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Supporting Information

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

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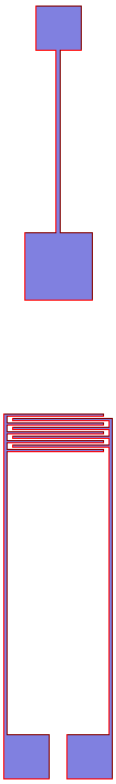

Figure S1. Device layout. W=18000 µm, L= 50 µm, W/L=360. The coplanar gate electrode's area is equal to 2.25 mm^2.

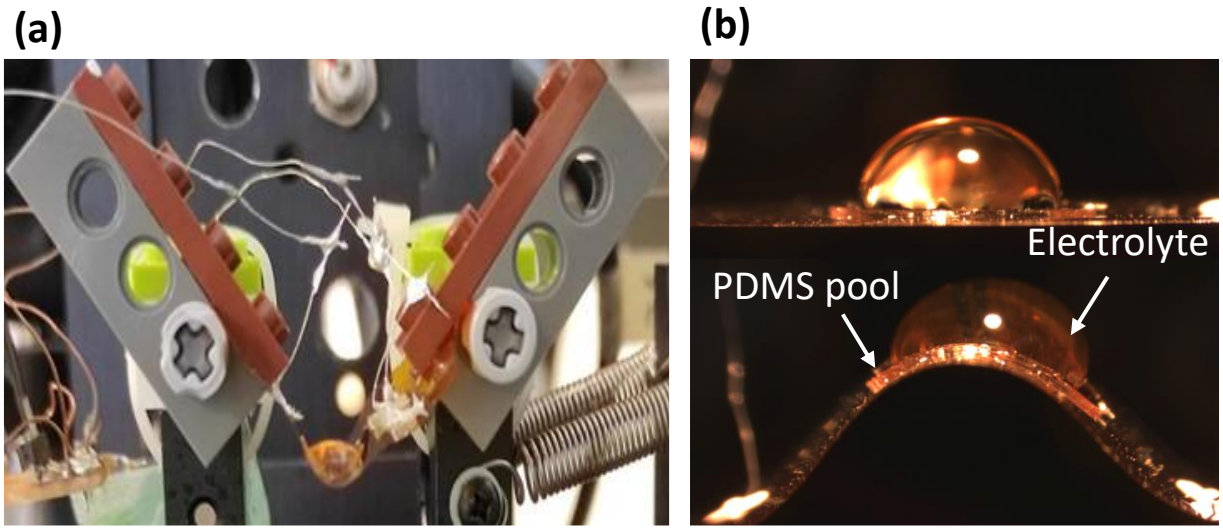

Figure S2. (a) Setup for mechanical stress and (b) photography of devices with Milli-Q water in flat configuration and during the application of stress.

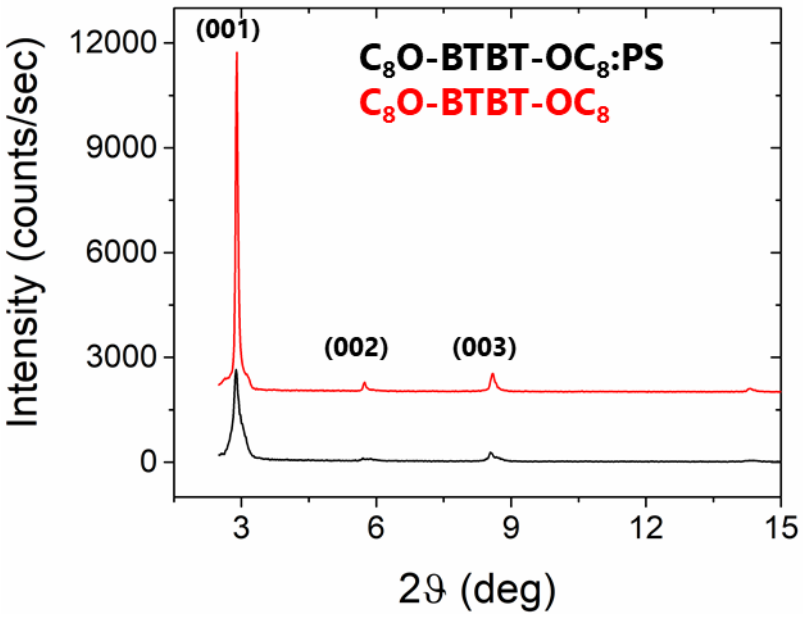

Figure S3. X-ray diffractograms of films based on C_8O-BTBT-OC_8 and C_8O-BTBT-OC_8:PS prepared by BAMS.

