Electronic Supplementary Information

Sodium Chloride-Assisted Green Synthesis of 3D Fe-N-C Hybrid as a Highly Active Electrocatalyst for Oxygen Reduction Reaction

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This file includes Fig. S1-S12 and Table S1.

Fig. S1

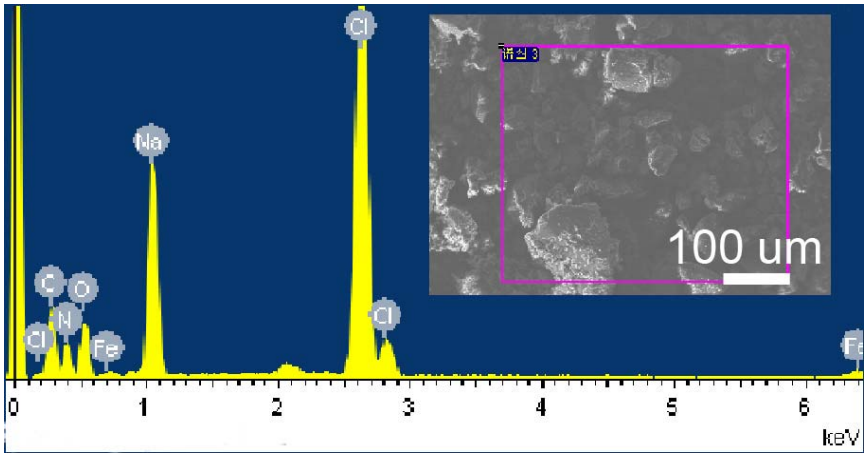

Fig. S1 EDS spectrum of the precursor.

Fig. S2

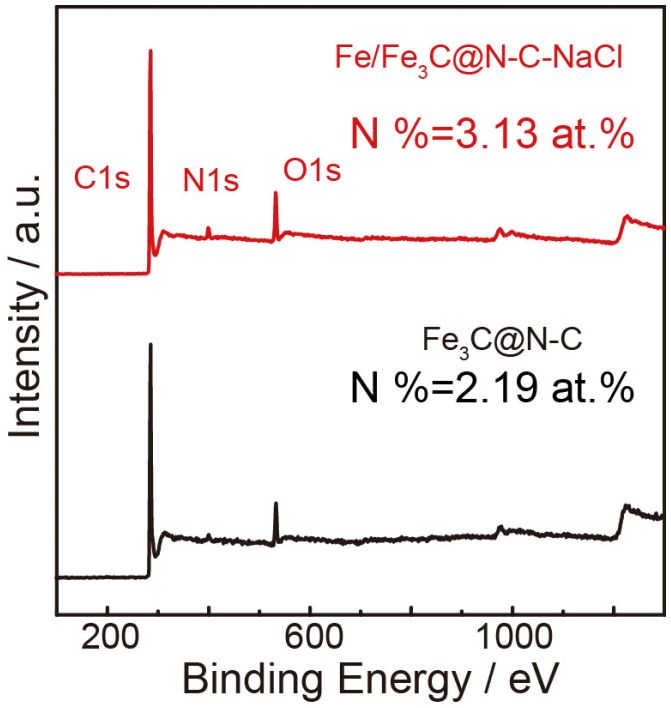

Fig. S2 Wide-scan survey XPS spectra of Fe/Fe3C@N-C-NaCl and Fe3C@N-C.

