

Supporting Information

Influence of mechanical stress on flexible electrolyte-gated organic field-effect transistors

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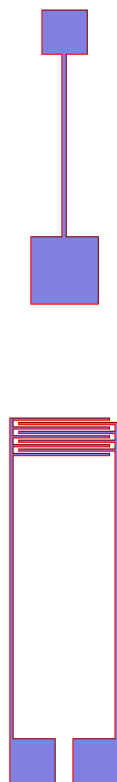


Figure S1. Device layout. $W=18000\ \mu\text{m}$, $L=50\ \mu\text{m}$, $W/L=360$. The coplanar gate electrode's area is equal to $2.25\ \text{mm}^2$.

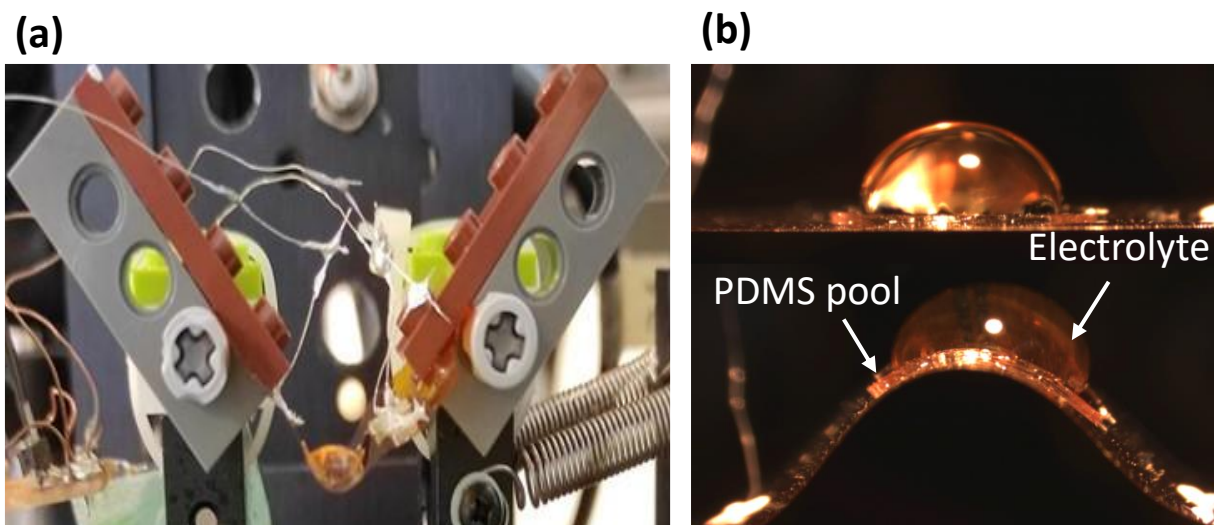


Figure S2. (a) Setup for mechanical stress and (b) photography of devices with Milli-Q water in flat configuration and during the application of stress.

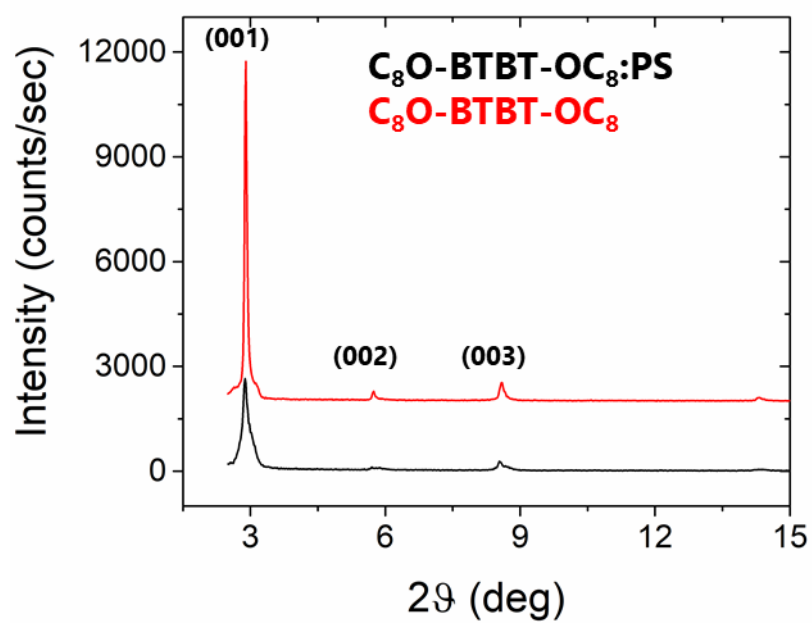


Figure S3. X-ray diffractograms of films based on C₈O-BTBT-OC₈ and C₈O-BTBT-OC₈:PS prepared by BAMS.

