Supporting Materials

Experimental conditions

Stamp preparation. The polydimethylsiloxane stamps were fabricated with Sylgard 184 Dow Corning by replica molding of an aluminium master. The curing conditions were; temperature 50 °C curing time 12 hours. After curing the stamps were washed by pure dimethylformamide Aldrich (99.8%) (DMF), in order to remove the un-cured material.

We used two types of stamps with parallel lines. The first one had lines 400 nm wide, 230±15 nm deep and 1.5 μm periodicity. The second type of stamp had lines 300 nm wide, 120±5 nm deep and 740 nm periodicity.

In the experiments where we used tetrahydrofuran (THF) as solvent the stamp was previously coated by 20 nm of aluminum.

Chemicals. The solutions concentrations were: 20 μg/ml or 60 μg/ml in THF (Aldrich, Spectroscopic grade quality) and 20 μg/ml in DMF.

Substrates. The FET interdigitated electrodes 150 nm thick were prepared on thermal silicon oxides, by photolithography. The geometrical channel width 1 mm and channel length 10 μm.

Substrates were Si/SiOx wafers with thermal oxide were cleaned by a standard protocol: sonication for two minutes in electronic-grade water (milli-pure quality), two minutes in acetone (chromatography quality) then two minutes in 2-propanol (spectroscopic grade quality).

Grazing incidence X-Ray diffraction using synchrotron radiation was performed at the wiggler beam line BW2 at HASYLAB. The wavelength used was 1.2398Å, and the grazing incidence angle 0.16°. Being just below the critical angle of reflection, this choice of incidence angle gives total reflection from the substrate, thus effectively enhancing the signal from the thin organic film. The scattered intensity was collected by a Cyberstar point detector.

Atomic Force Microscopy. All the AFM images were recorded with a standalone AFM (SMENA NT-MDT Moscow) operating in air, in intermittent contact mode at room temperature with relative humidity 55%. Si cantilever (NT-MDT NSG10, with typical curvature radius of a tip 10 nm and typical
resonant frequency 255 KHz) were used. The topographic images were corrected line-by-line for background trend effects by removal of the second-order polynomial fitting.

**Electrical characterization.** We estimate the charge mobility in the saturation regime ($\mu_{\text{sat}}$) of the transistor ($|V_G-V_P|<V_P$) from the second derivative of the drain current $I_D$ with respect to the gate voltage ($V_G$) in the transfer characteristics.

The standard formula \[ \mu_{\text{sat}} = \frac{2L}{W} \frac{1}{C_i} \left| \frac{d^2I_D}{dV_G^2} \right| \]
where $L$ and $W$ are the effective channel length and width, and $C_i$ is the capacitance per unit area of the dielectric layer (18 nF/cm$^2$). In the nanostructured transistor the width is $W = W_{\text{g}} \cdot k \cdot d / p$, where $W_{\text{g}}$ is the geometrical channel width, $d$ is the width of each stripe, $p$ is the pitch of the array of stripes, and $k$ ($0<k<1$) is the fraction of stripes connected between source and drain. We assumed 10% of the stripes connect source and drain electrodes (i.e., $k=0.1$). The percentage of effectively connect stripes was estimated from statistical analysis of large area printed nanostripes.

The transfer characteristics of the F-T3-F FETs were measured in a nitrogen atmosphere at room temperature. We used Keithley 6430 Sub-FemtoAmp Remote SourceMeter for $I_{SD}$ measure and to bias the channel and Keithley 486 to supply the gate voltage. These instruments were controlled by specific home-made acquisition software.