

Electronic Supporting Information (ESI)

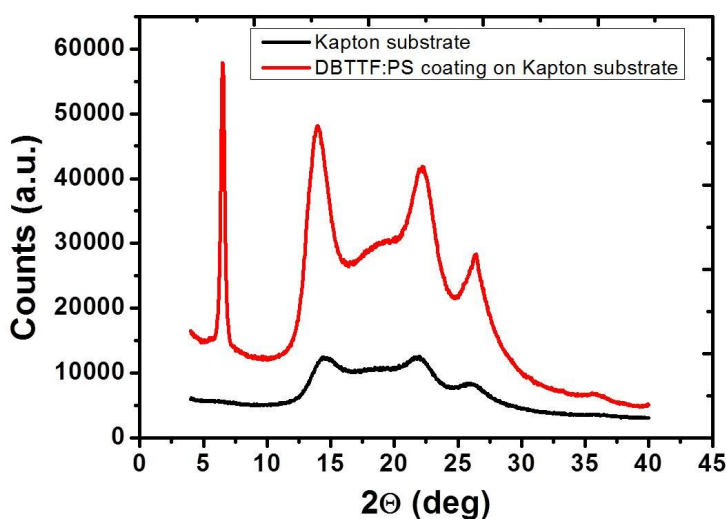


Figure S1 X-ray diffractogram of bare Kapton substrate and DBTTF:PS coated substrate. The peak at 6.55° is characteristic of the γ -phase of DBTTF.

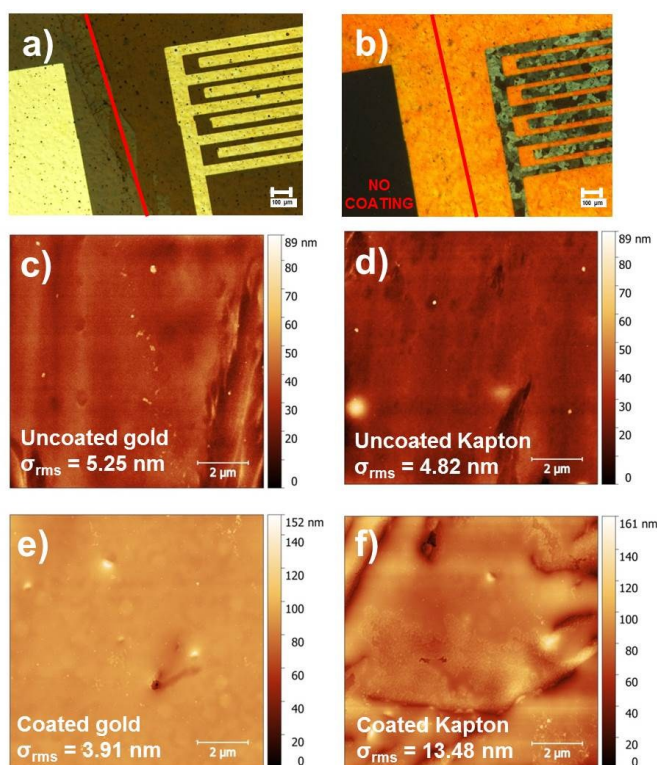


Figure S2 a) Optical microscopy image of S/D electrodes near the gate electrode region showing the patterned area of the semiconductor and b) its corresponding optical polarized image. c) and d) show the gold and Kapton® region of the devices and e) and f) the OSC blend-coated regions. It is worth mentioning that the scratch features are peculiar of Kapton® itself and they are not related to our process.