Fig. S3

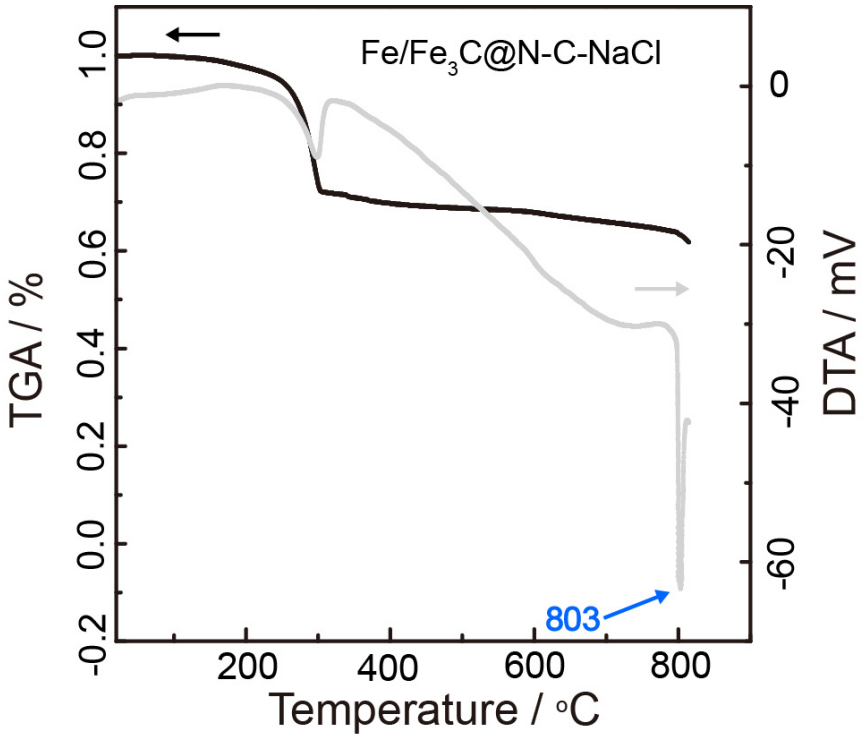

Fig. S3 TGA-DTA curves measured under Ar flow for monitoring the preparation process of Fe/Fe$_3$C@N-C-NaCl.

Fig. S4

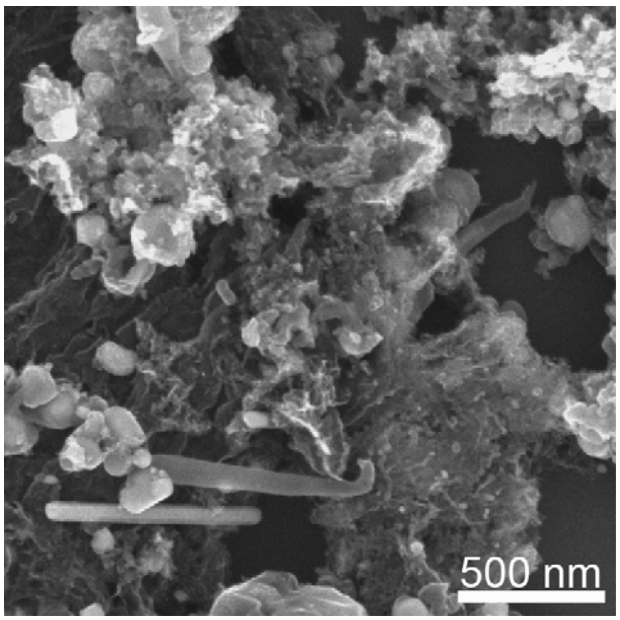

Fig. S4 SEM image of Fe$_3$C@N-C.

Fig. S5

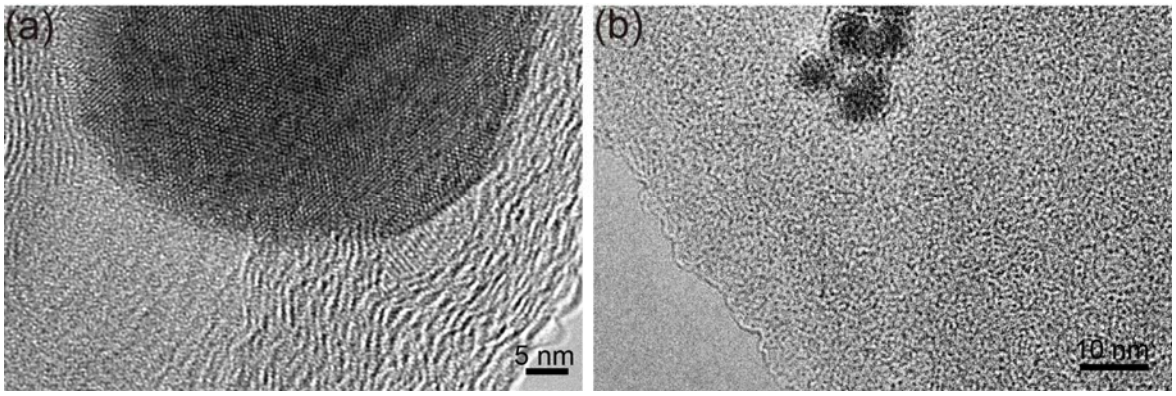

Fig. S5 HRTEM images of a) CNT and b) GCS in Fe/Fe_3C@N-C-NaCl.

