Supplementary files

Laser-Induced Graphene electrode and Eco-friendly Chitosan-Poly(ethylene)glycol-$LiClO_4$ Electrolytes for All-Solid state Flexible Supercapacitors

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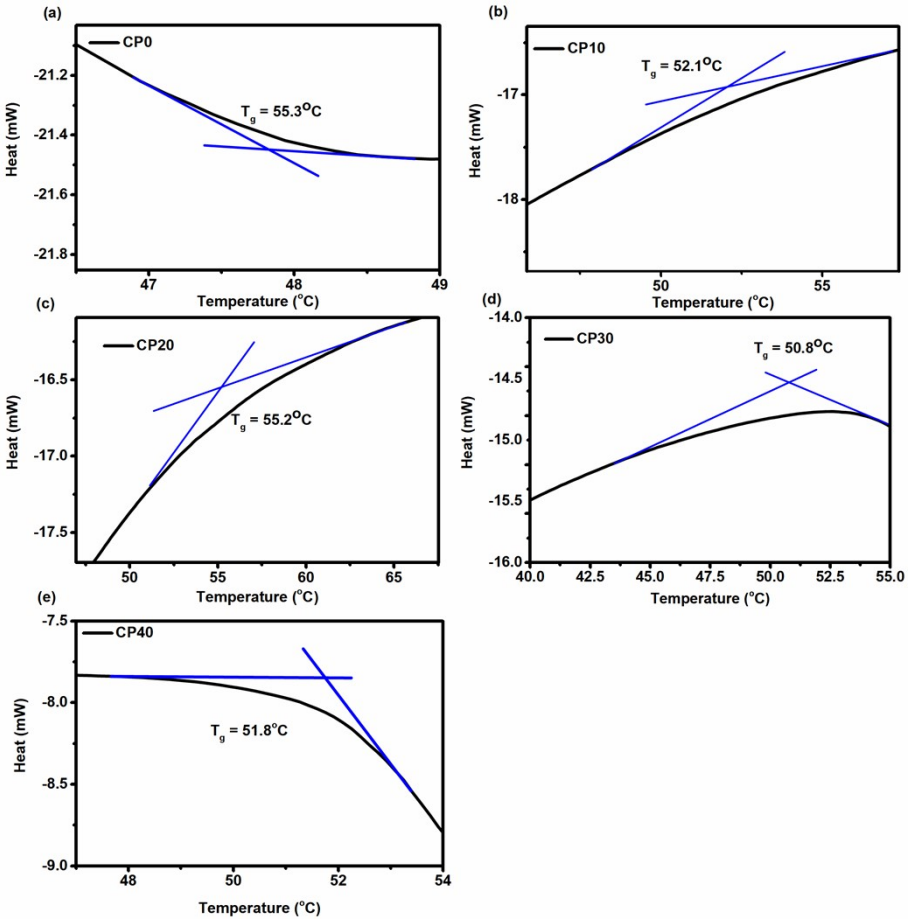

Figure S1. Determination of glass transition temperature (Tg) by the tangent method for the CP series: (a) CP0, (b) CP10, (c) CP20, (d) CP30, and (e) CP40.

