

Supplementary Materials: Fast and Facile Synthesis of Pt Nanoparticles Supported on Ketjen Black by Solution Plasma Sputtering as Bifunctional HER/ORR Catalysts

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Table S1. The HER and ORR onset potentials of the catalysts in this work and Pt catalysts in literatures. All electrochemical measurements were recorded in 0.5 M H₂SO₄ solution at room temperature.

Sample	Catalyst Loading on GC Electrode ($\mu\text{g}_{\text{Pt}} \text{ cm}^{-2}$)	HER Onset Potential (V <i>vs.</i> RHE)	ORR Onset Potential (V <i>vs.</i> RHE)	Reference
KB	-	-	0.29	This work
5-Pt/KB (5.5%)	11.7	-0.02	0.77	This work
10-Pt/KB (10.6%)	22.5	-0.02	0.78	This work
20-Pt/KB (17.9%)	38.0	-0.02	0.80	This work
20% Pt/VC	42.4	-0.02	0.83	This work
7% Pt/CNF	13.7	-0.15	-	[S1]
15% Pt/GN	14.5	-0.02	-	[S2]
3.5% Pt/MWCNT	-	0.00	-	[S3]
3.5% Pt/rGO	-	-0.02	-	[S3]
14.1 Pt/HPC	14.9	-0.02	-	[S4]
40% Pt/KB	22.6	-	0.83	[S5]
40% Pt/C-JM	50.9	-	0.93	[S6]
Pt nanocube/KB	-	-	0.94	[S7]
20% Pt/G	32.4	-	0.87	[S8]
20% Pt/G-CNF	32.4	-	0.88	
20% Pt/G-PCNF	32.4	-	0.91	
20% Pt/rGO	50	-	0.92	[S9]
20% Pt/CNT	12.2	-	0.93	[S10]
16.6% Pt/MWCNT	41	-	0.81	[S11]
20% Pt/OMC	105	-	0.94	[S12]
20%Pt/TiO ₂ /C	56	-0.02	0.90	[S13]
20% Pt/C	45	0.01	0.90	[S14]

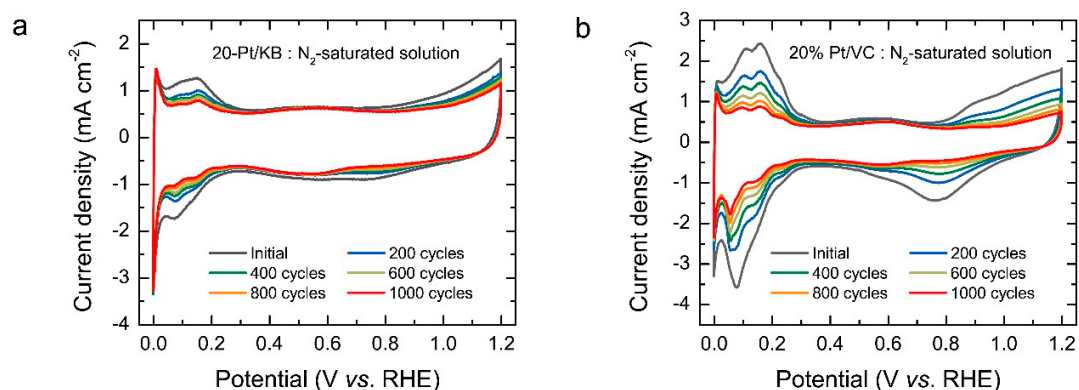


Figure S1. CV curves at different cycles measured in N_2 -saturated 0.5 M H_2SO_4 solution: (a) 20-Pt/KB and (b) 20% Pt/VC.

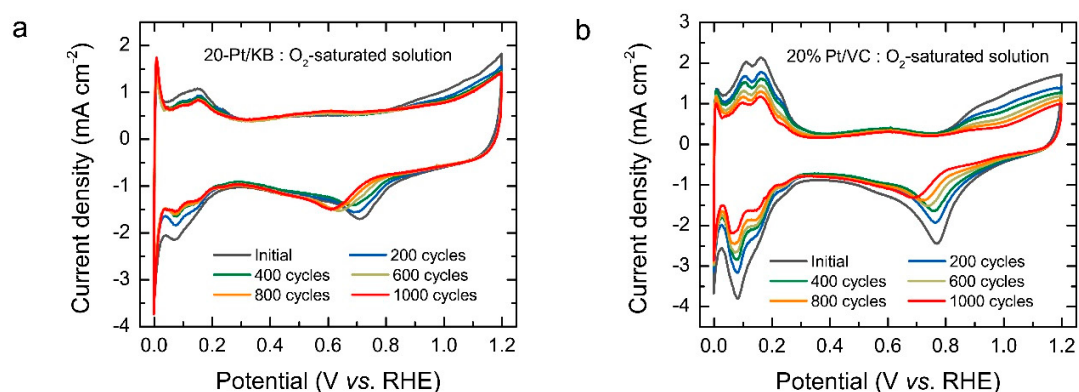


Figure S2. CV curves at different cycles measured in O_2 -saturated 0.5 M H_2SO_4 solution: (a) 20-Pt/KB and (b) 20% Pt/VC.

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