Supplementary data: “Segmentation of conducting domains in PEDOT:PSS films induced by an additive for conductivity enhancement”

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Fig. S1. Minor-axis lengths versus major-axis lengths of highly conducting domains derived from the analysis of Figs. 2(a)–2(d) for PEDOT:PSS samples A–D. The minor- and major-axis lengths are found to have a correlation with each other.

Fig. S2. Histograms of highly conducting domains with respect to the minor-axis length derived from the analysis of Figs. 2(a)–2(d) for PEDOT:PSS samples A–D.
**Fig. S3.** Histograms of highly conducting domains with respect to the oblateness derived from the analysis of Figs. 2(a)–2(d) for PEDOT:PSS samples A–D.

**Fig. S4.** Schematic illustration for estimating the effective thickness $l_{\text{ins}}$ of insulating barriers. This depicts the most simplified situation where highly conducting domains surrounded by slightly conducting domains (squares) have a total number $n_{\text{con}}$ and are separated by insulating barriers of proportion $p_{\text{ins}}$ in a scan area of $L^2$. Because these conducting domains have the total area of $L^2(1 - p_{\text{ins}})$, the sum of barrier thicknesses with number $\sqrt{n_{\text{con}}}$ along either side of the scan area is given by $L - L\sqrt{1 - p_{\text{ins}}}$. Thus, we have $l_{\text{ins}} = L(1 - \sqrt{1 - p_{\text{ins}}})/\sqrt{n_{\text{con}}}$. This expression for $l_{\text{ins}}$ can be used to make a crude estimate of barrier thickness on average when conducting domains have elliptic shapes and are randomly distributed in an actual scan area.