

Supporting Information

Improvement of Quasi-Solid-State Supercapacitors Based on “Water-in-Salt” Hydrogel Electrolyte by Introducing Redox- Active Ionic Liquid and Carbon Nanotubes

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Materials

The following analytical chemicals were purchased to carry out directly experiments without further purification. Polyvinyl alcohol (PVA, average molecular weight 88000, Aladdin Reagent, Shanghai, China), lithium bis(trifluoromethylsulphonyl)imide (LiTFSI, Energy Chemical, Shanghai, China), 1-butyl-3-methylimidazolium iodide (BMIMI, Aladdin Reagent, Shanghai, China) were used to prepare HEs. Activated carbon (AC) with specific surface area of $2167 \text{ m}^2 \text{ g}^{-1}$ (Yi Huan Co. Ltd, Fuzhou, China), carbon black (Alfa Aesar) and polytetrafluoroethylene dispersion (60 wt.%, Xingshengjie Co. Ltd, Guangzhou, China) are used to prepare AC electrodes.

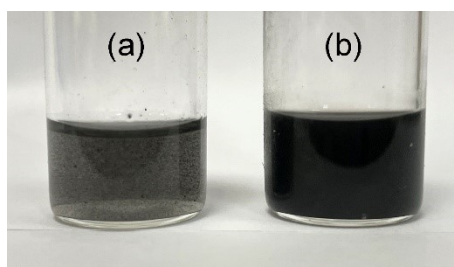


Fig. S1 Photos of (a) PVA/LiTFSI/CNTs and (b) PVA/LiTFSI/BMIMI/CNTs HEs.

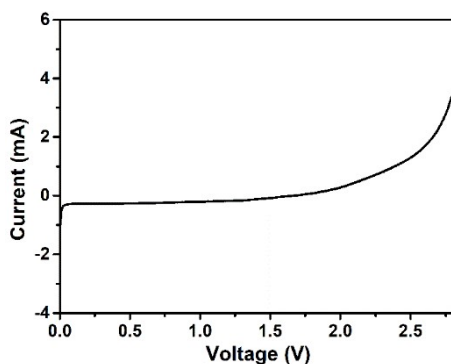


Fig. S2 Linear sweep voltammetry profile of the QSC of with a PVA/LiTFSI HE.