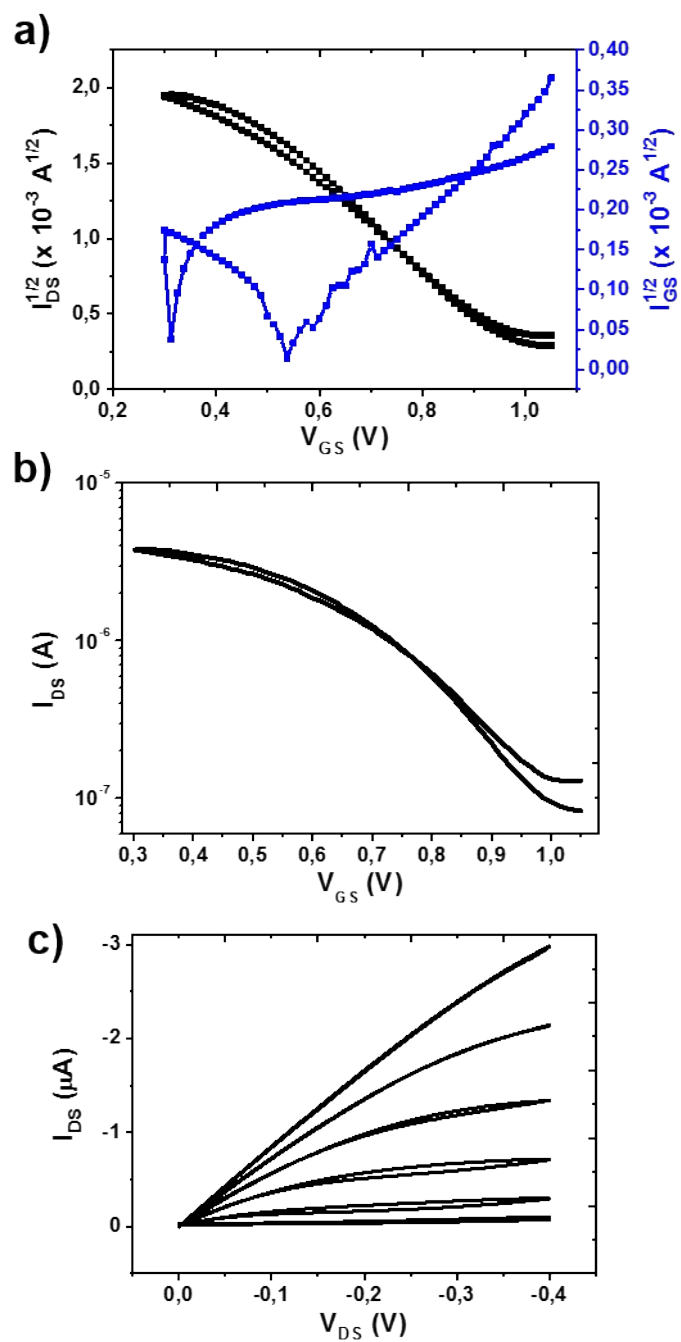


Figure S3 Lin-lin transfer characteristic and b) Log-lin transfer characteristic of EGOFET device recorded in saturation regime ($V_{DS} = -0.4$ V). c) Output characteristic of EGOFET device obtained by sweeping the gate voltage from 1 V to 0.5 V. All the measurements are performed in MilliQ water.

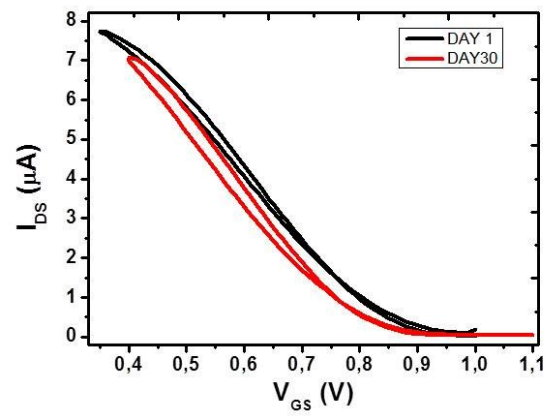


Figure S4 Transfer characteristics of DBTTF:PS flexible device measured with coplanar gate architecture at day 1 and after one month ($V_{DS} = -0.1V$).

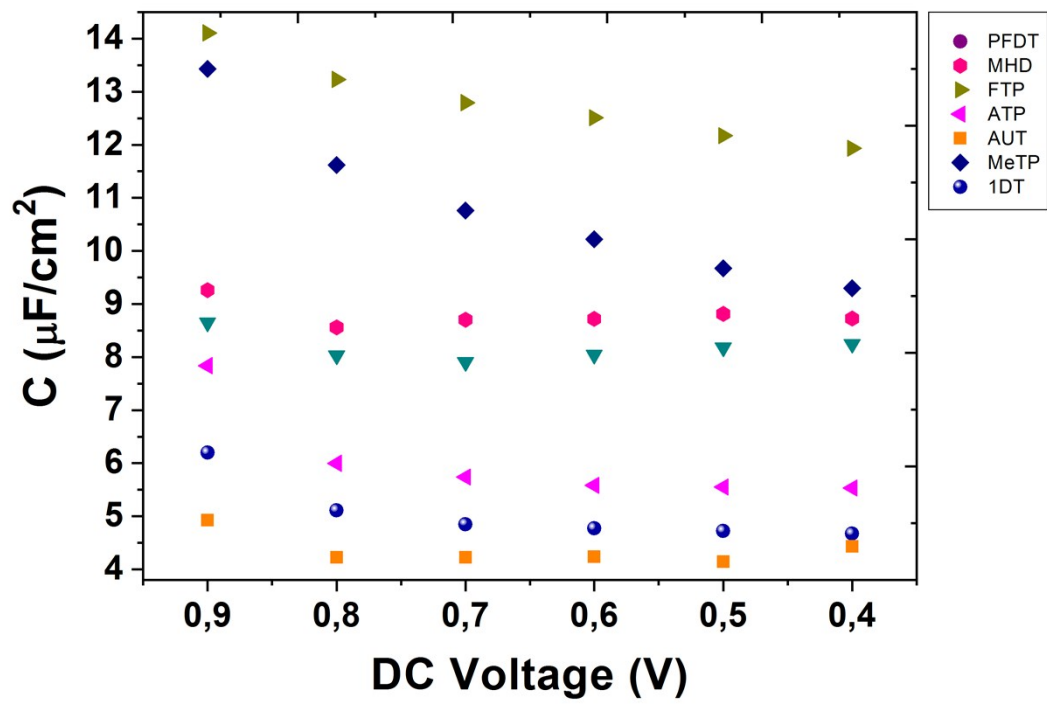


Figure S5 Capacitance behavior of each SAM recorded at different DC bias. The DC voltage range has been selected according to the operational gate voltage (V_{GS}) of the EGOFET device.

