Supplementary material

Sustainable solar-driven electrochemical process for reforming lignocellulosic biomass effluent in high value-added products: green hydrogen, carboxylic acids and vanillic acid

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Figure S1. FTIR spectra of Soda lignin before and after electrolysis. The samples were chosen at the best experimental condition using 0.5 mol L^{-1} NaOH + 0.5 g L^{-1} Lignin at a current density of 100 mA cm^{-2}, identifying the more important signals.

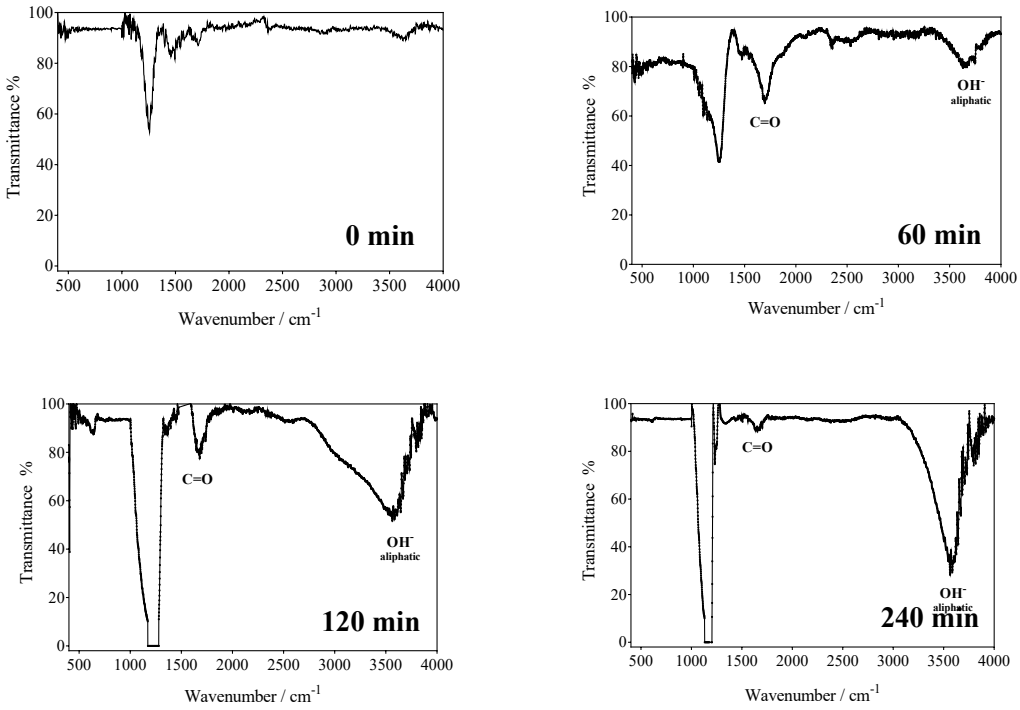

Figure S2. Ionic chromatogram registered for the effluent sample after electrochemical conversion of lignocellulosic biomass by applying 100 mA cm^{-2} in 0.5 mol L^{-1} NaOH at 180 min of electrolysis.

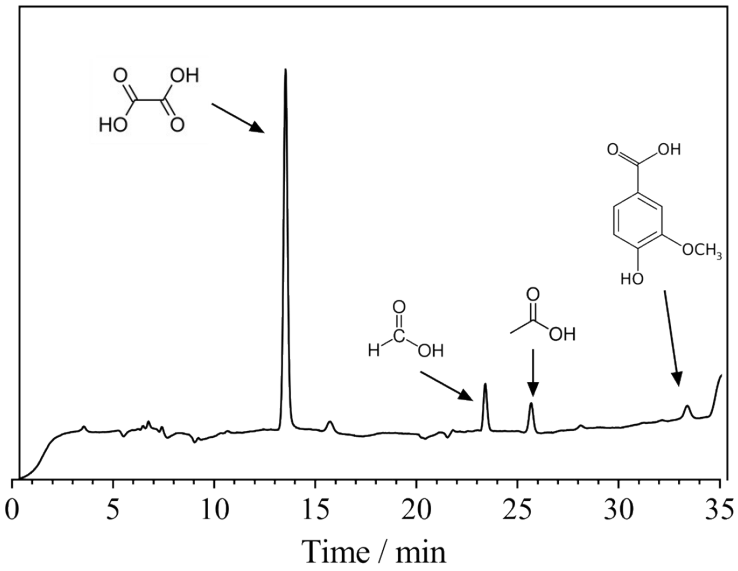

Figure S3. Pareto graphical analysis of the effect of electrolysis time, current density, and electrolysis time.

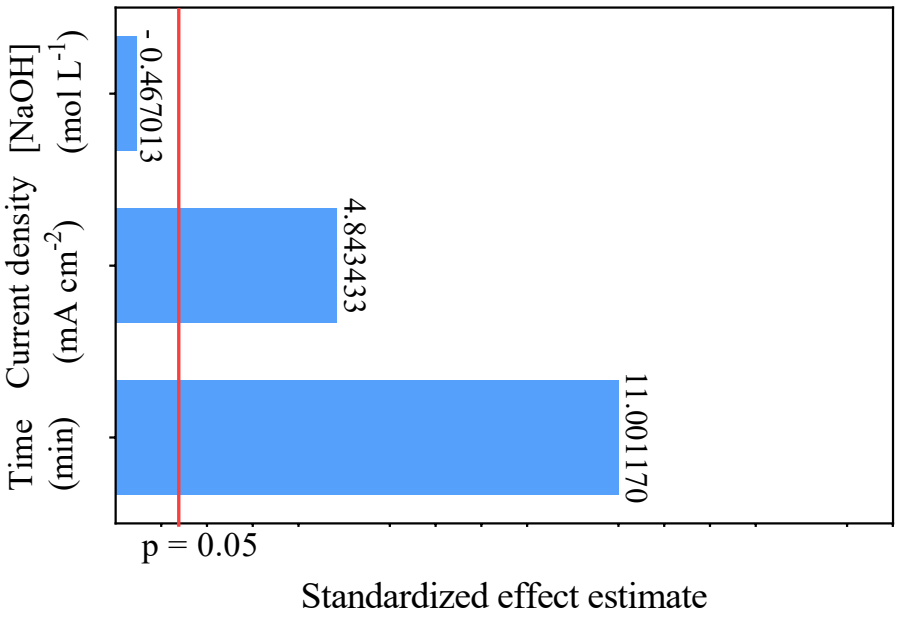

Figure S4. Energy consumption (EC) required for treatment solution of lignin (0.5 g L^{-1}) in presence of 0.5 mol L^{-1} of NaOH. Inset: EC as a function of COD removal. Conditions: (●) 40, (■) 70 and (▲) 100 mA cm^{-2}, 0.5 g L^{-1} lignin in 0.5 mol L^{-1} NaOH.