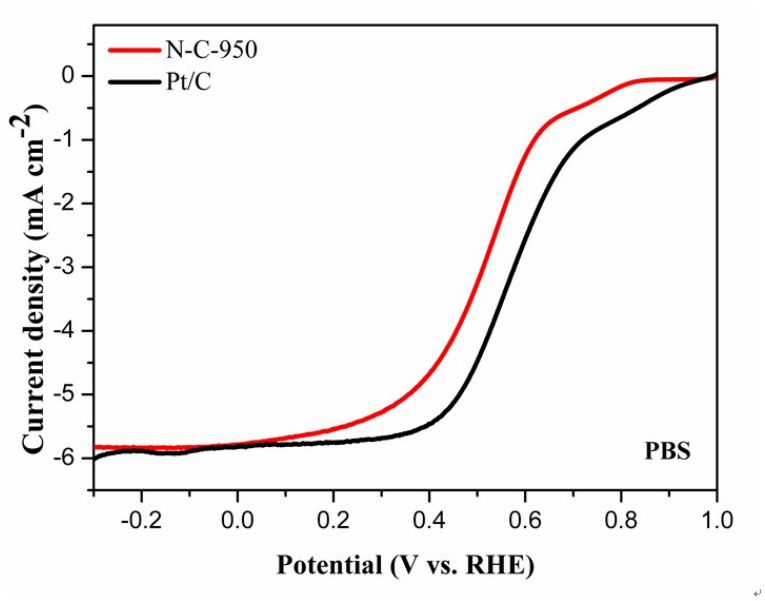


Fig.S6 LSV curves of N-C-950 and Pt/C measured in O_2-saturated PBS solution at a rotation speed of 1600 rpm with a scan rate of 5 mV s^{-1}.

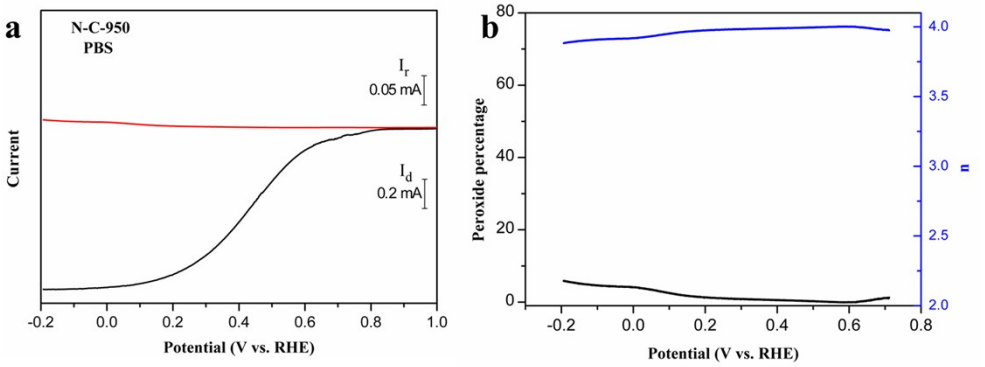


Fig.S7 a. RRDE voltammograms in O_2-saturated PBS solution at room temperature at a rotation speed of 1600 rpm with a scan rate of 5mV s^{-1} for N-C-950; b. the electron transfer number and hydrogen peroxide yield obtained from the RRDE curves for N-C-950.

