Electronic Supplementary Material (ESI) for Journal of Materials Chemistry C.

Supporting information

Resistance values of printed PEDOT:PSS lines on parylene

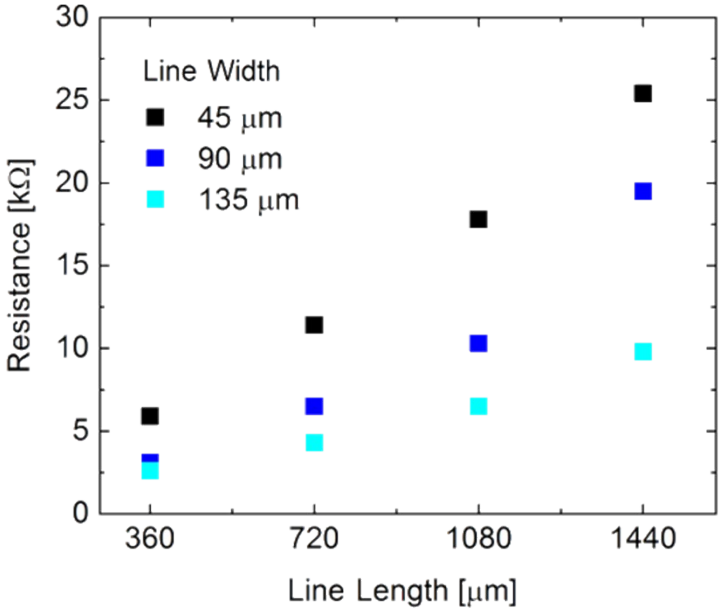

Figure S1 Resistance values of printed PEDOT:PSS lines for different line lengths and widths.

Role of the PMMA interlayer

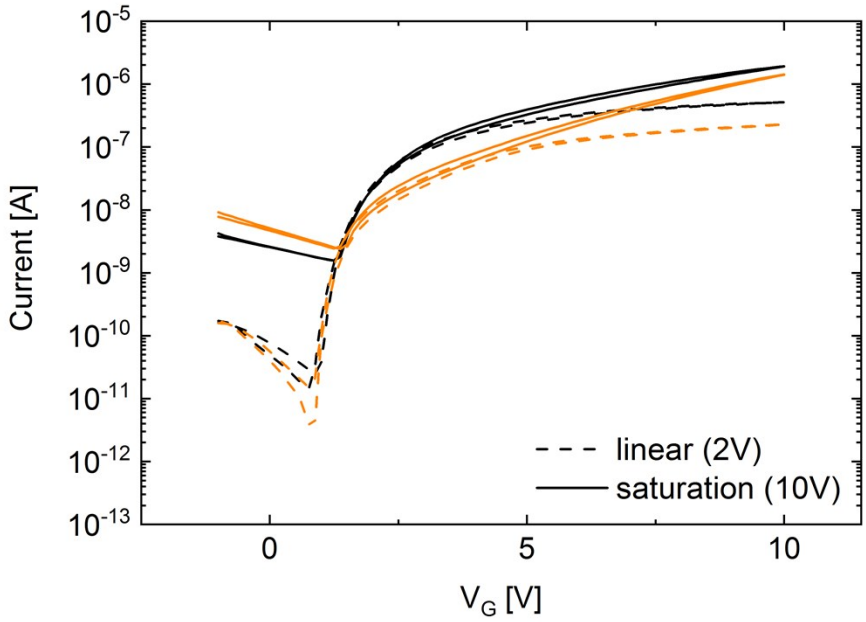

Figure S2 Transfer curves of two transistors employing identical structures except for the dielectric layers, which is parylene only (orange curve) or a bilayer composed of PMMA and parylene (black curve).

