

## Supplementary information

### **Study on correlation between structural and electronic properties of fluorinated oligothiophenes transistors by controlling film thickness**

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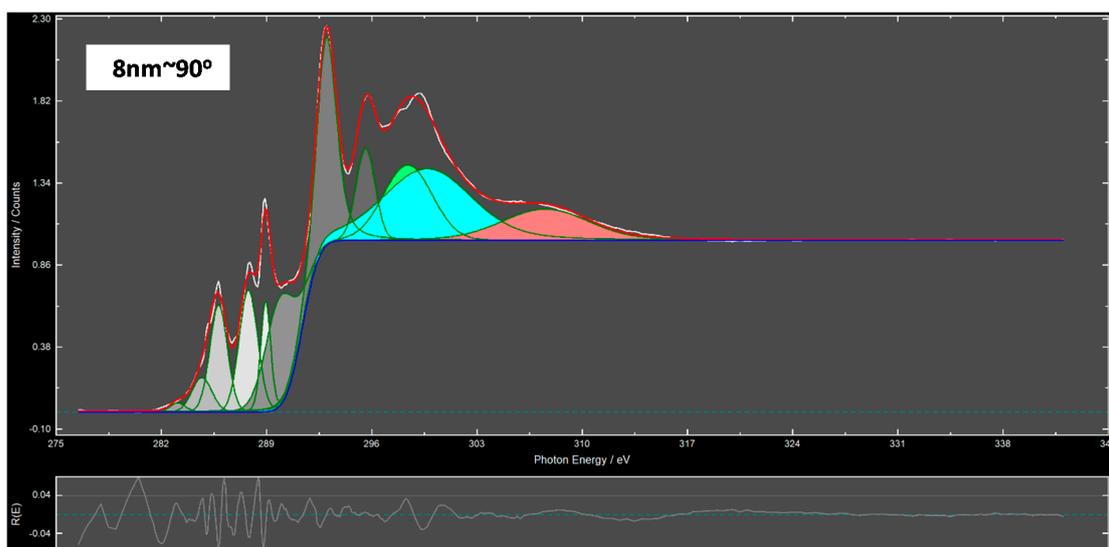


Fig. S1

**Figure S1.** The fitting of NEXAFS spectrum at  $90^\circ$  incidence angle for the 8 nm thick DFH-4T film grown on PMMA/SiO<sub>2</sub> substrate. Experimental and fitted spectra are shown in white and red lines, respectively. Eleven peaks of Voigt function in combination with a single step edge located at 291.4 eV are used.

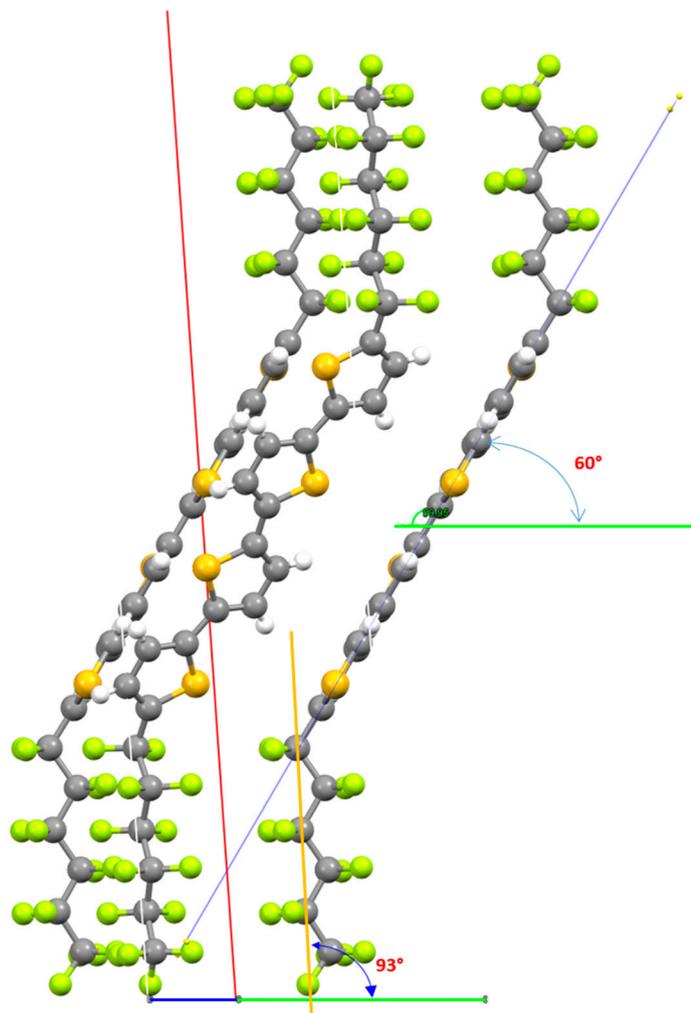


Fig. S2

**Figure S2.** A cross section view of the molecular constituents of (*h*00)-aligned DFH-4T crystallites whose presence on the surface is evident from XRD data. The **b**, **c** plane of the crystallite needs to be in parallel with the substrate surface. Consequently, the aromatic plane of quarterthiophene will be tilted away from the surface plane by 60°, and the carbon side chains will be stretched along the near-surface normal direction as shown in yellow line, assuming a full extended trans-configuration, with C-F bonds at 3° from the surface plane.