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Supporting Information

Fe, N-doped carbon spheres prepared by electrospinning method as high-efficiency oxygen reduction reaction catalysts

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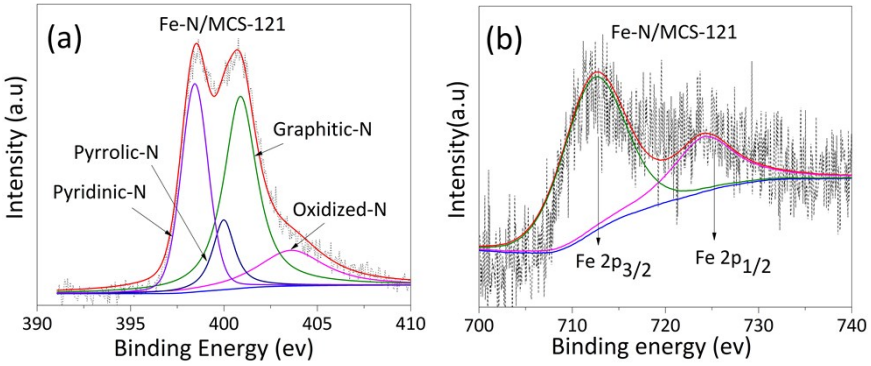
Table S1 Elemental content of the Fe-N/MCS catalysts

Samples	C(wt. %)	O(wt.%)	N(wt. %)	Fe(wt.%)
Fe-N/MCS-181	83.62	7.66	8.59	0.13
Fe-N/MCS-121	84.90	6.68	8.32	0.10
Fe-N/MCS-158	86.72	5.87	7.30	0.11
Fe-N/MCS-83	85.82	5.47	8.65	0.05



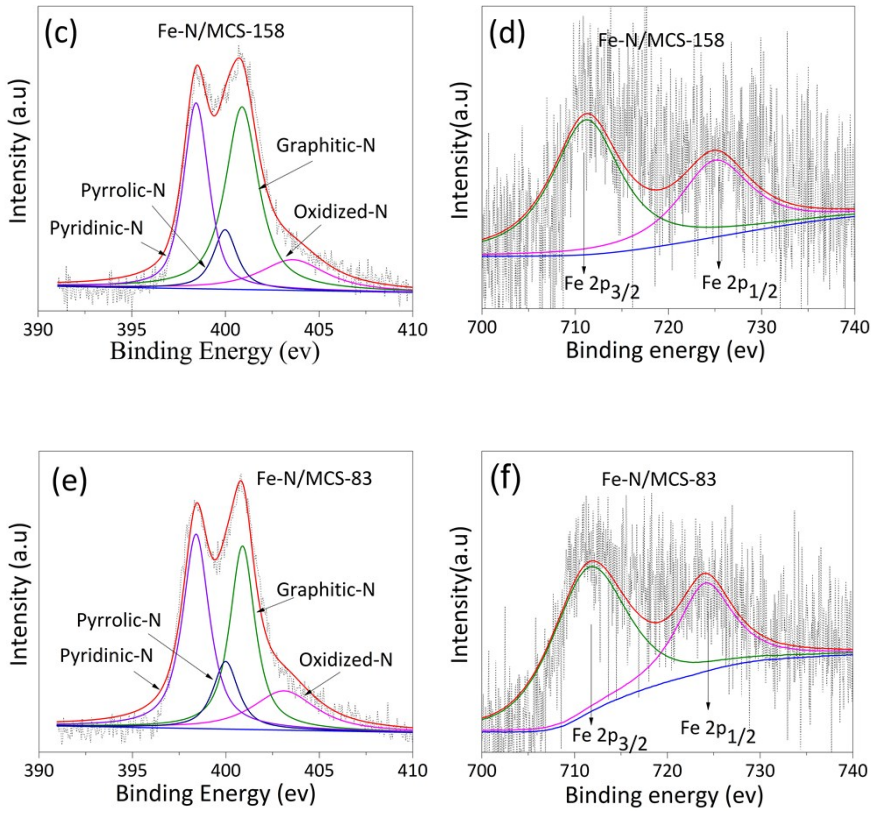


Fig S1. XPS results of N1S and Fe2p of Fe-N/MCS-121(a, b), Fe-N/MCS-158(c, d), Fe-N/MCS-83(e, f)