Fig. S6

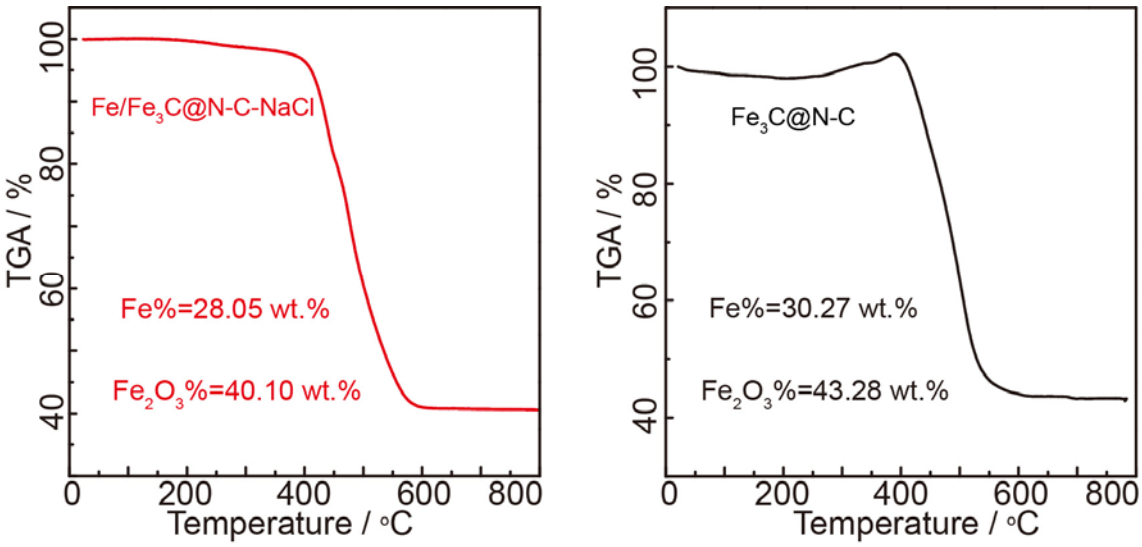

Fig. S6 TGA profiles of Fe/Fe_3C@N-C-NaCl and Fe_3C@N-C measured under atmosphere.

