

Supplementary

Wider Potential Windows of Cellulose Multiwall Carbon Nanotube Fibers Leading to Qualitative Multifunctional Changes in an Organic Electrolyte

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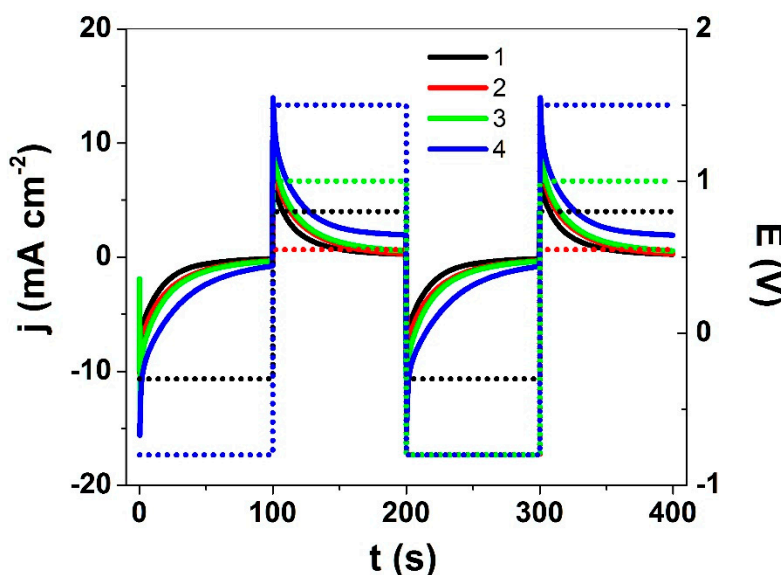


Figure S1. Current density time curves at frequency 0.005Hz of Cell-CNT fiber in LiTFSI-PC electrolyte applied at different potential range 1 (0.8V to -0.3V, black curve), potential range 2 (0.55V to -0.8V, red curve), potential range 3 (1.0V to -0.8V, green curve) and potential range 4 (1.5V to -0.8V, blue curve).

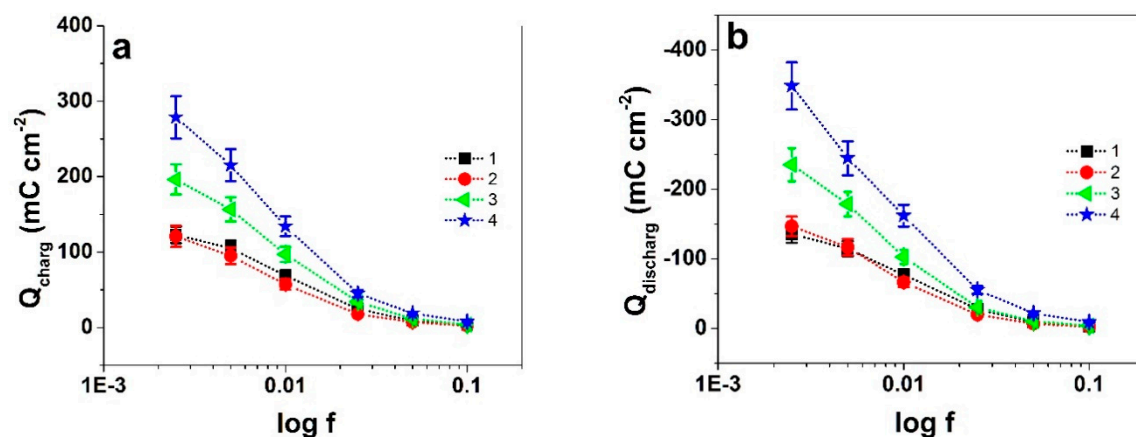


Figure S2. Square wave steps of Cell-CNT fibres in LiTFSI-PC electrolyte at different potential ranges 1-4 with 1 (0.8V to -0.3V, $\cdots \blacksquare \cdots$), 2 (0.55V to -0.8V, $\cdots \bullet \cdots$), 3 (1.0V to -0.8V, $\cdots \blacktriangle \cdots$) and 4 (1.5V to -0.8V, $\cdots \star \cdots$) showing in a: charge densities at positive charging Q_{charge} and in b: charge densities at negative charging $Q_{\text{discharge}}$ against a logarithmic scale of frequencies (0.0025Hz -0.1Hz).