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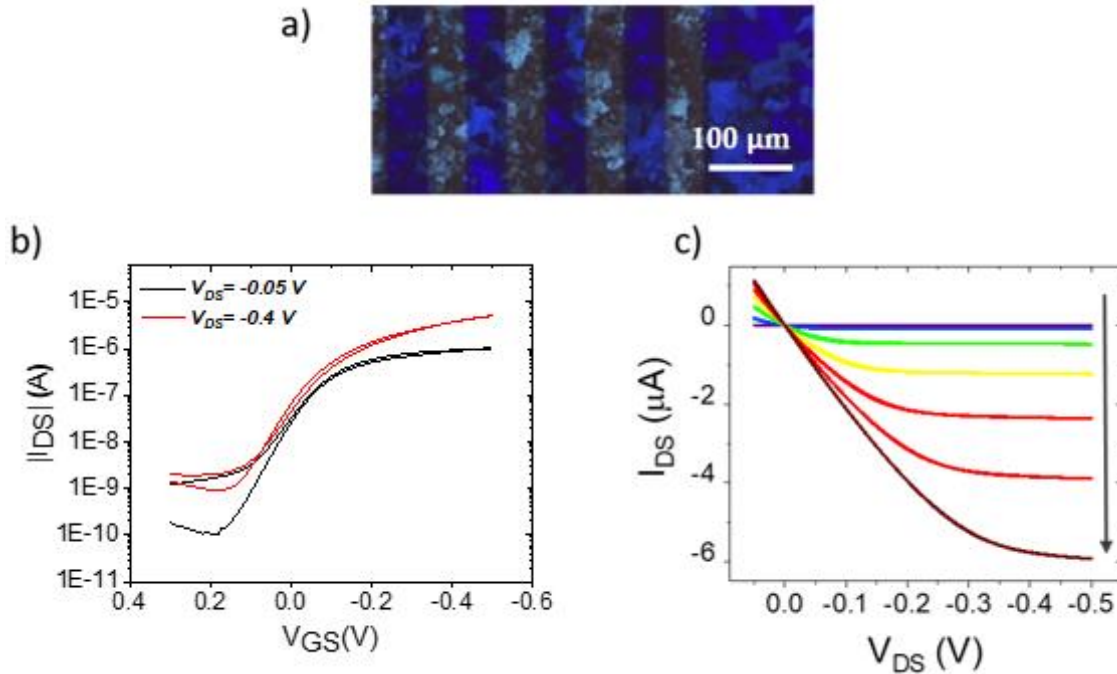


Figure S4. Electrical characterization of EGOFETs based on $C_{8}O$ -BTBT- OC_{8} :PS films fabricated on Si/SiO₂ substrates and using Milli-Q water as electrolyte. (a) POM image of the film. (b) Transfer characteristics ($V_{DS} = -0.05$ V (black line) and $V_{DS} = -0.4$ V (red line)). (c) output characteristics recorded at $V_{GS} = 0.35$ V, 0.20 V, 0.05 V, -0.1 V, -0.25 V, 0.40 V and -0.55 V (in the direction of the arrow).

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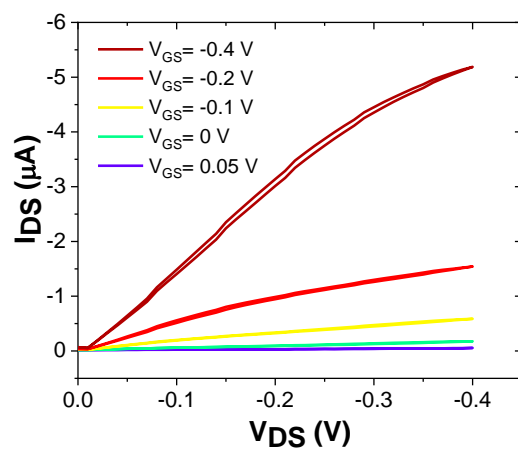


Figure S5. Output characteristics ($V_{GS} = 0.05, 0, -0.1, -0.2,$ and -0.4 V) of C₈O-BTBT-OC₈:PS-based thin film on Kapton using Milli-Q water as electrolyte.