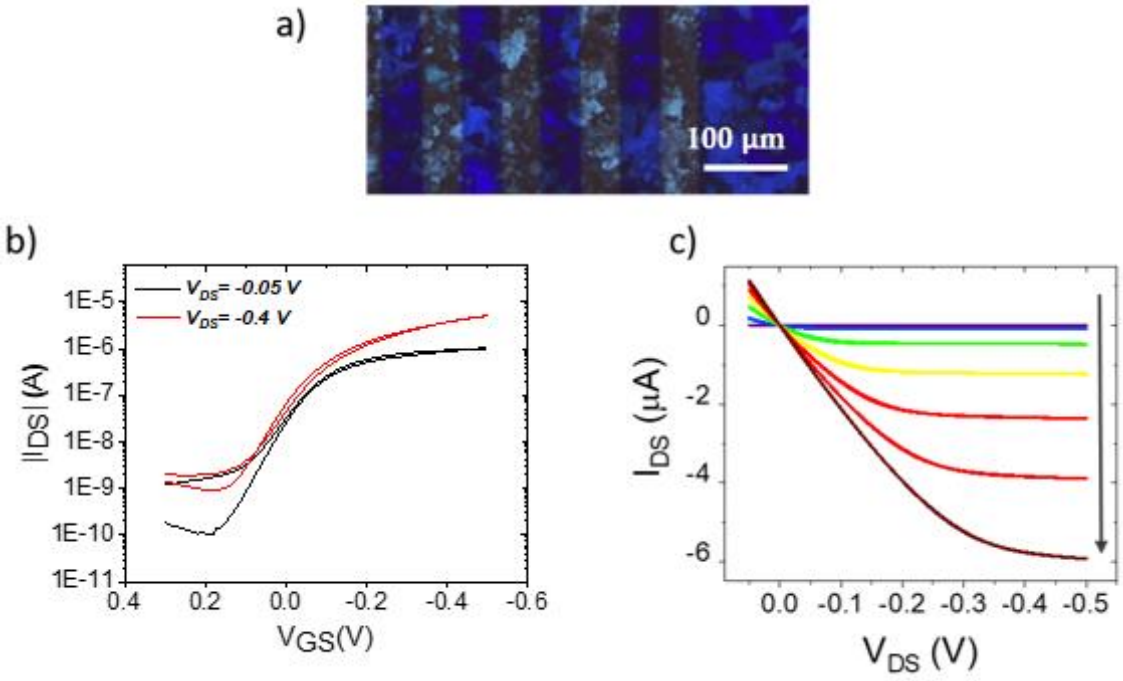

Figure S4. Electrical characterization of EGOFETs based on C_8O-BTBT-OC_8:PS films fabricated on Si/SiO_2 substrates and using Milli-Q water as electrolyte. (a) POM image of the film. (b) Transfer characteristics (V_{DS}= -0.05 V (black line) and V_{DS}= -0.4 V (red line)). (c) output characteristics 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).

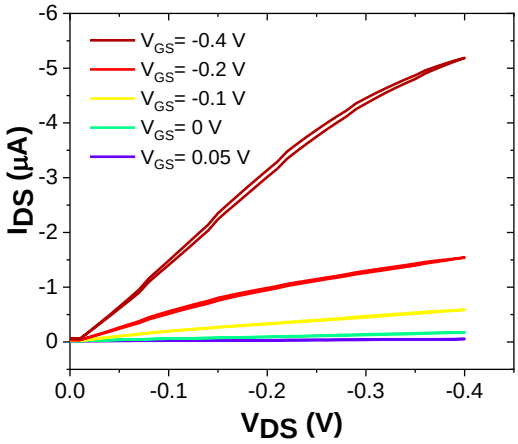

Figure S5. Output characteristics (V_{GS}= 0.05, 0, -0.1, -0.2, and -0.4 V) of C_8O-BTBT-OC_8:PS-based thin film on Kapton using Milli-Q water as electrolyte.