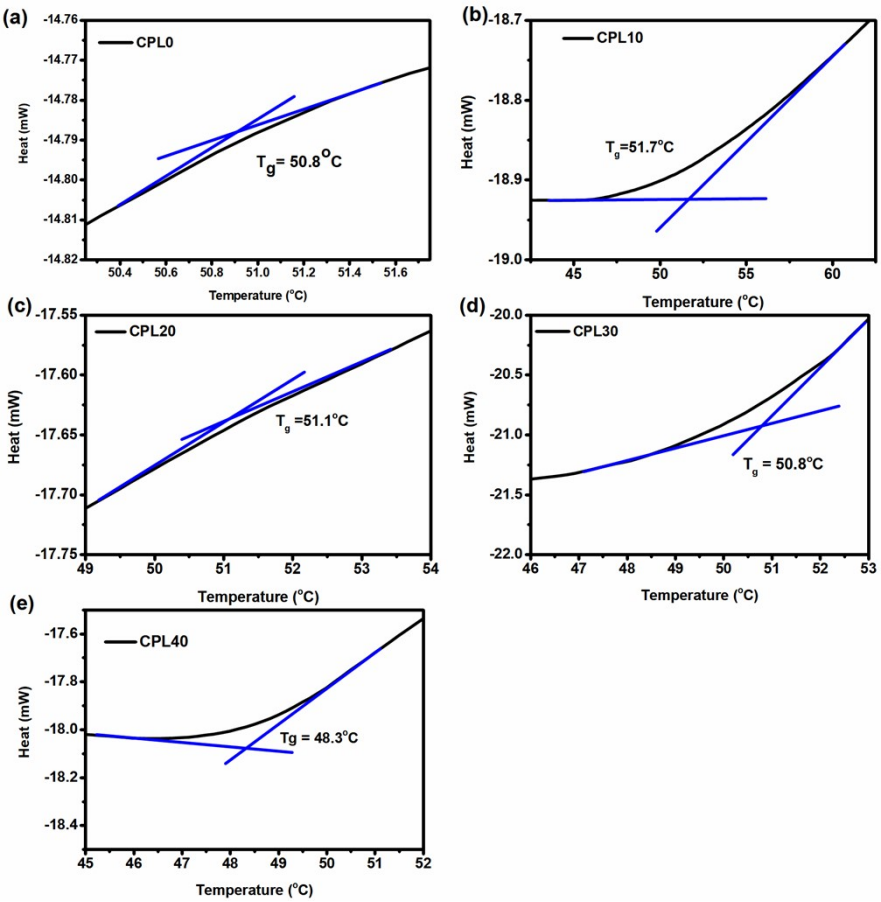

Figure S2. Determination of glass transition temperature (Tg) by the tangent method for the CPL series: (a) CPL0, (b) CPL10, (c) CPL20, (d) CPL30, (e) CPL40, and (f) CPL50

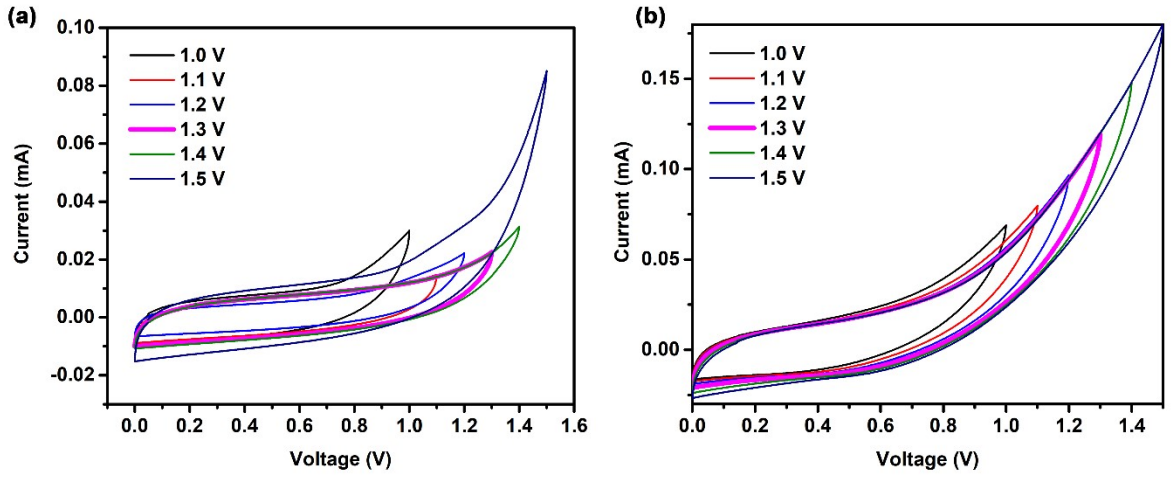

Figure S3. CV curves of (a) SC-1 and (b) SC-2 recorded at different potential windows from 1.0 V to 1.5 V at scan rate of 5 mVs^{-1}

Table S1. T_g of Chitosan- PEG blends

Name of Blend	T_g (°C)
CP0	55.3
CP10	52.1
CP20	55.2
CP30	50.8
CP40	51.8
CPL0	50.8
CPL10	51.7
CPL20	51.1
CPL30	50.8
CPL40	48.3

Table S2. Electrochemical Impedance Spectroscopy (EIS) Fitting Parameters for CPL10 and CPL20 Electrolytes

Sample	Q1	a1	Q2	a2	R2(kΩ)	Normalized χ2
CPL10	$0.348\ 9\times10^{-6}$	0.5508	$0.700\ 9\times10^{-9}$	0.863 1	16.651	0.3636
CPL20	$0.520\ 5\times10^{-6}$	0.6706	1.68×10^{-9}	0.822 5	2.226	0.09611

- Q1,Q2 – Constant Phase Element (CPE) parameters
- a1,a2 – CPE exponent (0–1) indicating deviation from ideal capacitance
- R2 – Bulk resistance of electrolyte (Ω)
- χ2– Goodness-of-fit parameter from impedance fitting

Table S3. Electrochemical Impedance Spectroscopy (EIS) Fitting Parameters for CPL30, CPL40 and CPL50 Electrolytes

Sample	R1(kΩ)	Q1	A1	Normalized χ^2
CPL30	0.108	8.63×10^{-6}	0.636 7	0.04994
CPL40	0.062	6.81×10^{-6}	0.590 3	0.087
CPL50	0.167	1.90×10^{-6}	0.631 3	0.06611

- R1 – Bulk resistance of electrolyte (Ω)

- Q1 – Constant Phase Element parameter
- a1 – CPE exponent

χ^2 – Fitting error value