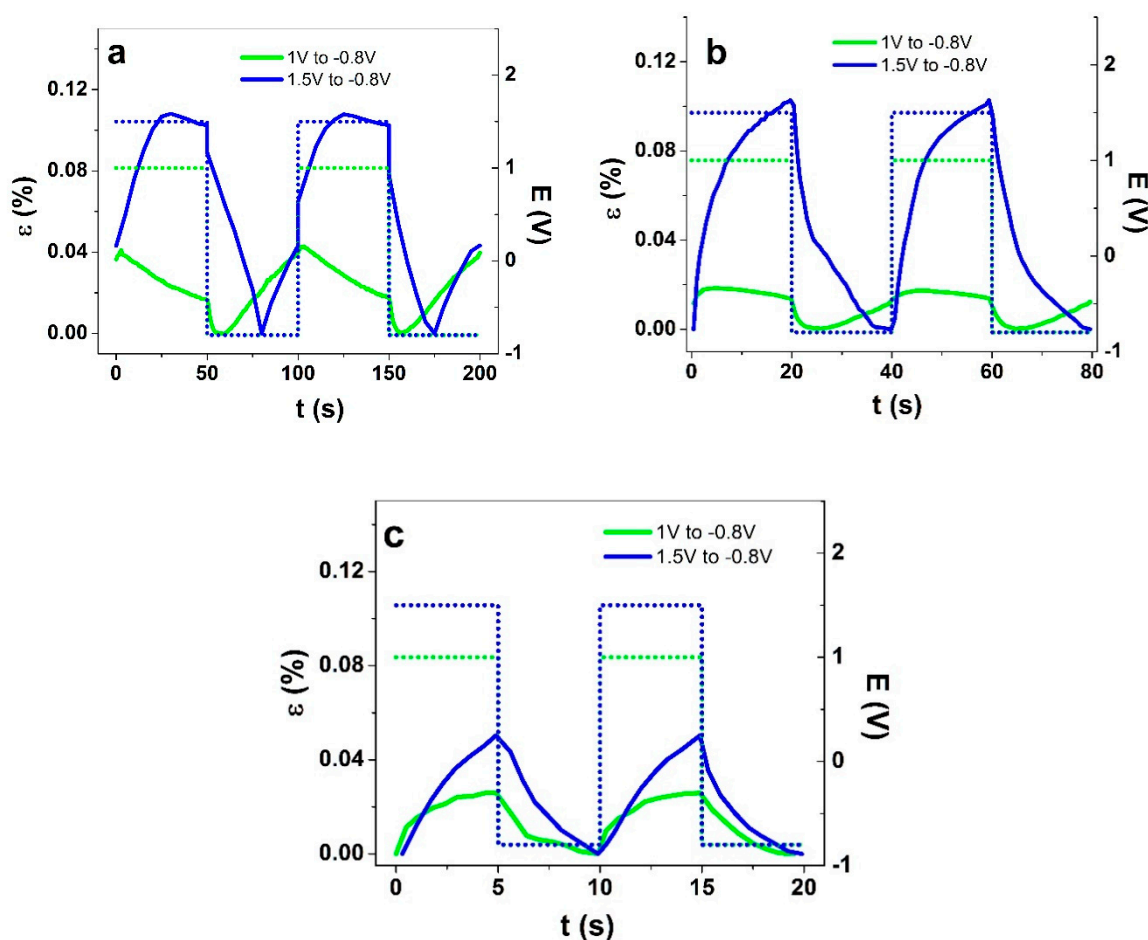


Figure S3. Square wave steps of Cell-CNT fibers in a potential range 3 (green curve) and potential range 4 (blue curve) showing strain ϵ of two subsequent cycles (3rd to 4th) against time t at different frequencies in a: 10mHz, b: 25mHz and c: 0.1Hz.