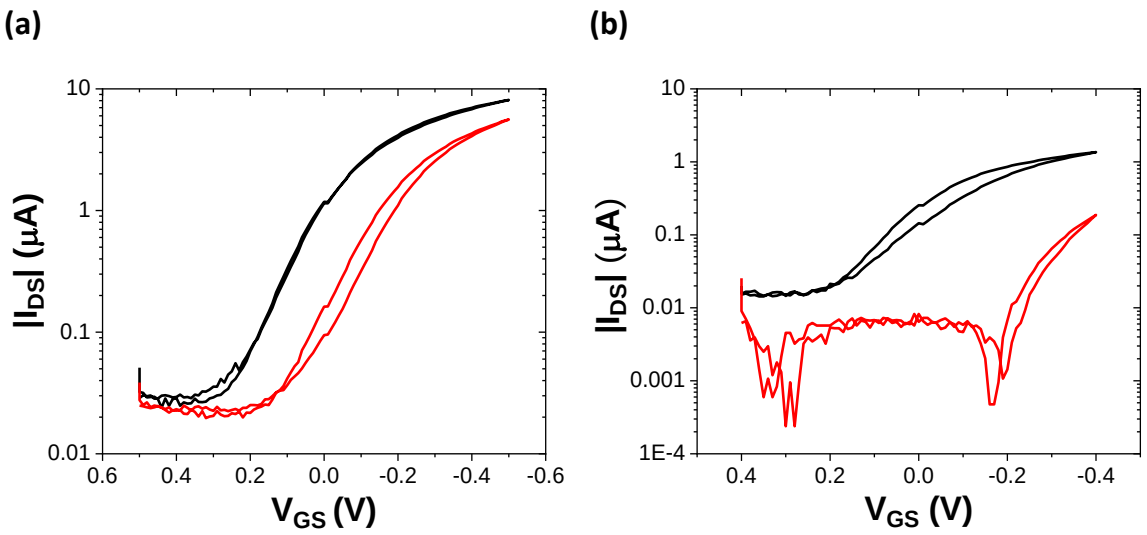

Figure S6. Transfers characteristics (V_{DS}= -0.1 V) of (a) diF-TES-ADT:PS and (b) C_8O-BTBT-OC_8:PS EGOFETs before (black curves) and after (red curves) performing a bias stress test that consisted of applying a source-drain voltage (V_{DS}) and source-gate voltage (V_{GS}) of -0.2 V for 9 minutes.

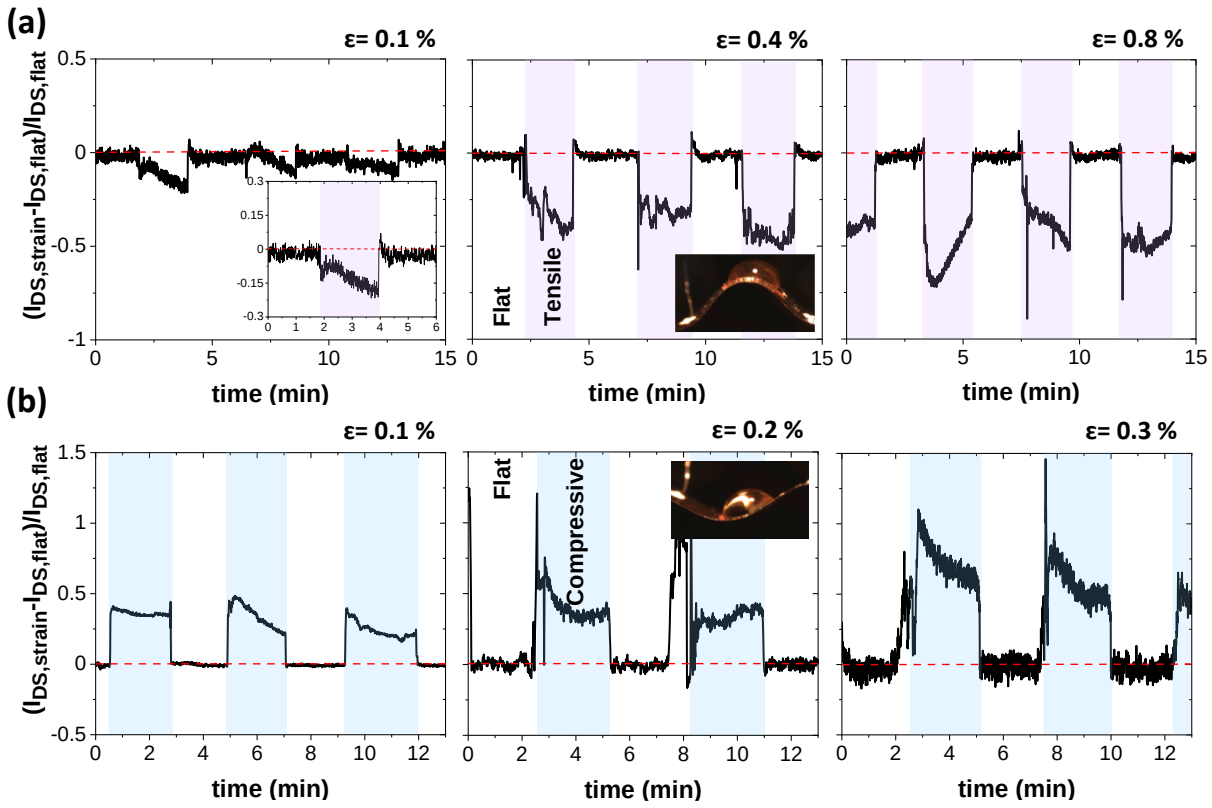

Figure S7. Real-time I_{DS} current monitoring of C_8O-BTBT-OC_8:PS_{100k} employing Milli-Q water fixing V_{DS}= -0.2 V and V_{GS}= -0.2 V, applying (a) cyclic tensile strain (purple regions) equal to 0.1, 0.4 and 0.8 %, respectively; and (b) cyclic compressive strain (blue regions) equal to 0.1, 0.2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