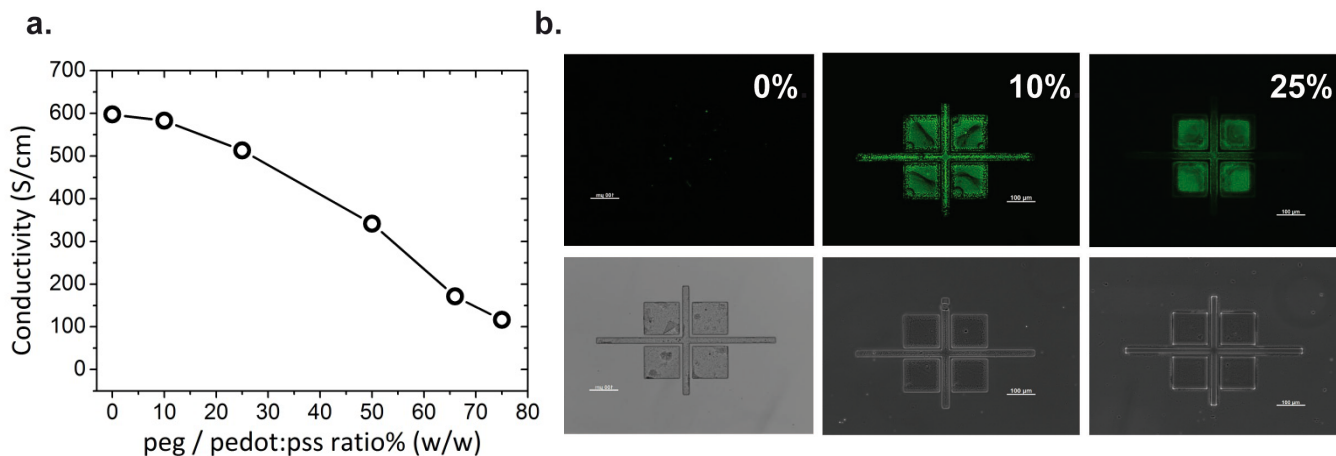
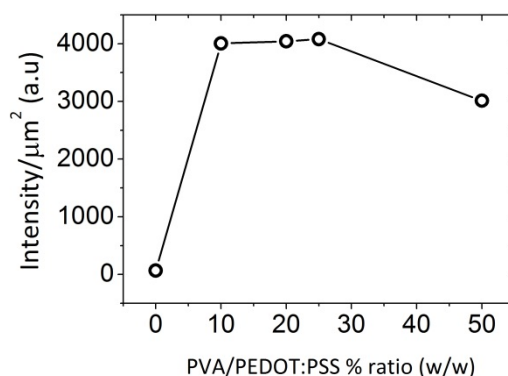


Electronic Supplementary Information



Supplementary Figure 1. Incorporation of PEG into PEDOT:PSS films. **(a)** Conductivity measurements of PEG/PEDOT:PSS films. **(b)** Biofunctionalization of PEG:PEDOT:PSS films with FITC-PLL at 0, 10 and 25%

As an alternative to PVA we decided to incorporate PEG (polyethyleneglycol) into PEDOT:PSS as a handle for subsequent silanization. However, although addition of PEG to PEDOT:PSS appeared to affect conductivity in a similar manner, with only a slight decrease seen at 10-20% PEG (SF 1a), the amount of biofunctionalisation appears to be significantly less, when observing fluorescence micrographs of FITC-PLL bound to the films (SF 1b).



Supplementary Figure 2. Quantitation of fluorescence intensity of PEDOT :PSS :PVA films.

We performed a quantitative analysis for the fluorescence intensity, using image processing software (Image J: <http://rsb.info.nih.gov/ij/>), to choose the optimal ratio of PVA for the subsequent experiments. Supplementary figure 2 shows that the PEDOT:PSS:PVA 25 wt% has the highest fluorescence intensity. For concentrations of PVA greater than 25%, the fluorescence intensity drops, in parallel with the drop of conductivity (Figure 3a). Our current hypothesis is that aggregation and phase separation of the two polymers is occurring at the higher concentrations of PVA/PEG.