Fig. S7

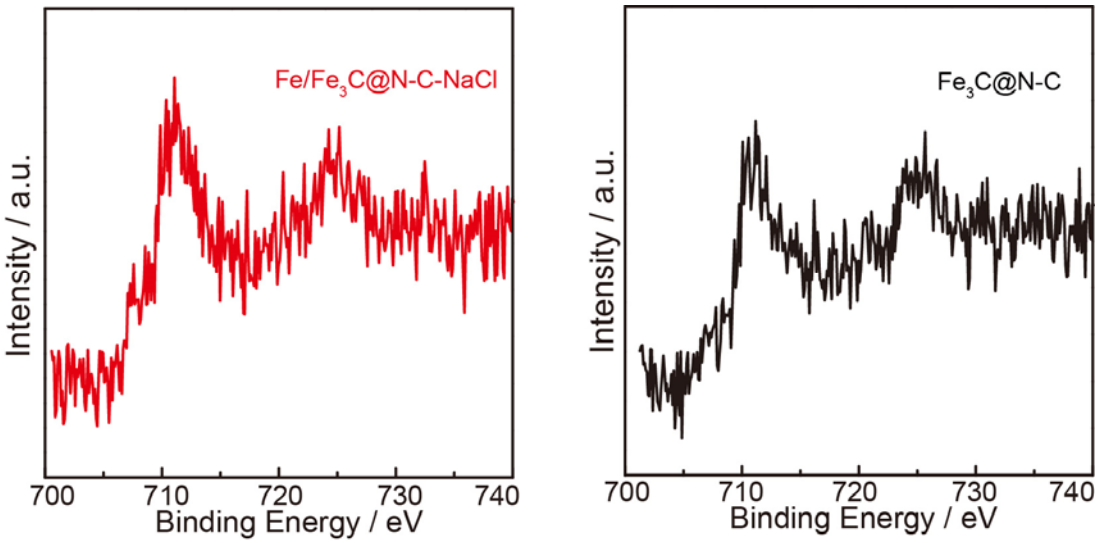

Fig. S7 High-resolution Fe 2p signals in XPS spectra of Fe/Fe_3C@N-C-NaCl and Fe_3C@N-C.

Table S1 The results of deconvoluted high-resolution N 1s signals of Fe/Fe_3C@N-C-NaCl and Fe_3C@N-C.

Sample	N (at.%)	C-N (at.%)	Fe-N_x (at.%)	quaternary-N (at.%)	oxidized-N (at.%)
Fe/Fe_3C@N-C-NaCl	3.13	0.55	1.34	0.65	0.58
Fe_3C@N-C	2.19	0.47	0.53	0.73	0.45

Fig. S8

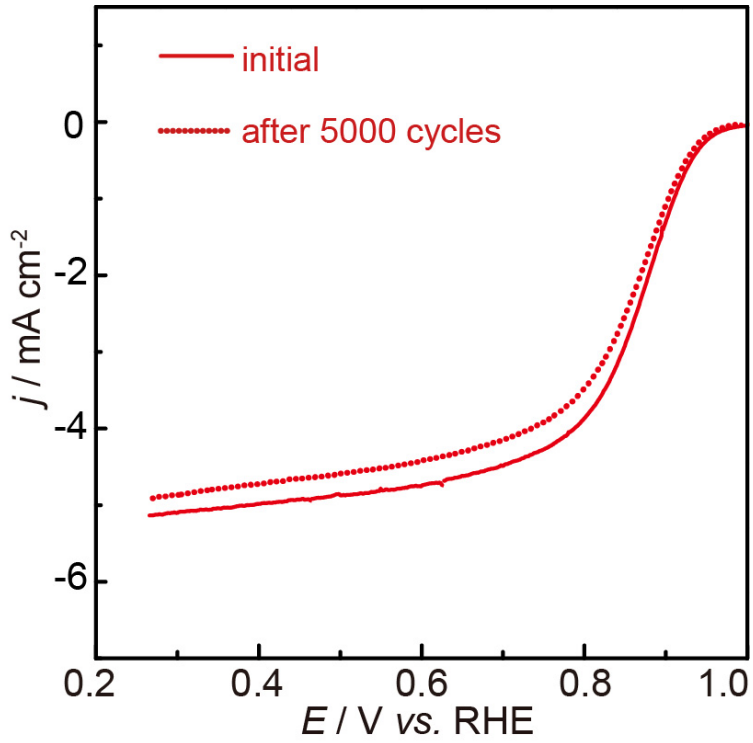

Fig. S8 LSV curves for Fe/Fe_3C@N-C-NaCl before and after 5000 potential cycles between 0.6 and 1.0 V (vs RHE) at a scanning rate of 50 mV s^{-1}.