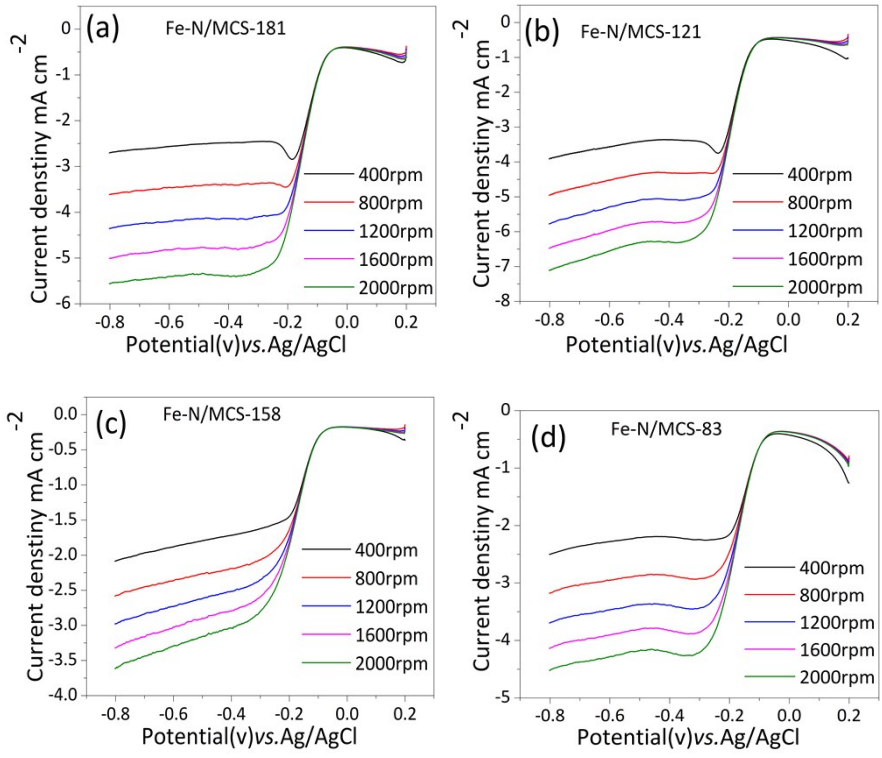


Fig S2. LSV results of Fe-N/MCS-181(a), Fe-N/MCS-121(b), Fe-N/MCS-158(c) and Fe-N/MCS-83(d)

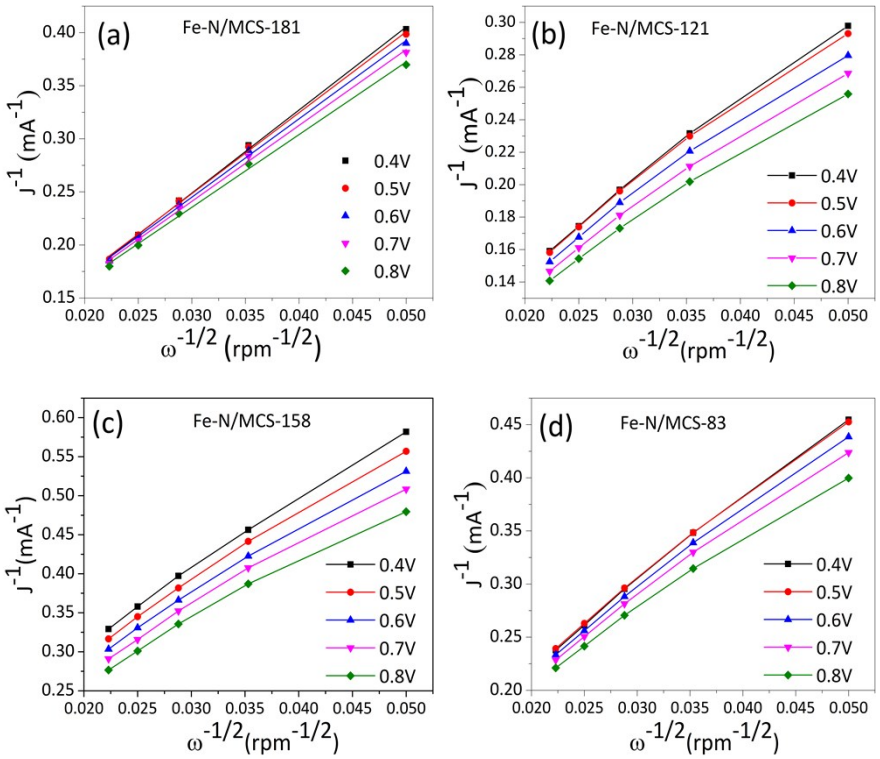


Fig S3. K-L plots of Fe-N/MCS-181(a), Fe-N/MCS-121(b), Fe-N/MCS-158(c) and Fe-N/MCS-83(d)

