

Supporting Information

A partially reduced C₆₀-grafted macroporous carbon composite for enhanced of nitroaromatic compounds electrocatalysis

Table S1 Comparison of the charge-transfer resistance and response to K₃Fe(CN)₆/K₂Fe(CN)₆ with different electrodes

Electrode	R_{ct} (Ω)	I_p (μ A)	ΔE_p (mV)
bare GCE	656.8	26.5	128.5
C ₆₀ /GCE	7162.5	9.6	469.2
MPC/GCE	16.5	39.1	117.7
MPC-CVs/GCE	16.9	39.1	117.9
C ₆₀ /MPC/GCE	7.8	53.2	89.2
K ₃ C ₆₀ /MPC/GCE	5.2	57.8	85.3

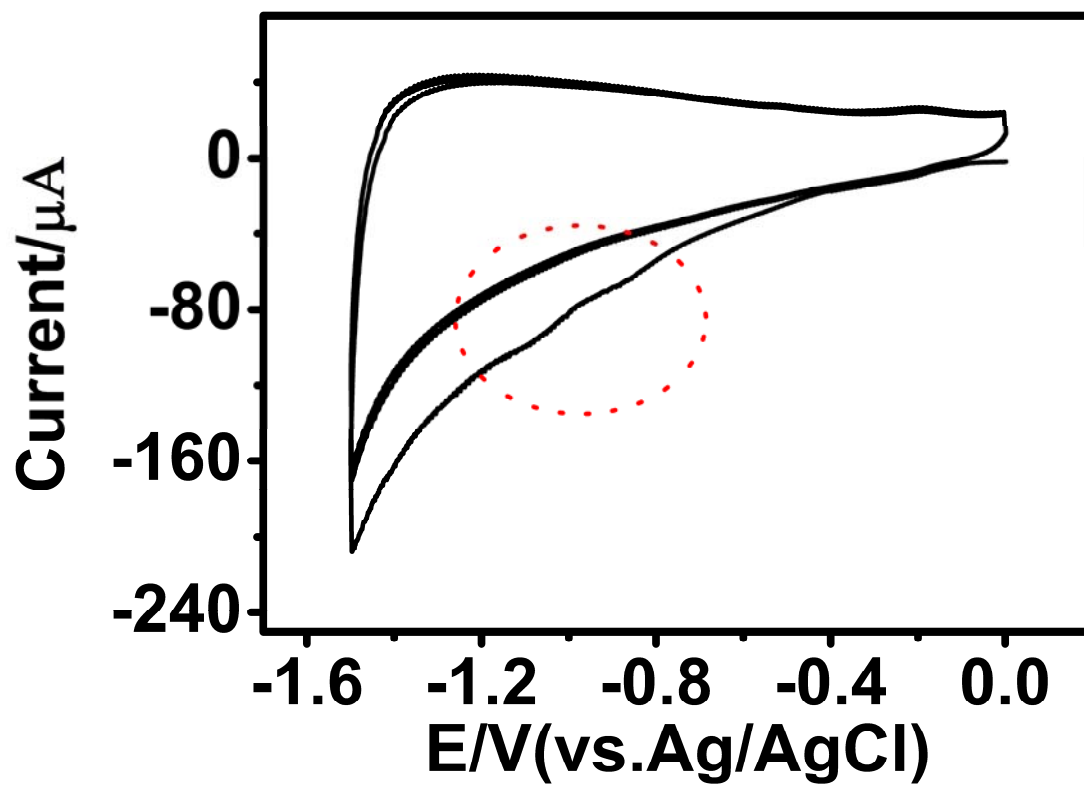


Fig. S1 CVs for $C_{60}/MPC/GCE$ with three scan cycles. Electrolyte, 0.1 mol L^{-1} pH 7.0

PBS. Scan rate, 10 mV s^{-1} .