Mobility curves

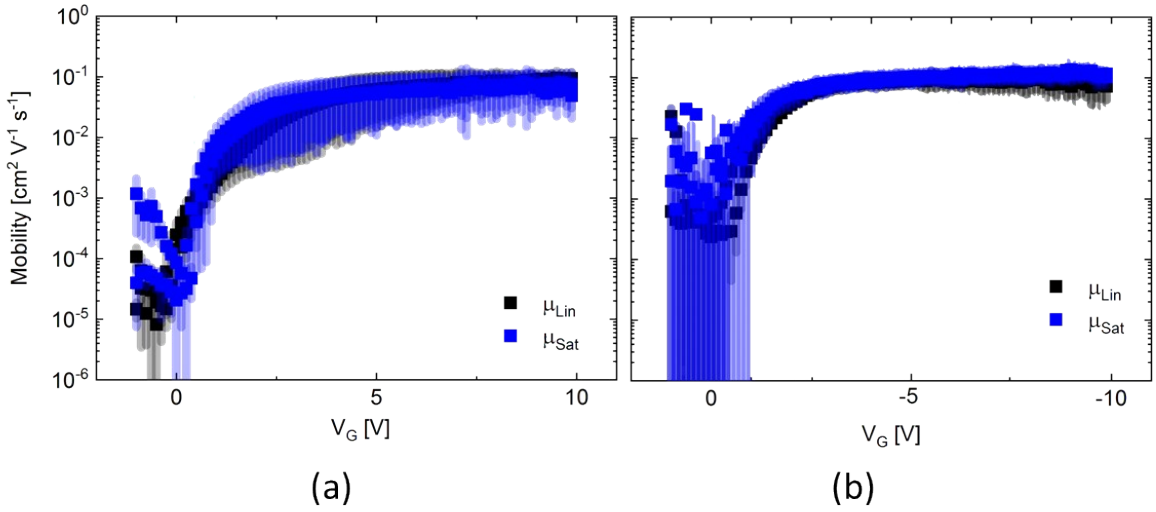

Figure S3 Average mobility curves as a function of the gate voltage, together with their standard deviation, for *n*-type (a) and *p*-type (b) devices, in linear (±2 V, black curve) and saturation (±10 V, blue curve) regime.