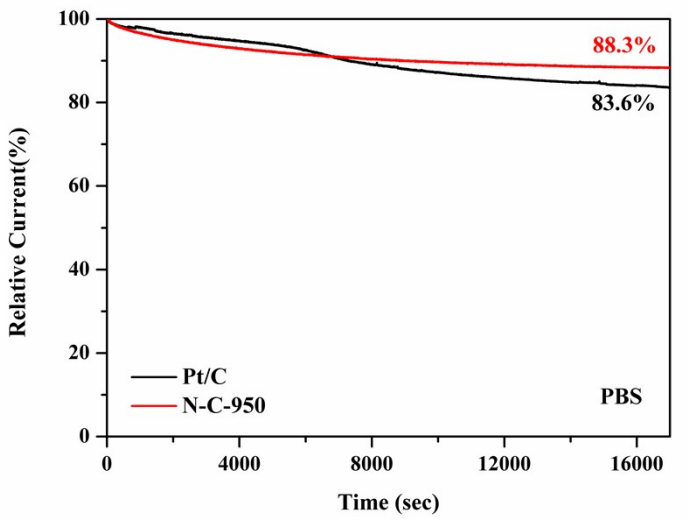


Fig. S8 Chronoamperometric curves of a glassy carbon electrode modified with N-C-950 and Pt/C, respectively, at -0.25 V vs Ag/AgCl in O_2-saturated 0.1 M PBS solution at a rotation rate of 1600 rpm.

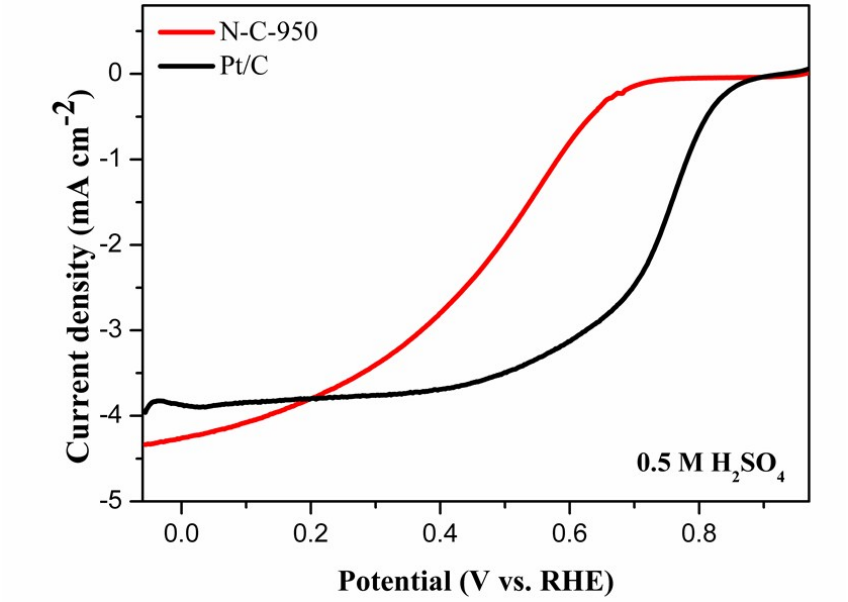


Fig.S9 LSV curves of N-C-950 and Pt/C measured in O_2-saturated 0.5 M H_2SO_4 solution at a rotation speed of 1600 rpm with a scan rate of 5 mV s^{-1}.

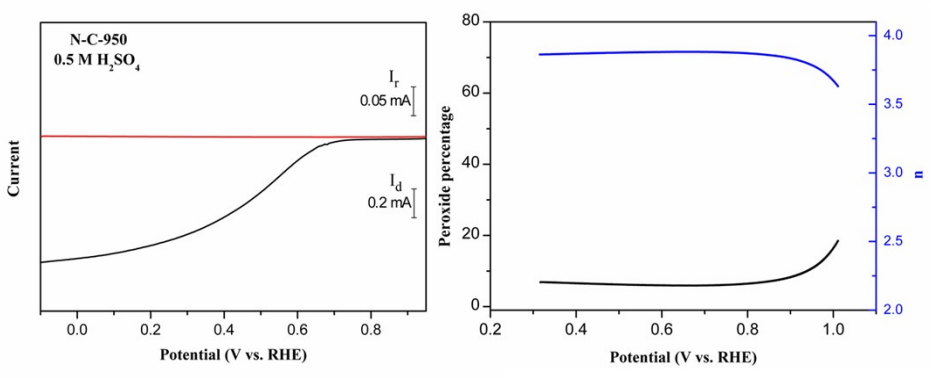


Fig.S10 a. RRDE voltammograms in O_2-saturated 0.5 M H_2SO_4 solution at room temperature at a rotation speed of 1600 rpm with a scan rate of 5mV s^{-1} for N-C-950; b. the electron transfer number and hydrogen peroxide yield obtained from the RRDE curves for N-C-950.

