SUPPORTING INFORMATION

Semi-solid electrodes based on injectable hydrogel electrolytes for shape-conformable batteries

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Section S1: rheological characterization.

Figure S1. Evolution of the elastic modulus ($G'$) and loss modulus ($G''$) of G1 gel (without carbon additive) as a function of the temperature.

Figure S2. (A) Shear thinning properties of G2-KB and G3-KB gels. (B) Dynamic step strain test of G2-KB and G3-KB gels to determine the injectability properties.
Section S2: photographs of the different gels without carbon additive to evaluate their shrinkage.

Figure S3. Photographs of the different gels as prepared and after 24 h.
Section S3: electrochemical stability window of the hydrogels.

Figure S4 shows the stability window of the electrolyte: 0 – 1.5 V vs Zn/Zn\(^{2+}\) (-0.34 V / 1.21 V vs RHE in neutral pH). The anodic process occurring at 1.5 V is associated with the oxidation of the gelifying additive while the large anodic process at 2.2 V is related with the oxygen evolution reaction.

Figure S4. Cyclic Voltamperograms (CVs) that were performed at 10 mV s\(^{-1}\) for the three hydrogels: (A) G1, (B) G2 and (C) G3. The measurements were carried out using Zn metal as counter and reference electrode and Pt electrode (0.2 cm\(^2\)) as working electrode.
Section S4: equivalent circuit for mixed ionic and electronic conductors.

\[ R_i = \frac{R_1 \cdot R_2}{R_2 - R_1} \]

Figure S5. Equivalent circuit for mixed ionic and electronic conductors.