Supporting Information

Intrinsically Conductive Polymer Binders for Electrochemical Capacitor Application

Minjeong Kang,[†] Ji Eun Lee,[†] Hyeon Woo Shim,[†] Min Seong Jeong,[‡] Won Bin Im,[‡] Hyeonseok Yoon[†,§,*]

[†]Department of Polymer Engineering, Graduate School, Chonnam National University, 77 Yongbong-ro, Buk-gu, Gwangju 500-757, South Korea.

[‡]School of Materials Science and Engineering, Chonnam National University, 77 Yongbong-ro, Buk-gu, Gwangju 500-757, South Korea.

[§]Alan G. MacDiarmid Energy Research Institute, School of Polymer Science and Engineering, Chonnam National University, 77 Yongbong-ro, Buk-gu, Gwangju 500-757, South Korea.

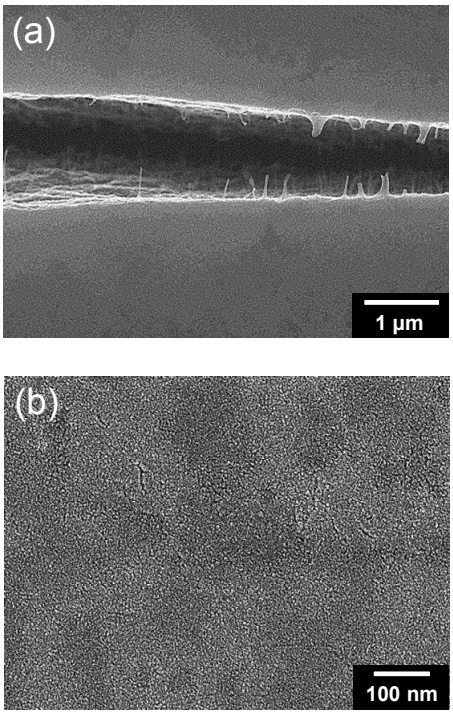

Figure S1. SEM images of Q_B-PANI coated on a glass substrate: (a) low- and (b) high-magnifications.

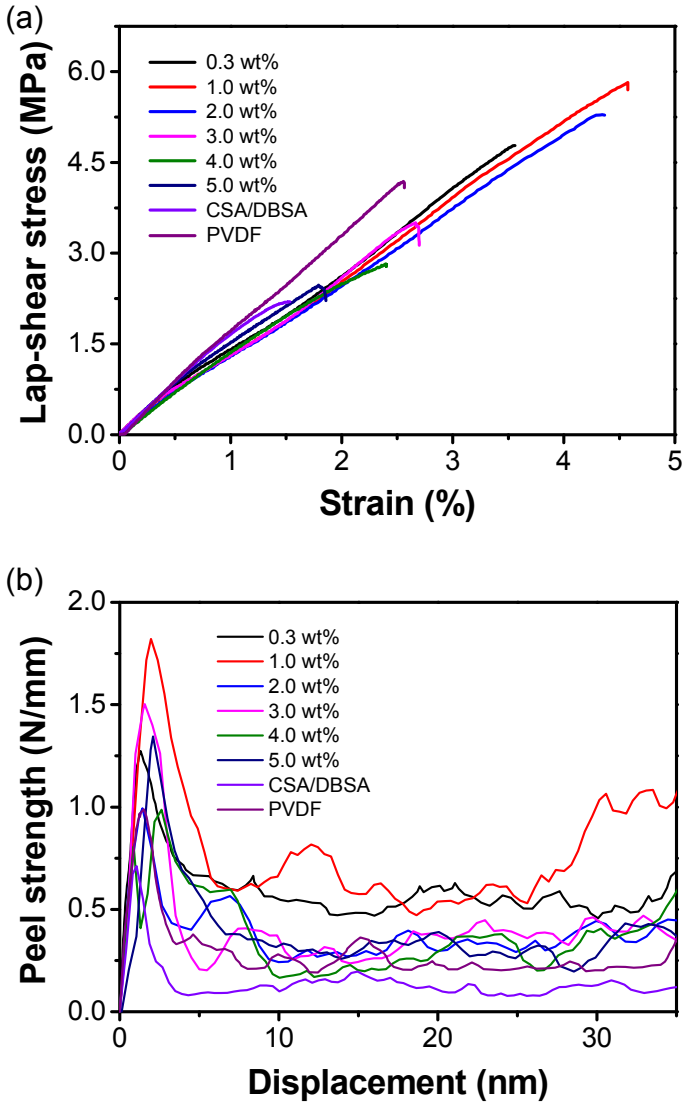

Figure S2. Representative (a) lap-shear stress-strain and (b) peel curves of *Q*-PANIs with different GCT contents.

Table S1. Major parameters determining from the lap-shear stress-strain curves.

GCT contents (wt%)	Strain at tensile (%)	Tensile strength (MPa)	Strain at fracture (%)	Fracture strength (MPa)
0.3	3.74 ± 0.79	4.57 ± 0.50	3.76 ± 0.79	4.51 ± 0.73
1.0	4.49 ± 0.79	5.16 ± 0.85	4.50 ± 0.79	5.04 ± 0.57
2.0	4.46 ± 0.40	4.88 ± 0.51	4.48 ± 0.40	4.74 ± 0.56
3.0	3.27 ± 0.82	3.32 ± 0.52	3.32 ± 0.80	3.09 ± 0.99
4.0	3.10 ± 0.87	3.15 ± 0.97	3.13 ± 0.86	3.10 ± 1.09
5.0	2.38 ± 0.59	2.84 ± 0.91	2.38 ± 0.59	2.76 ± 0.94
CSA/DBSA	1.26 ± 0.52	1.69 ± 0.73	1.48 ± 0.53	1.07 ± 0.46
PVDF	3.28 ± 0.89	3.88 ± 1.02	3.30 ± 0.88	3.60 ± 1.16

Table S2. Major parameters determining from the peel curves.

GCT contents (wt%)	Maximum peel strength ($N\ mm^{-1}$)	Average peel strength ($N\ mm^{-1}$)
0.3	1.26 ± 0.17	0.50 ± 0.11
1.0	1.99 ± 0.17	0.66 ± 0.19
2.0	1.28 ± 0.30	0.35 ± 0.12
3.0	1.28 ± 0.40	0.33 ± 0.05
4.0	1.22 ± 0.22	0.32 ± 0.11
5.0	1.16 ± 0.18	0.32 ± 0.13
CSA/DBSA	0.68 ± 0.15	0.16 ± 0.03
PVDF	1.16 ± 0.20	0.31 ± 0.11