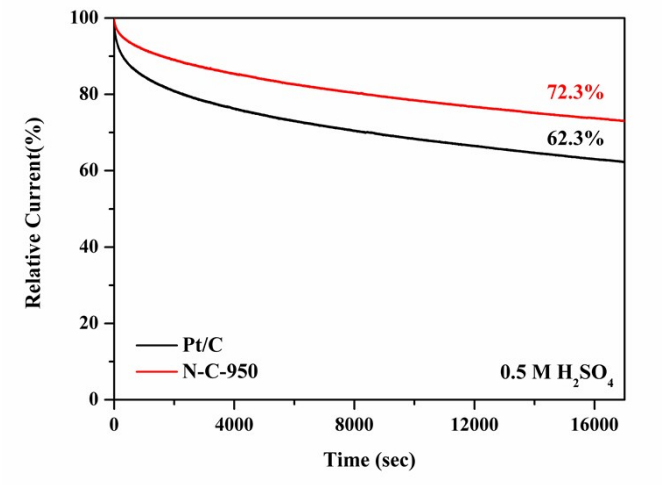


Fig. S11 Chronoamperometric curves of a glassy carbon electrode modified with N-C-950 and Pt/C, respectively, at -0.25 V vs Ag/AgCl in O_2-saturated 0.5 M H_2SO_4 solution at a rotation rate of 1600 rpm.

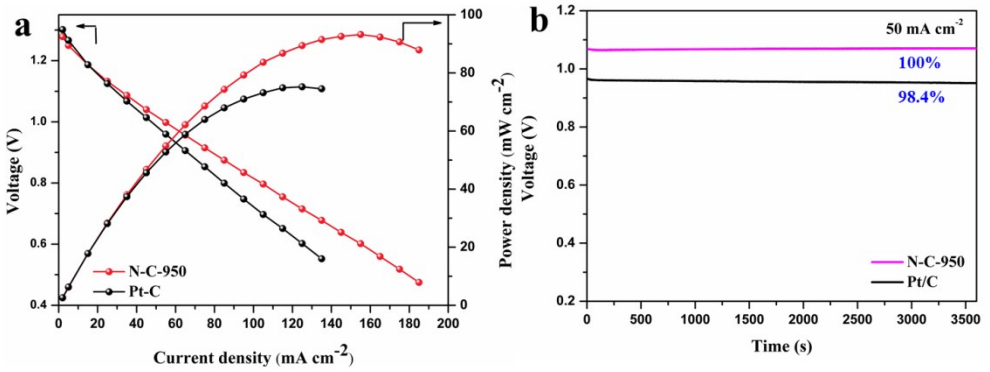
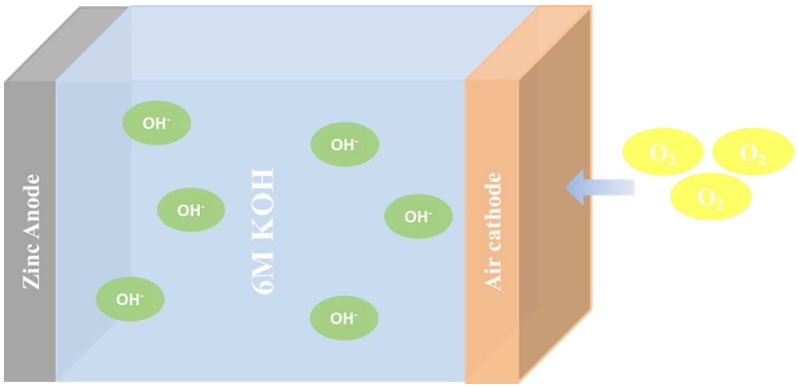


Fig. S12 (a) Voltage and power density tendencies with increasing current densities; (b) Discharge curves of the as-prepared N-C-950 and Pt/C at a current density of 50 mA cm^{-2}.



Scheme S1. Schematic of Zn-air battery configuration.