

SUPPLEMENTARY MATERIAL

Improved photoelectrocatalytic effect of Co(II) and Fe(III) mixed porphyrins on graphite paste electrodes towards Hydrogen Evolution Reaction

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Table S1. Parameters obtained for the electrodic systems towards HER. R_s is solution resistance, R_{ct} is charge transfer resistance, L is inductance, and CPE is the constant phase element.

System	R_s	R_{ct}	L	CPE-T	CPE-P
Gr	305	3950	1	$2 \cdot 10^{-3}$	0.60
Gr / Co	340	1010	1	$1 \cdot 10^{-3}$	0.70
Gr / Co irradiated	355	745	1	$1 \cdot 10^{-3}$	0.65
Gr / Fe	340	1950	1	$1 \cdot 10^{-4}$	0.65
Gr / Fe irradiated	370	1050	1	$2 \cdot 10^{-3}$	0.70
Gr / Co-Fe	390	850	1	$2 \cdot 10^{-3}$	0.70
Gr / Co-Fe irradiated	350	510	1	$2 \cdot 10^{-3}$	0.60

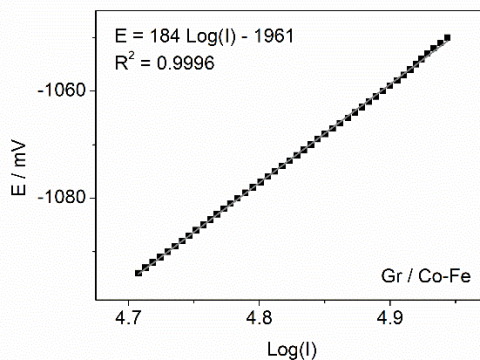
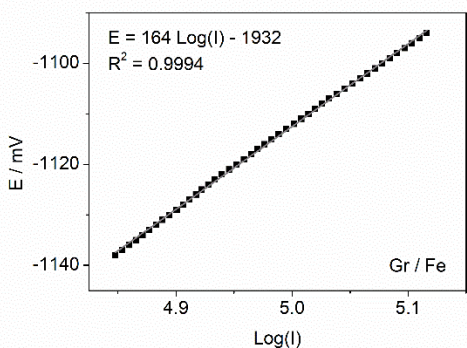
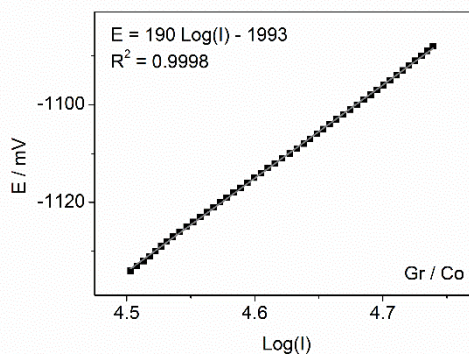
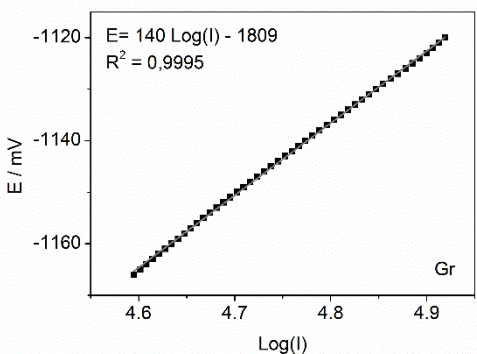


Figure S1. Tafel sloped for the studied systems, measured in phosphate buffer pH = 7, a $\nu = 5 \text{ mV}\cdot\text{s}^{-1}$.

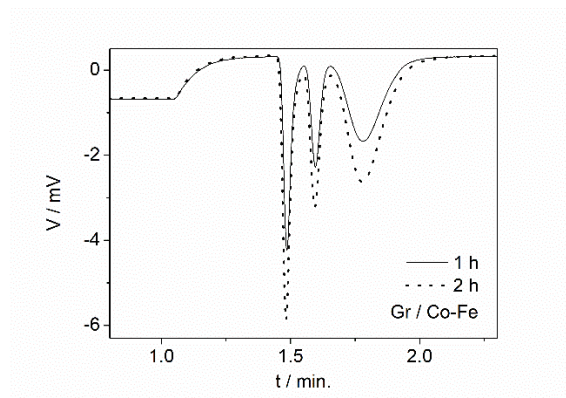


Figure S2. Signals obtained by gaseous chromatography for the injections every 1 hour for the electrolysis using the system Gr / Co-Fe. From left to right, the first signal is hydrogen, the second is nitrogen, and the third is oxygen.

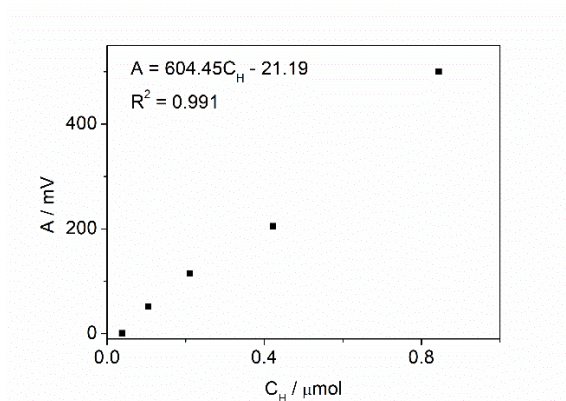


Figure S3. Linear correlation between area (mV) and hydrogen concentration (μmol) obtained by gaseous chromatography using extra-pure hydrogen (99.999%).

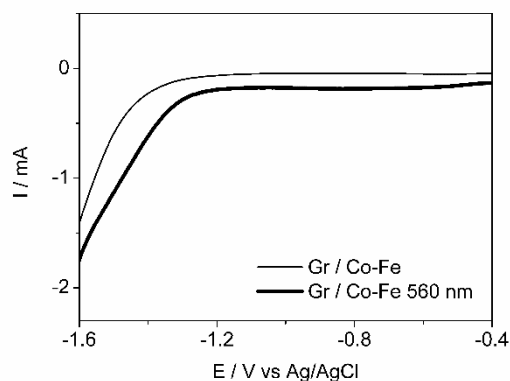


Figure S4. Voltammetric profile of the system Gr / Co-Fe used in the chromatographic determination, in absence and in presence of light (560nm). Phosphate buffer at pH = 7 in

Argon saturation $\nu = 0.1 \text{ V}\cdot\text{s}^{-1}$.