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Supplementary Information

Synthesis of highly-active Fe-N-C catalysts for PEMFC with carbide-derived carbons

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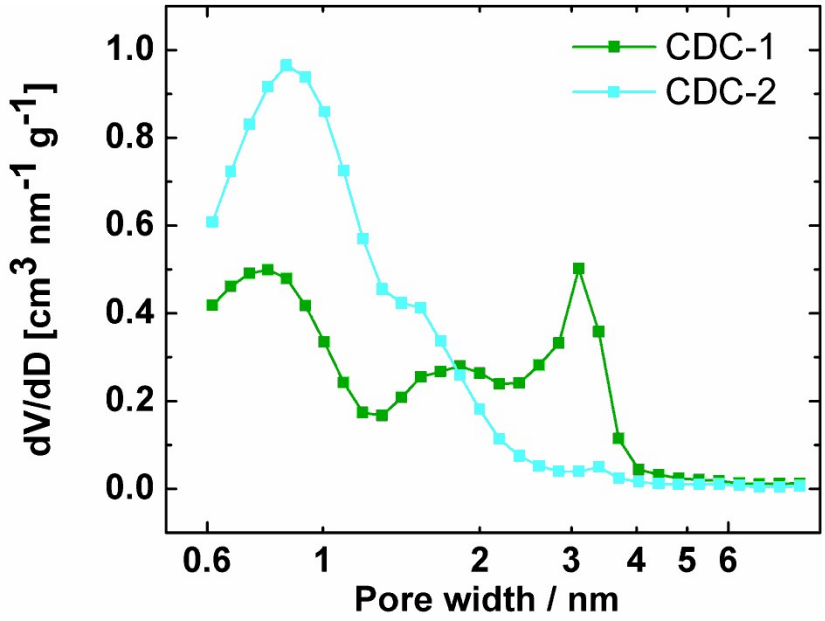

Figure S1. Comparison of pore size distributions for undoped CDC samples.

Table S1. Room-temperature Mössbauer parameters of the doublet components. IS, QS and LW are the isomer shift (relative to α-Fe at room temperature), quadrupole splitting and line width, given in mm s^{-1}, respectively.

Sample	IS	QS	LW	% area	Label
(a) $Fe_{0.5}$-N/CDC-1	0.47	1.16	0.52	13	D1
(b) $Fe_{0.5}$-N/CDC-2	0.38	1.07	0.98	28	D1
	0.49	2.37	1.84	20	D2
	0.56	0.44	7.23	50	SP
(c) Fe_1-N/CDC-2	0.34	1.07	0.82	26	D1
	0.49	2.34	1.75	20	D2
	0.08	4.84	6.57	40	SP
(d) Fe_2-N/CDC-2	0.3	1	1.14	22	D1
	0.49	2.34	1.75	4	D2
	0.09	4.39	6.32	46	SP

Table S2. Room-temperature Mössbauer Parameters of the singlet and sextet components. The hyperfine fields are 9.5, 33.3 and 20.6 Tesla for FeB, α-Fe and Fe_3C respectively. IS, QS and LW values are given in mm s^{-1}.

Sample	IS	QS	LW	% area	Label
(a) $Fe_{0.5}$-N/CDC-1	0.26	0.23	0.39	87	FeB
(b) $Fe_{0.5}$-N/CDC-2	-0.10	0.00	0.40	2	γ-Fe
(c) Fe_1-N/CDC-2	-0.09	0.00	0.34	8	γ-Fe
	0.17	0.00	0.30	2	Fe_3C
	0.01	0.00	0.36	3	α-Fe
(d) Fe_2-N/CDC-2	-0.10	0.00	0.40	18	γ-Fe
	0.17	0.00	0.30	4	Fe_3C
	0.01	0.00	0.36	6	α-Fe

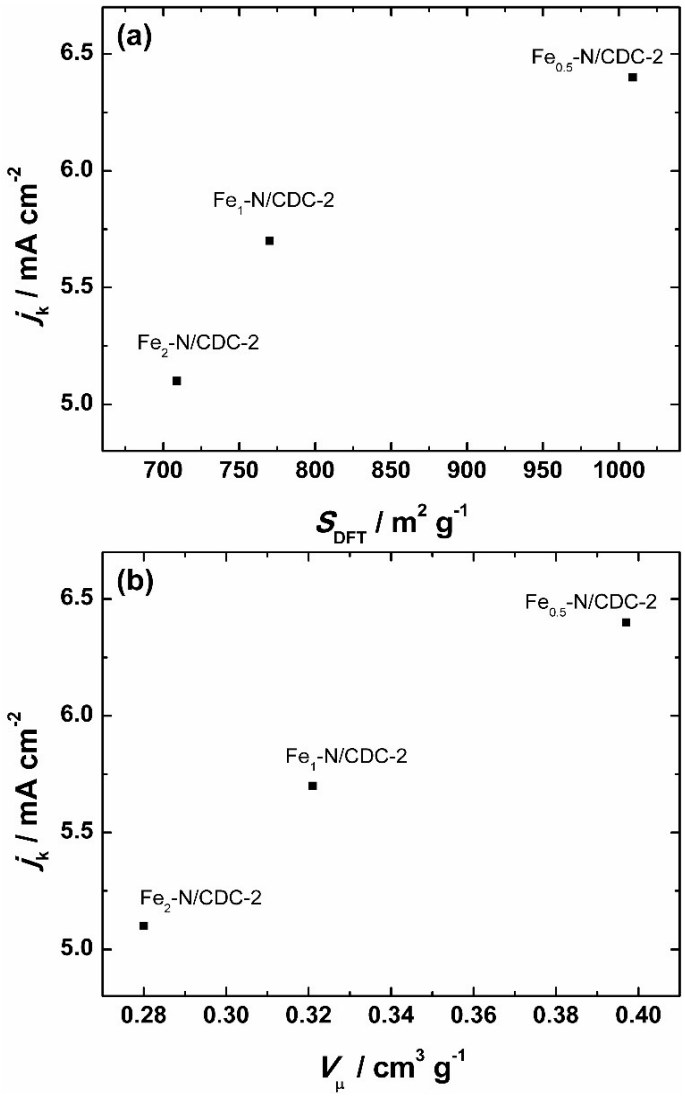

Figure S2. The dependence of kinetic current densities on the specific surface area (a) and micropore volume (b) for the three CDC-2 derived Fe-N-C catalysts.