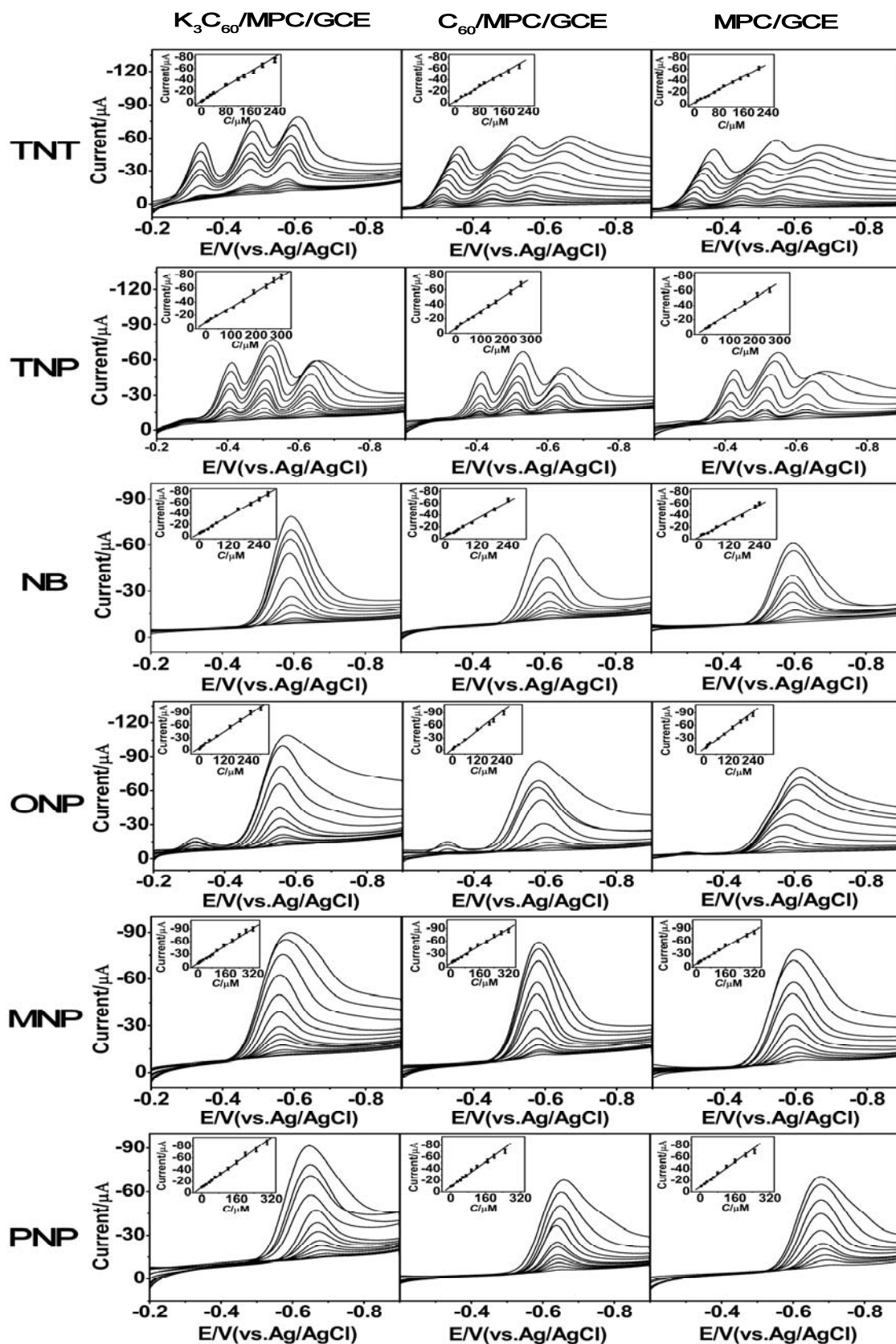


Fig. S2 Current responses for NACs at the MPC/GCE, $C_{60}/MPC/GCE$, and $K_3C_{60}/MPC/GCE$. (The second peaks of TNT and TNP were selected to study the linear range.)

Table S2 Electrochemical parameters for NACs were obtained at the MPC/GCE, C₆₀/MPC/GCE, and K₃C₆₀/MPC/GCE

(NACs)	Electrode	Linear range (μM)	Sensitivity ($\mu\text{A } \mu\text{M}^{-1}$)	Detection limit (μM)
(TNT)	MPC/GCE	3-210	0.274	1.21
(TNT)	C ₆₀ /MPC/GCE	3-210	0.293	1.02
(TNT)	K ₃ C ₆₀ /MPC/GCE	0.5-240	0.303	0.17
(TNP)	MPC/GCE	5-260	0.216	2.05
(TNP)	C ₆₀ /MPC/GCE	1-260	0.228	0.42
(TNP)	K ₃ C ₆₀ /MPC/GCE	1-300	0.230	0.40
(NB)	MPC/GCE	1-140	0.263	0.36
(NB)	C ₆₀ /MPC/GCE	0.5-140	0.302	0.18
(NB)	K ₃ C ₆₀ /MPC/GCE	0.5-160	0.345	0.17
(ONP)	MPC/GCE	5-240	0.331	2.89
(ONP)	C ₆₀ /MPC/GCE	1-250	0.342	0.45
(ONP)	K ₃ C ₆₀ /MPC/GCE	0.5-300	0.360	0.18
(MNP)	MPC/GCE	1-320	0.234	0.56
(MNP)	C ₆₀ /MPC/GCE	1-320	0.248	0.32
(MNP)	K ₃ C ₆₀ /MPC/GCE	1-320	0.284	0.32
(PNP)	MPC/GCE	5-250	0.251	2.11
(PNP)	C ₆₀ /MPC/GCE	0.5-250	0.260	0.22
(PNP)	K ₃ C ₆₀ /MPC/GCE	0.5-300	0.282	0.15

Table S3 Determination of NACs in real samples by standard addition method at $K_3C_{60}/MPC/GCE$ ($n = 5$).

Samples	Added (μM)	Average found (μM)	Recovery (%)
TNT	10	9.52	95.2
TNT	50	48.61	97.2
TNT	100	98.60	98.6
TNP	10	9.67	96.7
TNP	50	51.22	102.4
TNP	100	97.93	97.9
NB	10	9.42	94.2
NB	50	48.21	96.4
NB	100	101.19	101.2
ONP	10	10.02	100.2
ONP	50	48.66	97.3
ONP	100	98.5	98.5
MNP	10	9.51	95.1
MNP	50	48.31	96.6
MNP	100	95.2	95.2
PNP	10	9.88	98.8
PNP	50	48.96	97.9
PNP	100	96.6	96.6