Electronic Supplementary Material (ESI) for Green Chemistry.

Supporting Information

Electrocatalytic upgrading of itaconic acid to methylsuccinic acid using fermentation broth as substrate solution

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1. Calculations

Calculation of charge chronoamperometry (Q = charge, I = current, t = time):

$$Q = \int_x^y I \, dt$$

Calculation of charge potentiometry:

$$Q = It$$

Caclulation of the faradiac efficiency (n_{mol} = amount of product in mol, n = number of electrons transferred, F = Faraday constant):

$$F_{eff} = \frac{n_{mol} nF}{Q} \cdot 100\%$$

2. Cyclic voltammograms

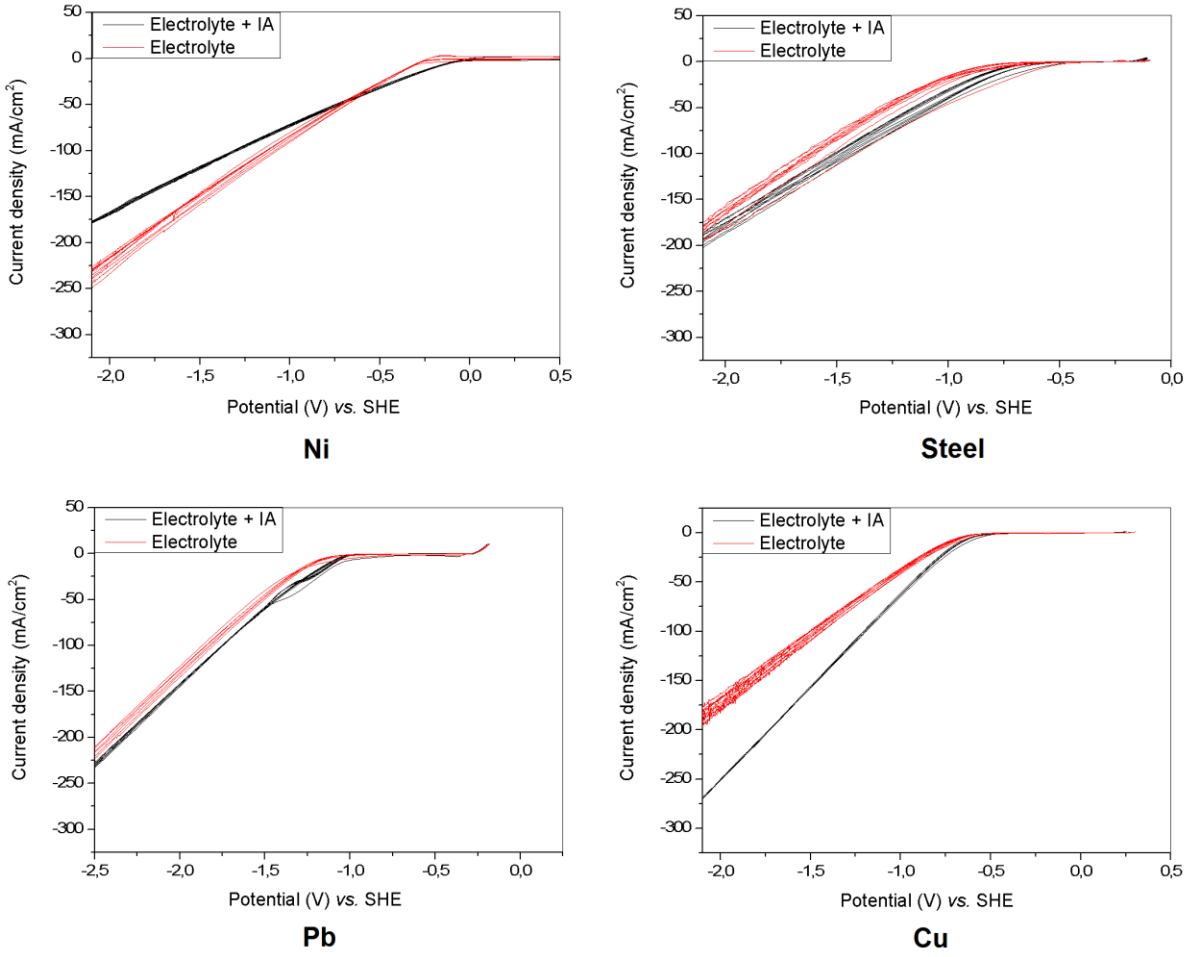

Figure 1: Cyclic voltammograms of aqueous sulfuric acid (0.5 mol L^{-1}) mixtures and aqueous sulfuric acid (0.5 mol L^{-1}) mixtures with 0.1 mol L^{-1} itaconic acid with different electrode materials.

3. NMR spectra