Supplementary material for:

Sustainability from the start: Biochar-based conductive inks enable the streamlined fabrication of green electroanalytical devices

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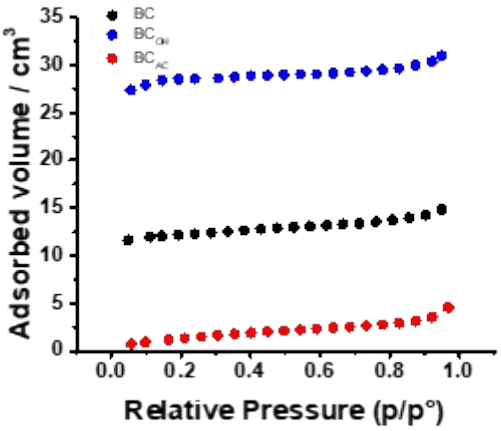

Figure S1. Brunauer-Emmett-Teller (BET) Analysis. Nitrogen sorption isotherm of Bc (black), BC_{OH} (blue) and BC_{AC} (red) exhibit specific surface areas between 91.95 (BC_{OH}) to 5.57 m^2/g (BC_{AC}), and a pore volume between 0.023 (BC_{OH}) to 0.007 cm^3/g (BC_{AC}).

Table 1. Porosity analysis results of BC and BC activated after pyrolysis by BET analysis

Material	Area BET m^2/g	Pore volume cm^3/g	Pore Size nm
BC	39.69	0.023	2.32
BC_{AL}	91.95	0.048	2.09
BC_{AC}	5.57	0.007	5.10

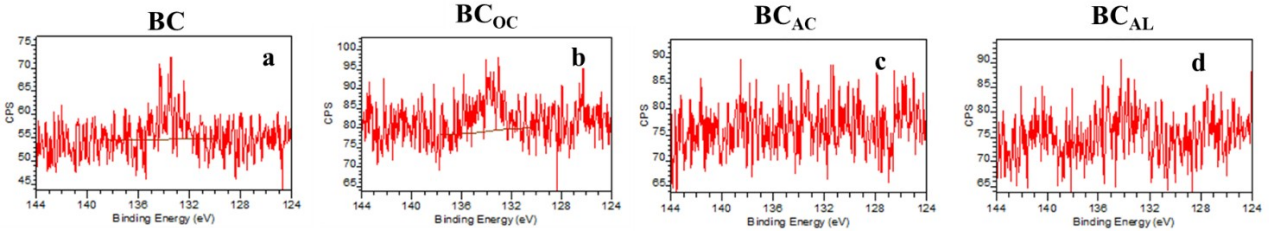

Figure S2. X-ray photoelectron spectroscopy (XPS) of BC, BCL, BC_{AC} and BC_{OH}. High-resolution spectra of P 2p, with a minimal signal at 133 eV for BC and BC_{OS} (compatible with PO_3).

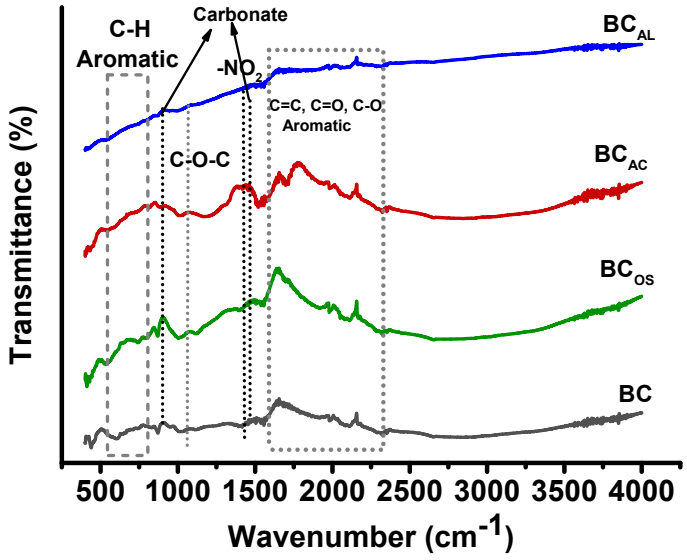

Figure S3. Attenuated Total Reflectance Fourier Transform Infrared Spectroscopy (ATR-FTIR) analysis of BC, BC_{OS}, BC_{AC} and BC_{AL}.

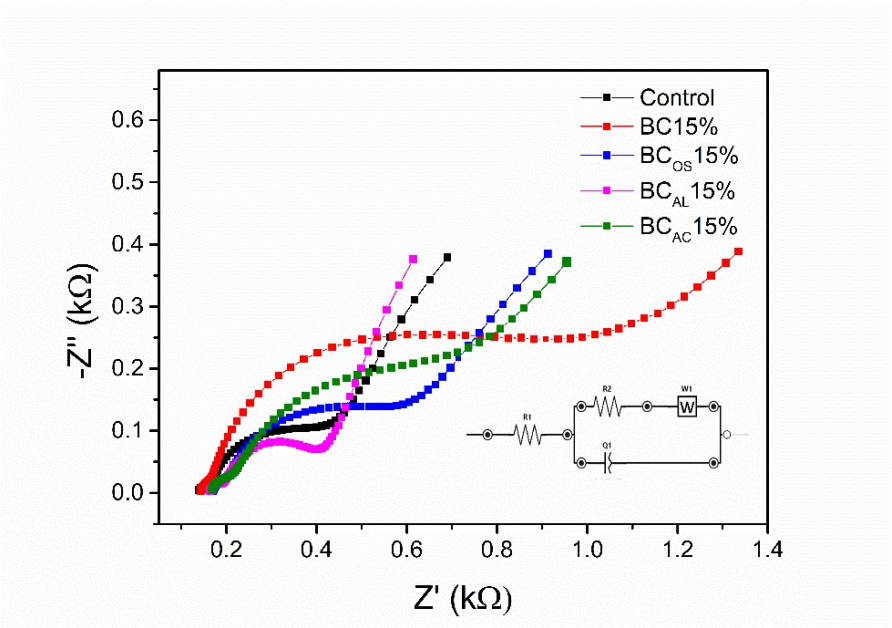

Figure S4. **EIS studies of PEs**. Nyquist diagrams obtained for Control, BC15%, $BC_{OS}15\%$, $BC_{AL}15\%$, and $BC_{AC}15\%$, in the presence of 5.0 mM of $[Fe(CN)_6]^{3-/4-}$. Insert shows the equivalent circuit model where R1 is Rs, R2 is Rct, W1 is W and Q1 is CPE.