Supplementary Information (SI) for Environmental Science: Advances.

Scandia-doped zirconia for the electrochemical detection of hazardous dihydroxybenzene isomers in water

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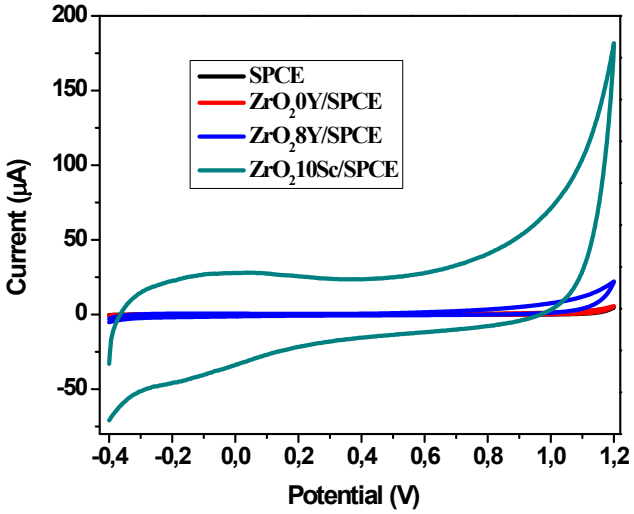


Fig. S1. *Electrochemical behavior using CV in 0.01 M PBS at a scan rate of 50 mV/s of the SPCE, $ZrO_2$0Y/SPCE, $ZrO_2$8Y/SPCE and $ZrO_2$10Sc/SPCE sensor in the -0.4 – 1.2 V potential window.*

