Electronic Supplementary Information (ESI) for

**Highly Porous Structured Polyaniline Nanocomposite for Freesized and Flexible High-Performance Supercapacitor**

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1. Synthesis of Pt_CPPyNP

Figure S1. Illustrative diagram of fabrication steps for Pt decorated carboxyl polypyrrole nanoparticles (Pt_CPPyNP).
2. Real images of PANI:CSA film

Figure S2. Real sample of Pt_CPPy/PANI:CSA paste (a) coated on the glass substrate and (b) free-standing.
3. Flexibility test of PANI:CSA film

**Figure S3.** Photographs of the solid-state symmetric Pt_CPPy/PANI:CSA supercapacitor with flat and bending formation.
4. SEM images of Pt_CPPy/PANI:CSA film before and after bending

**Figure S4.** Scanning electron microscope (SEM) image of Pt_CPPy/PANI:CSA film (a) before bending and (b) after 100 times bending.
5. Electrical conductivity of Pt_CPPy/PANI:CSA film before and after bending

\[\text{Conductivity (S cm}^{-1}\text{)}\]

**Figure S5.** Electrical conductivity measurement of Pt_CPPy/PANI:CSA film before bending (red) and after 100 times bending (blue).
6. Energy storage performance of PANI:CSA in two electrode system

**Figure S6.** (a) Cyclic voltammetry and (b) galvanostatic charge-discharge curves of the solid-state symmetric supercapacitor based on Pt_CPPy/PANI:CSA paste with various voltage scan rates (20 to 200 mV s\(^{-1}\)) and current densities (0.1 to 1.0 A g\(^{-1}\)).