Supporting information

A two-dimensional material all-textile capacitor

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Estimation of contact ratio (CR)

We estimated the contact areas (A_1, A_2, A_3, A_4) as compared to the total area (A_0) for every repeated unit as follows.

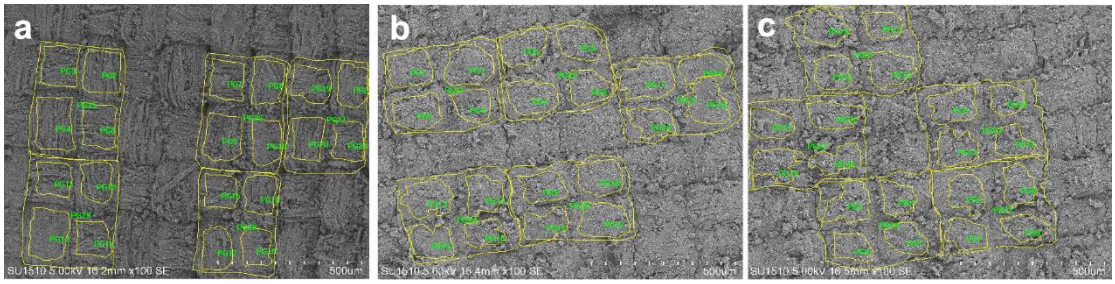

Figure 1S. The top-view SEM images of GNP/polyester (m_{GNP} ~ 0.69 mg cm^{-2}) where the yellow profiles sketch the contours of A_0, A_1, A_2, A_3, A_4 of each repeated units.

Applying the above method to the five repeated units in Figure 1S, we obained the following Table 1S, where the A_0 correspond to large yellow profiles in Figure 1S, and the A_1, A_2, A_3, A_4 correspond to 4 small yellow profiles inside repeated units. The averaged *CR* is obtained ~ 0.5.

Table 1S. The corresponding areas of A_0, A_1, A_2, A_3, A_4 of 15 repeated units.

Units	A_0	A_1	A_2	A_3	A_4	*CR*
1	122207	18148	16864	22354	17098	0.61
2	115978	14895	15540	19160	14820	0.56
3	110103	13152	13688	21857	13144	0.56
4	99954	12092	13495	13989	12580	0.52
5	122008	15158	14872	14229	13566	0.47
6	119889	17167	17738	19637	12609	0.56
7	116389	16516	15853	17262	14339	0.55
8	115432	13615	16561	13312	18407	0.54
9	114316	17645	14566	15091	10755	0.51
10	113864	19884	12664	18419	12534	0.56
11	123926	16615	11381	12392	10929	0.41
12	125079	13749	12903	12549	11381	0.40
13	118848	16113	10572	14219	11335	0.44
14	124349	10574	15247	13437	15821	0.44
15	121584	13615	14642	15298	12707	0.46