

Supporting Information

Facile Synthesis of Nitrogen and Sulfur Dual-doped Graphitized carbon Microspheres and Its High Performance for Oxygen Reduction Reaction

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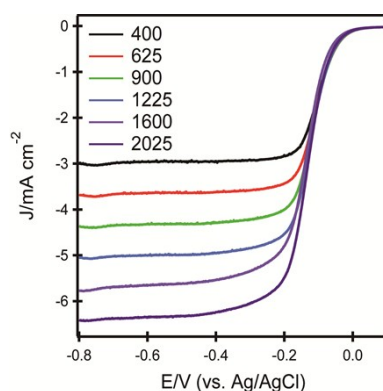


Fig. S1 Linear sweep curves of Pt/C on rotating disk electrode at various rotation speeds. (Scan speed: 5 mV s⁻¹)

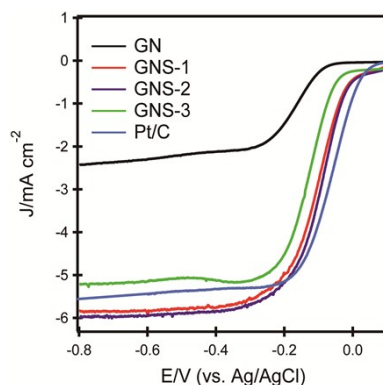


Fig. S2 Liner sweep curves of different catalysts on rotating disk electrode at 1600 rpm. (Scan speed: 5 mV s⁻¹)

Table S1 The position and XPS fitting parameters of N element

sample	C-C		C-N		C-O		C=O		-O-C=O	
	Binding energy (eV)	FWHM fit param (eV)	Binding energy (eV)	FWHM fit param (eV)	Binding energy (eV)	FWHM fit param (eV)	Binding energy (eV)	FWHM fit param (eV)	Binding energy (eV)	FWHM fit param (eV)
GR	284.6	1.02	285.5	1.16	286.7	1.16	287.9	1.16	289.3	1.07
GS-1	284.6	1.20	285.7	1.12	286.7	1.12	287.9	1.27	289.4	1.29
GS-2	284.6	1.19	285.7	1.06	286.8	1.06	287.8	1.29	289.4	1.20
GS-3	284.6	1.16	285.8	1.16	286.7	1.11	287.9	1.28	289.4	1.11

Table S2 The position and XPS fitting parameters of N element

sample	Pyridinic N		Pyrrolic N		Quaternary N	
	Binding energy (eV)	FWHM fit param (eV)	Binding energy (eV)	FWHM fit param (eV)	Binding energy (eV)	FWHM fit param (eV)
GR	398.3	1.55	400.4	1.61	401.5	1.62
GS-1	398.3	1.84	400.4	1.68	401.6	1.42
GS-2	398.3	1.59	400.5	1.67	401.6	1.67
GS-3	398.2	1.64	400.5	1.77	401.5	1.72

Table S3 The position and XPS fitting parameters of S element

sample	S 2p _{3/2}		S 2p _{1/2}		-SO _n -	
	Binding energy (eV)	FWHM fit param (eV)	Binding energy (eV)	FWHM fit param (eV)	Binding energy (eV)	FWHM fit param (eV)
GR	-	-	-	-	-	-
GS-1	163.8	0.90	164.9	1.15	168.1	2.38
GS-2	163.8	0.88	164.9	0.98	168.0	2.37
GS-3	163.8	1.01	164.9	1.15	168.2	2.08