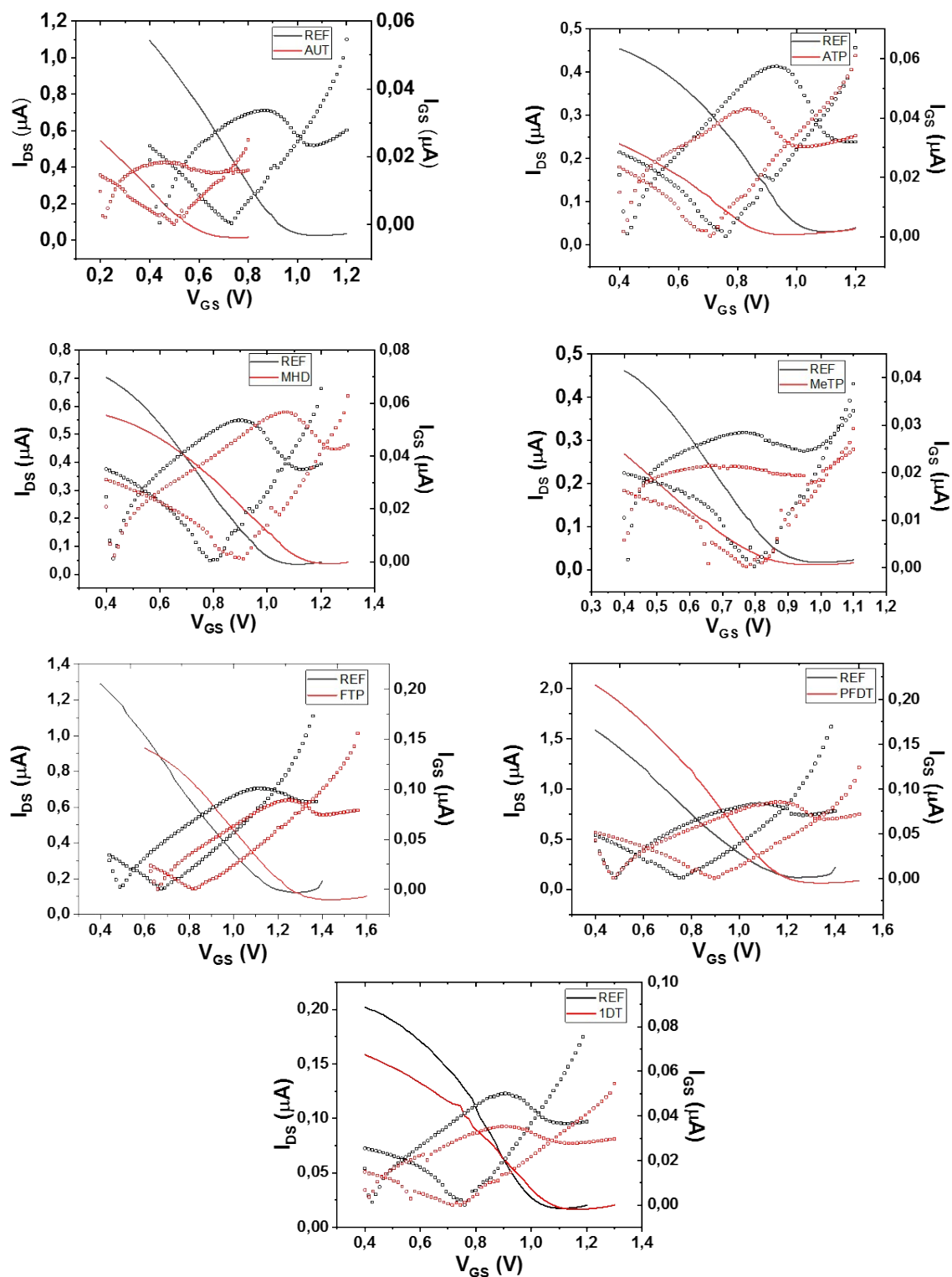


Figure S6 Transfer characteristic (linear regime $V_{DS} = -0.1$ V) measured for all devices with different SAM. Black curve refers to the reference measurement with a bare gate electrode while the red one has been recorded after the functionalization of the gate terminal with a SAM.