Fig. S9

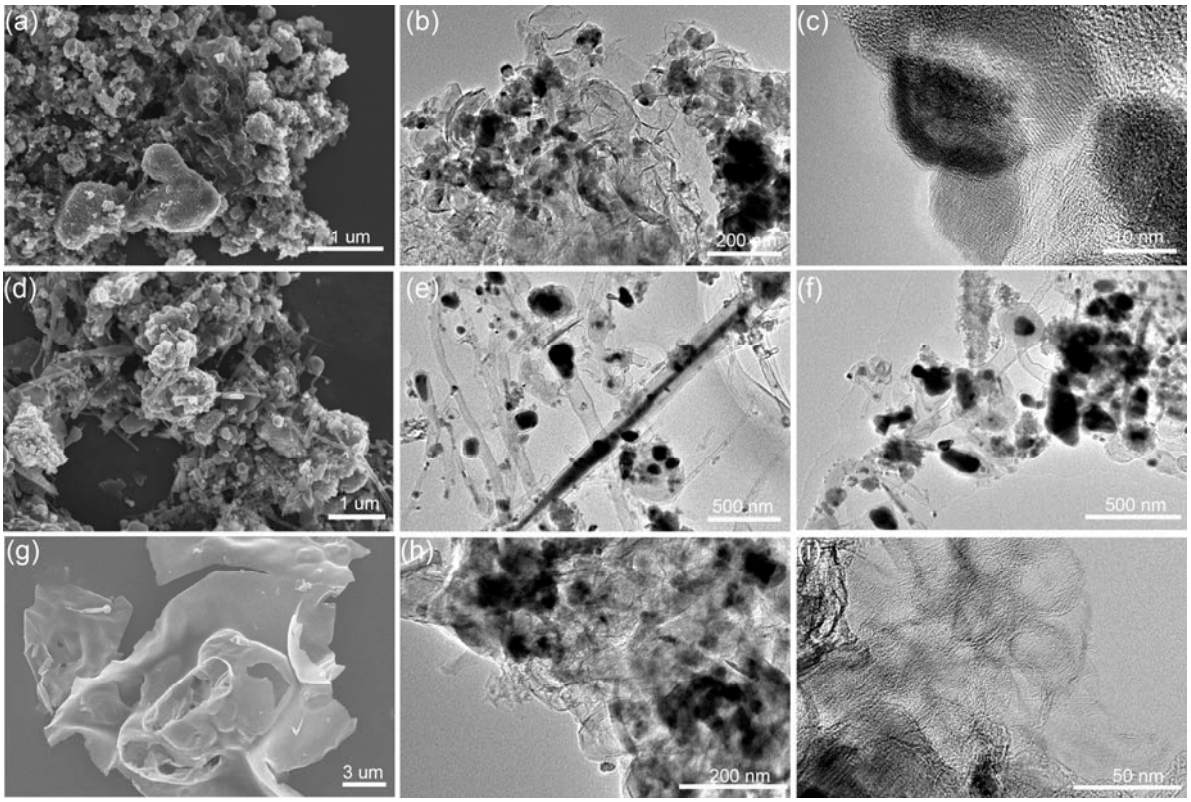

Fig. S9 a) SEM and b-c) TEM images of the sample synthesized without melamine; d) SEM and e-f) TEM images of the sample synthesized without glucose; g) SEM and h-i) TEM images of the sample synthesized without iron.

Fig. S10

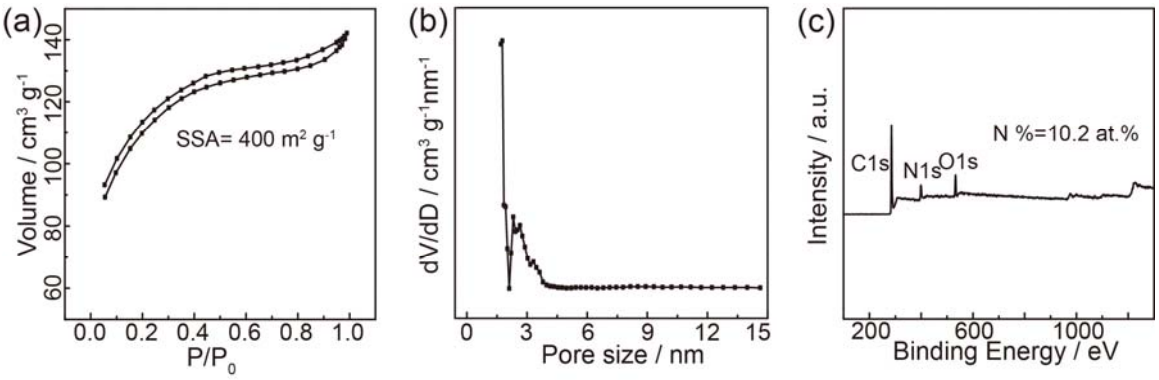

Fig. S10 a) N_2 adsorption/desorption isotherm, b) the corresponding pore size distribution curve, and c) wide-scan survey XPS spectrum of the sample prepared without iron.

