

## **Supporting Information**

### **Poly(caffeic acid) redox couple decorated on electrochemically reduced graphene oxide for electrocatalytic sensing free chlorine in drinking water**

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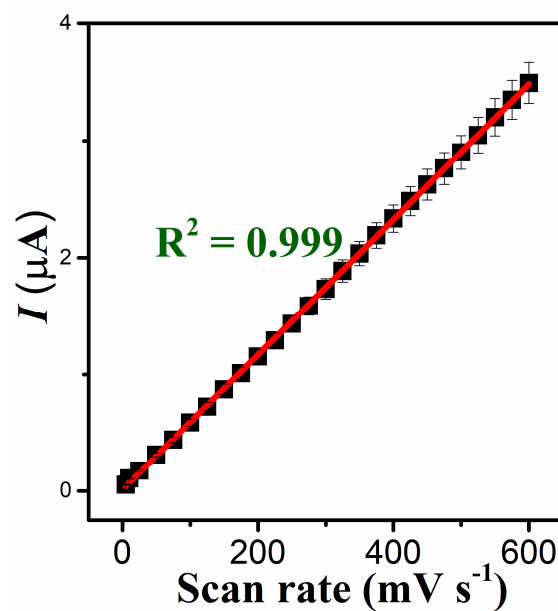
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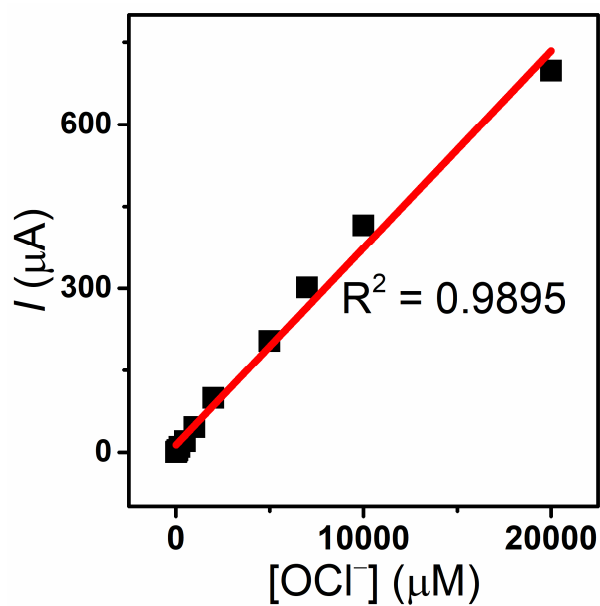
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**Figure S1.** A plot of the anodic peak current vs. scan rate.



**Figure S2.** Amperometric  $i$ - $t$  curve for the determination of free-Cl on the p-CFA@ERGO/GC modified electrode at a wide concentration range: (a)

0.02, (b) 0.05, (c) 0.1, (d) 0.2, (e) 0.5, (f) 1, (g) 2, (h) 5, (i) 7, (j) 10, and (k) 20 mM addition.

**Table S1.** Measured binding energies and areas for common chemical states of carbon in the C 1s region of XPS.

Sample	Chemical state	Binding energy (eV)	Area
GO/GC	C–C	284.6	63,572
	C–OH/C–O–C	285.3	92,322
	C=O	287.1	15,562
	O=C–OH	288.0	51,909
	–COO–	291.6	8,267
ERGO/GC	C–C	284.6	131,220
	C–OH/C–O–C	285.5	32,805
	C=O	286.0	66,100
	O=C–OH	288.8	18,978
	–COO–	292.8	1,646
p-CAF/GC	C–C	284.6	34,555
	C–OH/C–O–C	285.0	69,707
	C=O	286.3	22,098
	O=C–OH	288.6	10784
	–COO–	291.4	1,336
p-CAF@ERGO/GC	C–C	284.6	29,116
	C–OH/C–O–C	285.2	39,119
	C=O	286.5	14,558
	O=C–OH	288.5	10,560
	–COO–	292.0	4,317

**Table S2.**  $I_D/I_G$  and C/O ratios obtained from the Raman and XPS spectra.

Sample	Raman spectral data			XPS
	D band (cm <sup>-1</sup> )	G band (cm <sup>-1</sup> )	$I_D/I_G$	C/O ratio
GO/GC	1351	1594	0.81	1.40
ERGO/GC	1344	1587	1.33	2.11
p-CAF@ERGO/GC	1344	1564	1.0	0.47