Average transfer curves with their standard deviation after mechanical tests

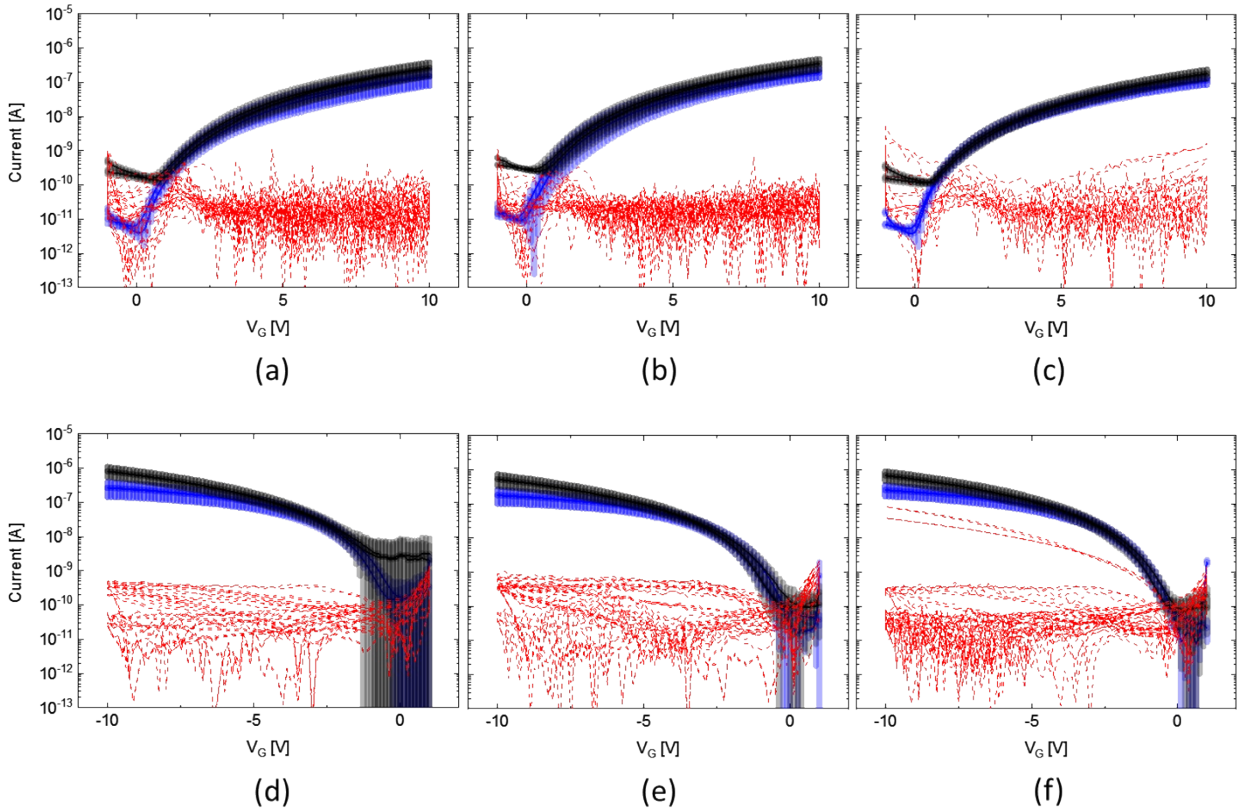

Figure S4 Average transfer curves for n-type (top) and p-type (bottom) OFETs after detachment from the glass slide carrier (a, d), after rolling (b, e) and after crumpling (c, f). The blue curve is for the linear regime (±2V), the black curve is for the saturation regime (±10V) and the dotted red curves are the leakage characteristics.

Average transfer characteristics in saturation regimes

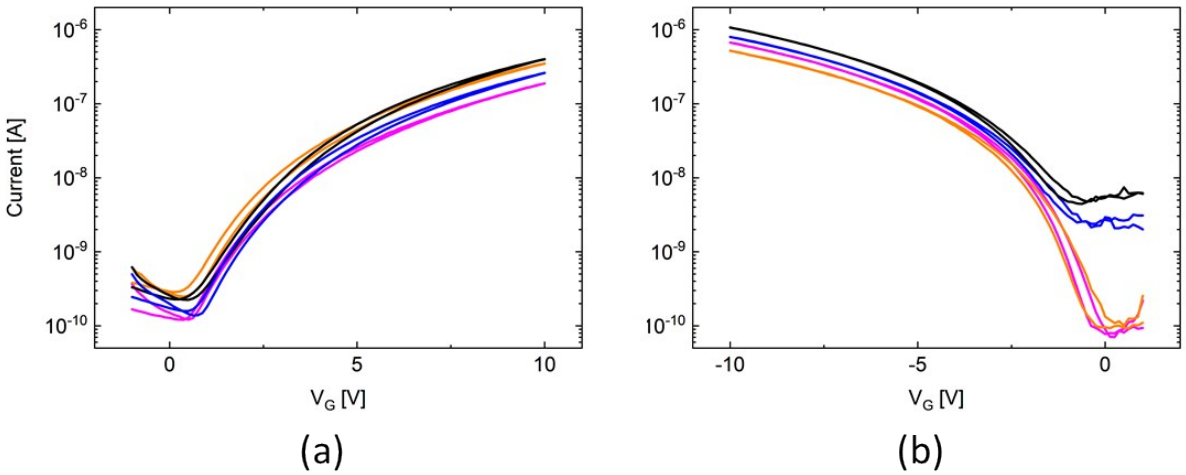

Figure S5 Average transfer characteristics after each mechanical test, in saturation (±10V) regime for (a) n-type and (b) p-type OFETs. The black curve refers to the as-fabricated devices, the blue curve for the detachment case, orange curve for rolling and pink for crumpling.