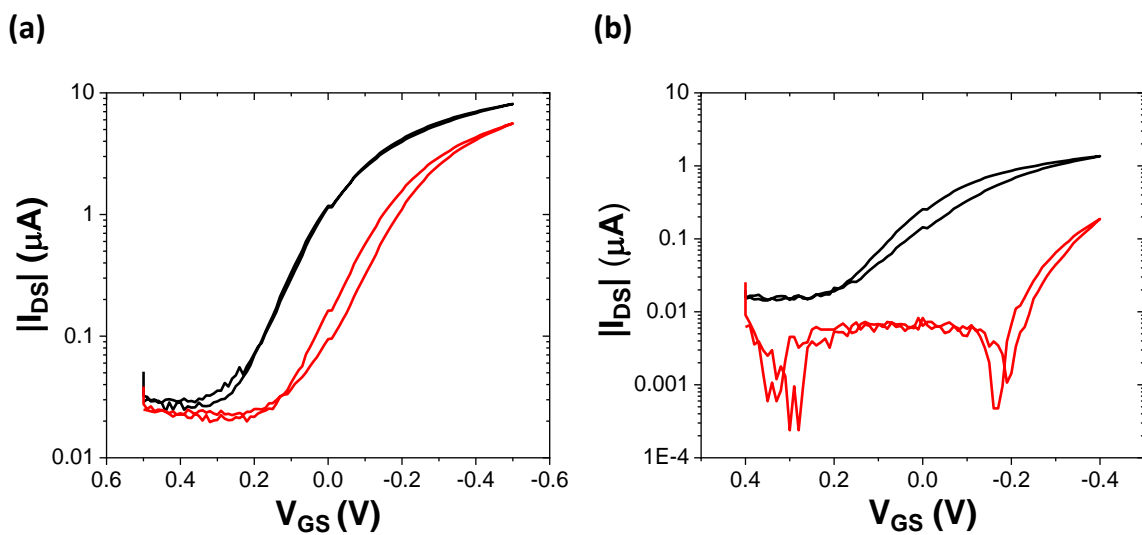


Figure S6. Transfers characteristics ($V_{DS} = -0.1$ V) of (a) diF-TES-ADT:PS and (b) C₈O-BTBT-OC₈:PS EGOFETs before (black curves) and after (red curves) performing a bias stress test that consisted of applying a source-drain voltage (V_{DS}) and source-gate voltage (V_{GS}) of -0.2 V for 9 minutes.

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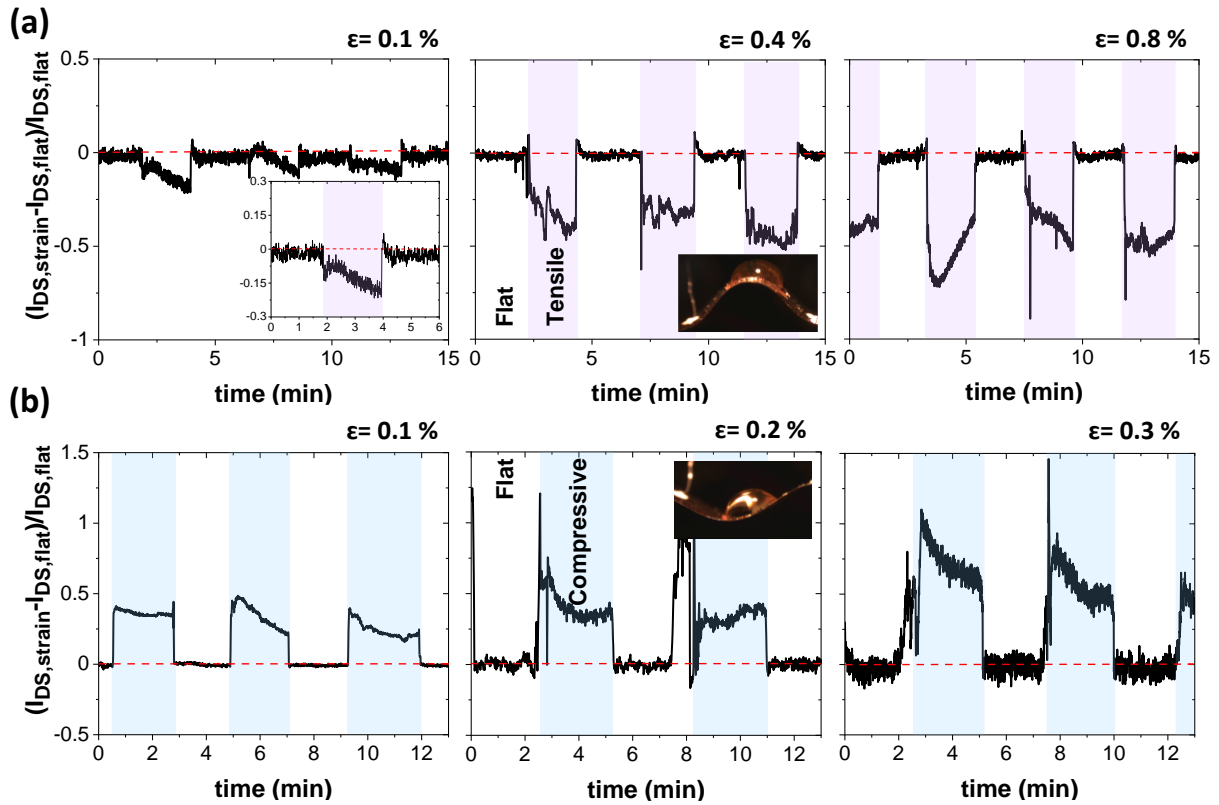


Figure S7. Real-time I_{DS} current monitoring of C_8O -BTBT- OC_8 : PS_{100k} employing Milli-Q water fixing $V_{DS} = -0.2$ V and $V_{GS} = -0.2$ V, applying (a) cyclic tensile strain (purple regions) equal to 0.1, 0.4 and 0.8 %, respectively; and (b) cyclic compressive strain (blue regions) equal to 0.1, 0.2 and 0.3 %, respectively.