Fig. S11

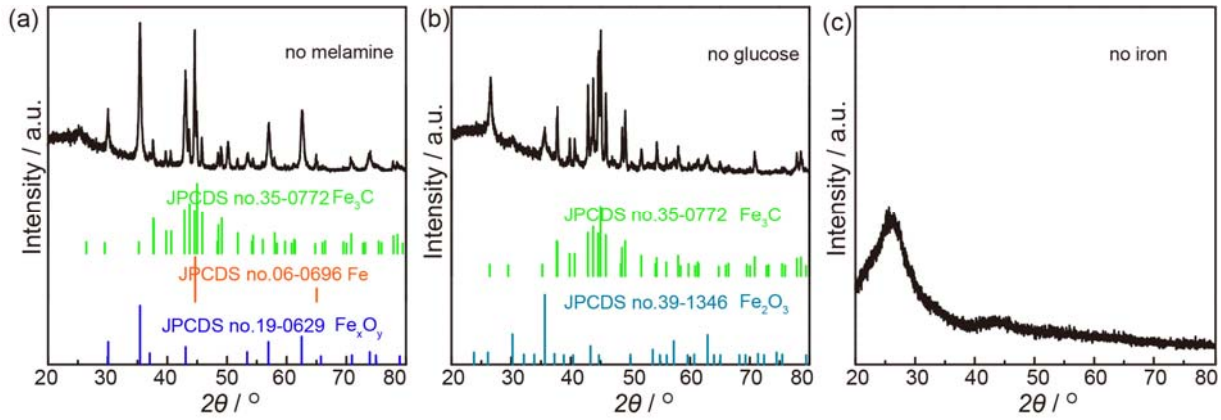

Fig. S11 a-c) XRD patterns of the samples prepared without melamine, glucose, and iron, respectively.

Fig. S12

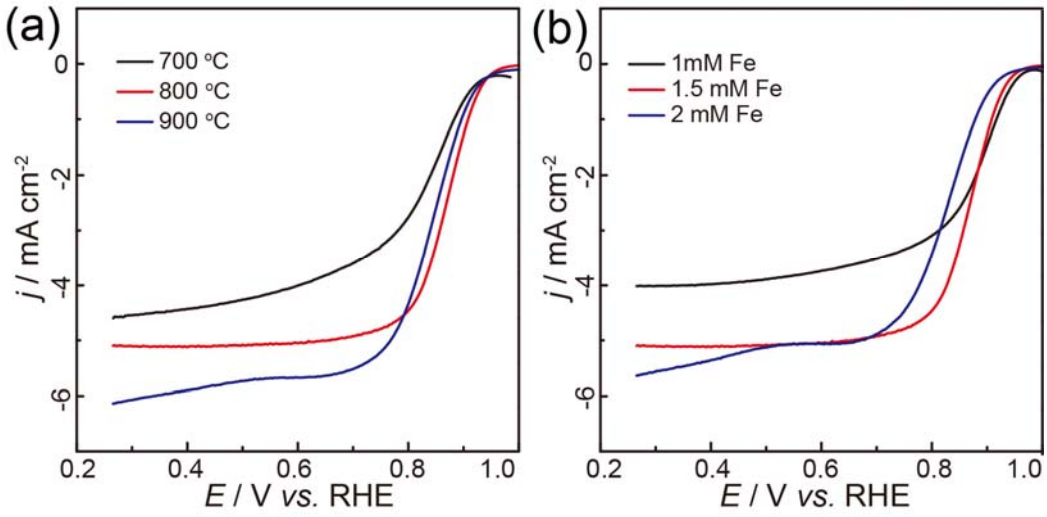

Fig. S12 a) LSV curves of catalysts prepared at different pyrolysis temperature, and b) LSV curves of catalysts prepared with different iron content. All curves were recorded at a scan rate of 10 mV s^{-1} and a rotation speed of 1600 rpm in O_2-saturated 0.1 M KOH.