Graphical comparison of mobilities after mechanical tests

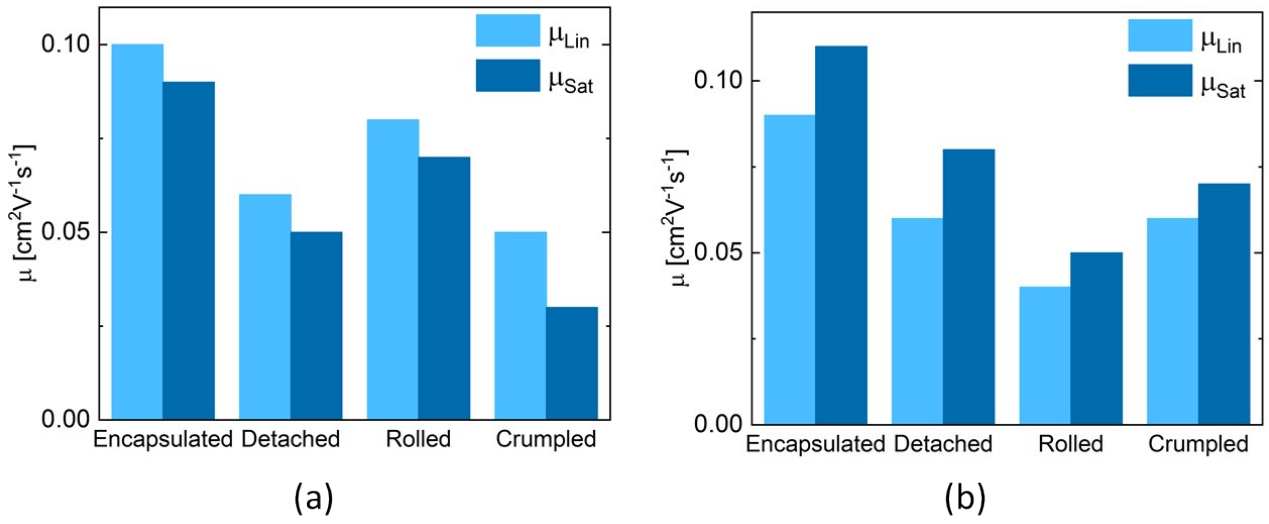

Figure S6 Graphical comparison of mobility values for the devices as-fabricated, and after detachment from the glass slide, after rolling and crumpling, for (a) n-type and (b) p-type organic printed transistors, in linear (light blue) and saturation (blue) regimes.

UV-vis spectrum

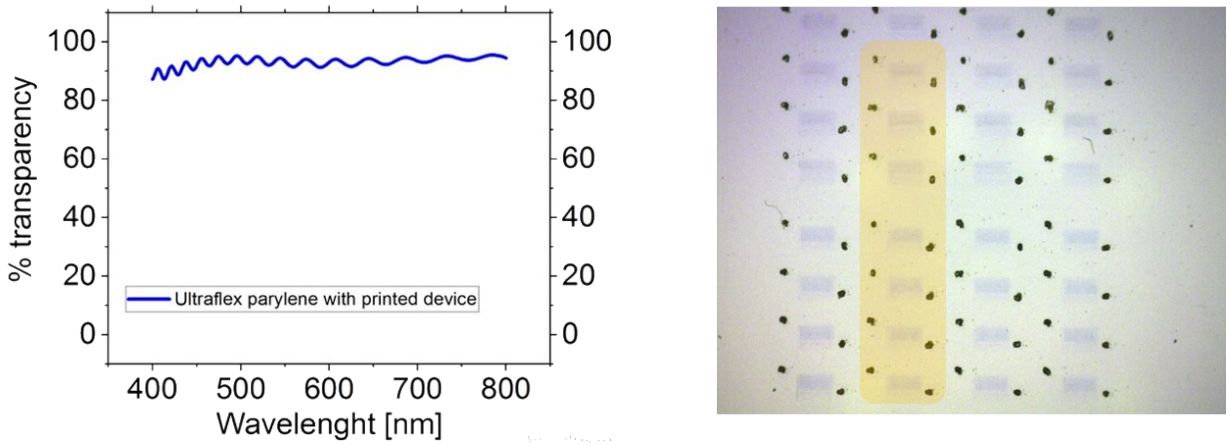

Figure S7 UV-vis spectra for the encapsulated devices after detachment (left) and graphical representation of the spot where the measurement has been performed, highlighted in yellow (right).

The wavy shape of the transparency data is given by the reduced overall thickness of the devices, which causes interference. [1]

The beam spot is 2x10 mm^2, while the area occupied by one OFET is equal to 1.4 mm^2. In the employed configuration, 7 devices are hit during the measurement, so that about 50% of the measured spot is covered by devices, giving a realistic approximation of the surface occupation of more complex electronic circuits. The average transmittance is higher than 90%, showing that the proposed devices are semi-transparent.

[1] Frank Padera, UV-vis spectroscopy, https://www.perkinelmer.com/lab-solutions/resources/docs/APP_Thin-films.pdf