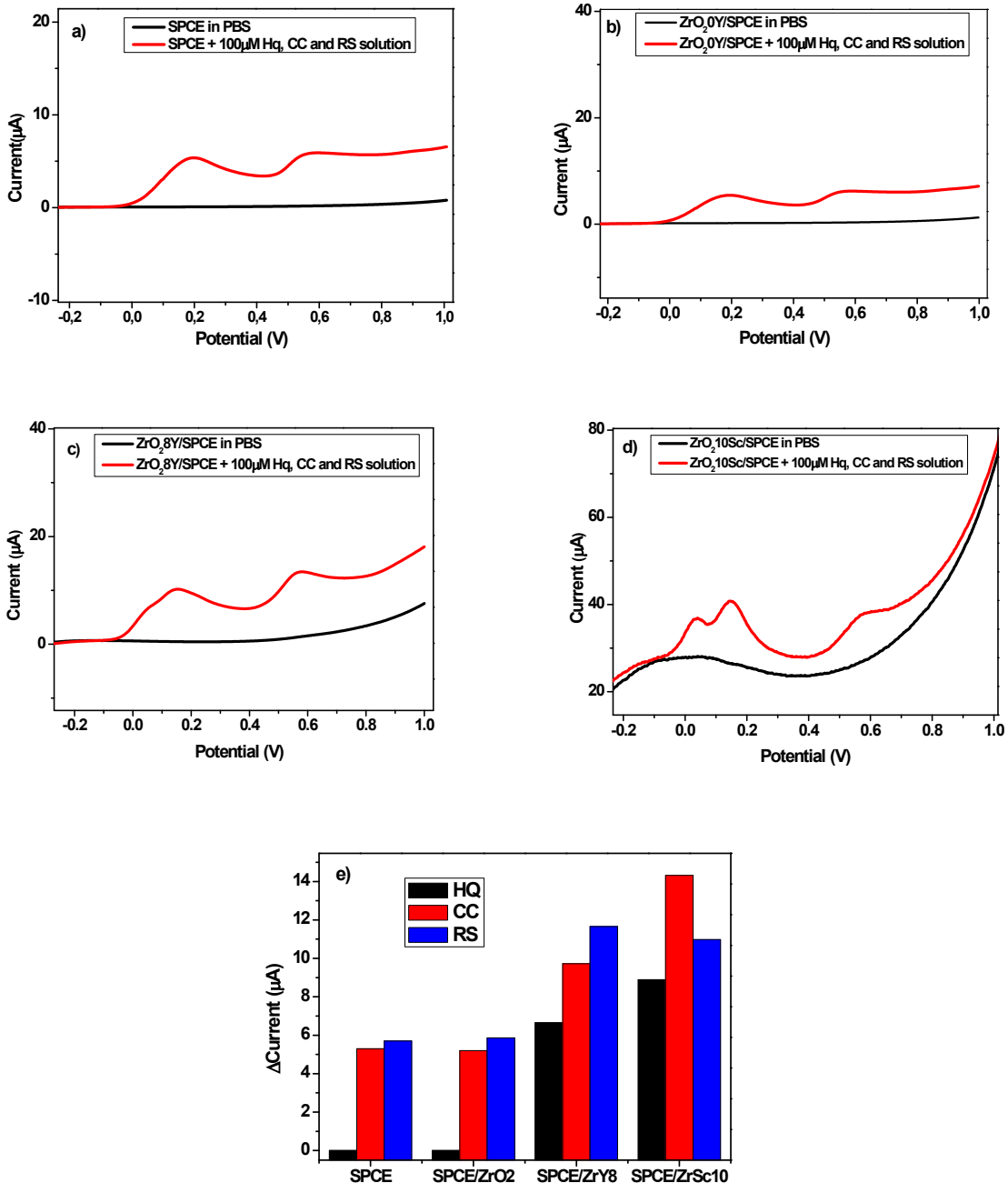


Fig. S2. *Linear sweep voltammetry (LSV) behavior of 100 μM HQ, RS and CC in 0.01 M PBS at a scan rate of 50 mV/s with: a) SPCE, b) $ZrO_2$0Y/SPCE, c) $ZrO_2$8Y/SPCE, and d) $ZrO_2$10Sc/SPCE in the -0.4 –*

1.2 V potential window. e) Variation of the anodic peak current for the three DHB isomers registered with the sensors tested.

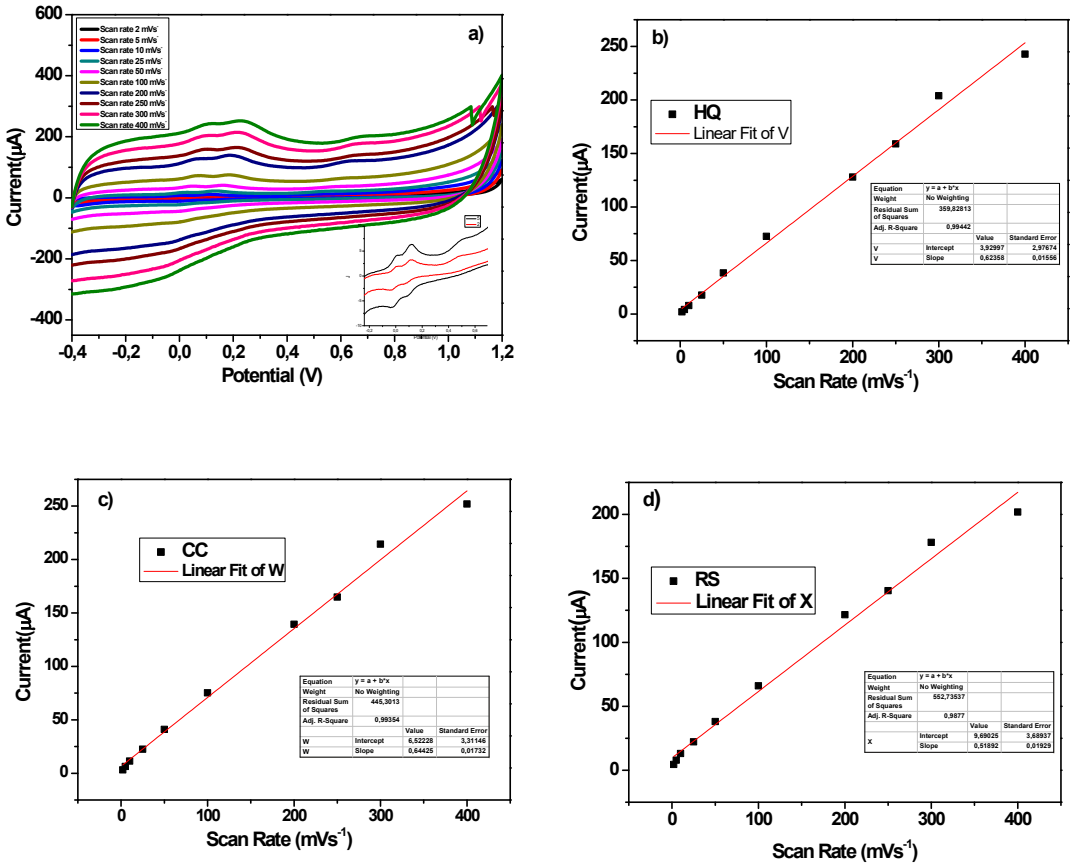
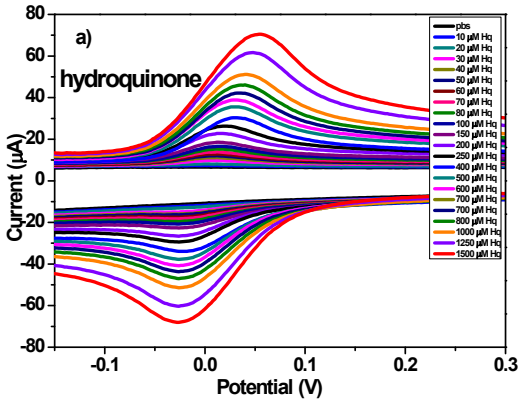
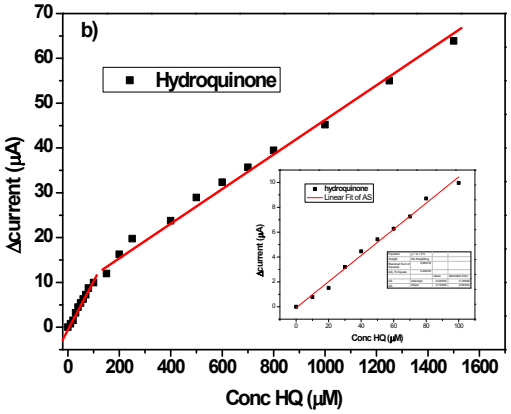
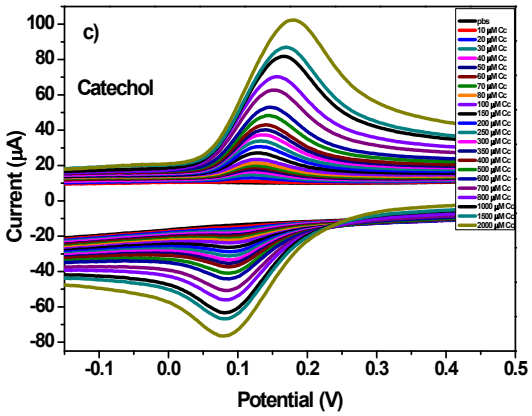
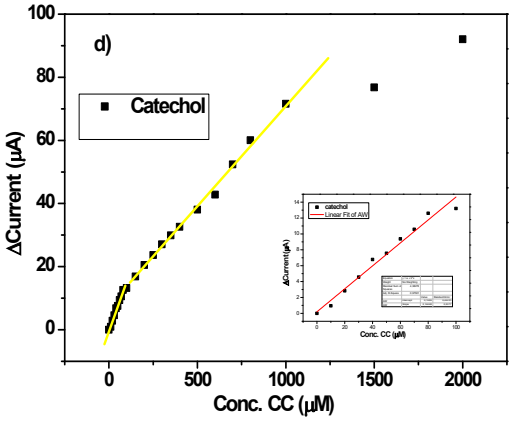