Table S2 Electrocatalytic performances comparison of the Fe-N/MCS catalysts and Pt/C

Samples	Onset potential (V vs. Ag/AgCl)	Half-wave potential(V vs. Ag/AgCl)	Current density (mA cm^{-2})	Electron transfer number n
Fe-N/MCS-181	-0.018	-0.145	5.0	4.0
Fe-N/MCS-121	-0.051	-0.212	6.5	4.0
Fe-N/MCS-158	-0.049	-0.180	3.2	3.5
Fe-N/MCS-83	-0.039	-0.164	4.0	3.8
Pt/C	-0.010	-0.180	6.0	4.0

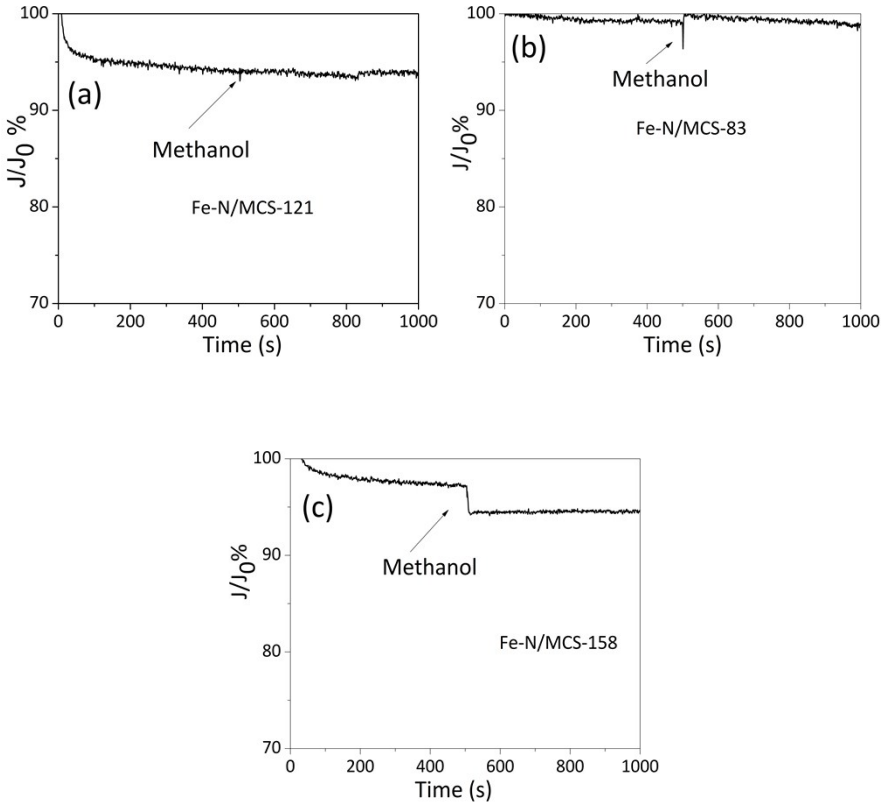


Fig S4. Chronoamperometric responses of Fe-N/MCS-121(a), Fe-N/MCS-158(b) and Fe-N/MCS-83(c) with 3 M methanol

Table S3 Comparison of alkaline ORR performance between Fe-N/MCS-181 and other non-noble metal catalysts from recent literature (electrode 1600 rpm in 0.1 M KOH)

Samples	Onset potential (V vs. Ag/AgCl)	Half-wave potential(V vs. Ag/AgCl)	References
Fe-N/MCS-181	-0.018 (0.959 RHE)[a]	-0.145 (0.832 RHE)	This work
$Ti_{0.8}Co_{0.2}N$	0.98 (RHE)	0.85 (RHE)	Ref 1
Co-N-CNF-900	-0.082	-0.155	Ref 2
S−Fe/N/C	0.911(RHE)	0.799 (RHE)	Ref 3
AA-Fe_2N@NC	-0.073	-0.172	Ref 4
Fe/Fe_2O_3 @Fe-N-C-1000	-0.04	-0.17	Ref 5

[a]Following Ag/AgCl potential of Fe-N/MCS-181 is converted to RHE using following Nernst equation. E (vs. RHE) = $E_{Ag/AgCl}$ + pH × 0.059 + 0.210

Notes and References

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