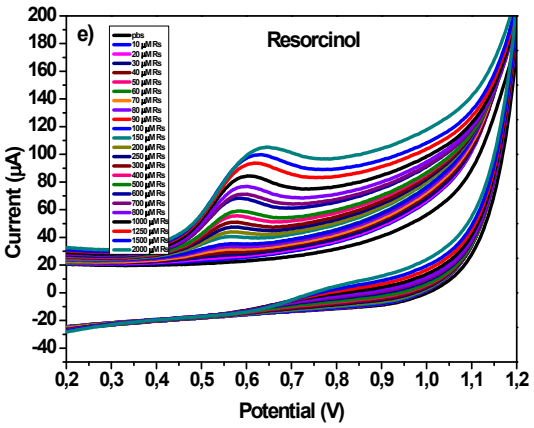
Fig. S3. *a) Cyclic voltammograms of $ZrO_2$10Sc/SPCE in a solution containing 100 µM HQ, CC e RS in PBS at pH=7.4 at scan rates from 2 to 400 mV/s. The inset shows the variation using the scan rate of 2 and 6 mV^{-1}; The variation of baseline-corrected anodic peak currents (Ipa) as a function of scan rate (b) HQ, (c) CC and (d) RS is shown.*


a)
hydroquinone
Current (μA)
Potential (V)


b)
Hydroquinone
ΔCurrent (μA)
Conc HQ (μM)


c)
Catechol
Current (μA)
Potential (V)


d)
Catechol
ΔCurrent (μA)
Conc. CC (μM)


e)
Resorcinol
Current (μA)
Potential (V)

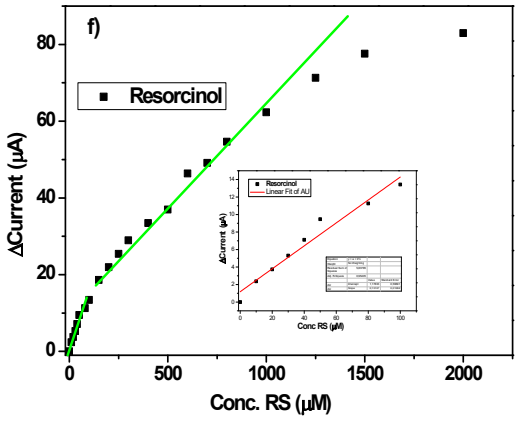

f)
Resorcinol
ΔCurrent (μA)
Conc. RS (μM)

Fig. S4. *CV of (a) HQ, (c) CC and (e) RS standard solutions with increasing concentrations from 0 to 2000 μM of analytes recorded in a 0. 01 M PBS of pH = 7.4 using $ZrO_2$10Sc/SPCE. Calibration graphs for peak currents (baseline corrected) as a function of analyte concentrations of (b) HQ, (d) CC, and (f) RS.*