Supporting Information

Fig. S1 shows the fluorescence of PFO-SWCNTs dispersion. The fluorescence spectra of PFO-SWCNTs also exhibited a less chiralities distributions in cyclohexane, which also corresponded to the absorption and Raman spectra in the fig. 1.

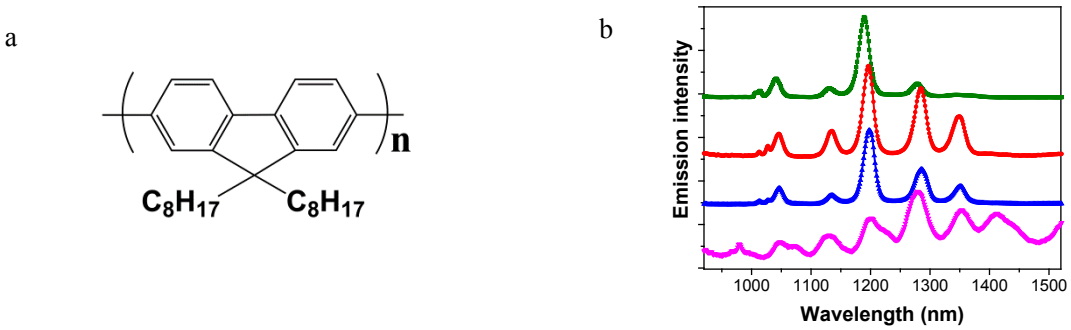

Figure S1. (a) Chemical structure of PFO; (b) Fluorescence spectra of PFO-SWCNTs dispersion in cyclohexane (green line), toluene (red line), o-xylene (blue line) and THF (pink line) at 785 nm excitation.

As is shown in the fig. S2 (a), the SWCNTs dispersed by F8T2 in cyclohexane, toluene and o-xylene showed no peaks of m-SWCNTs and the main peak of s-SWCNTs is at 302 cm^{-1}. However, the high polar solvent THF showed no selectivity, which some obvious peaks appeared between 180-220 cm^{-1} corresponding to the m-SWCNTs. The mixed solvents experiments were also conducted. When the ratios of cyclohexane: THF were less than 1:1, the selectivity for s-SWCNTs was disturbed, which maybe caused by the strong interaction between solvents and SWCNTs.

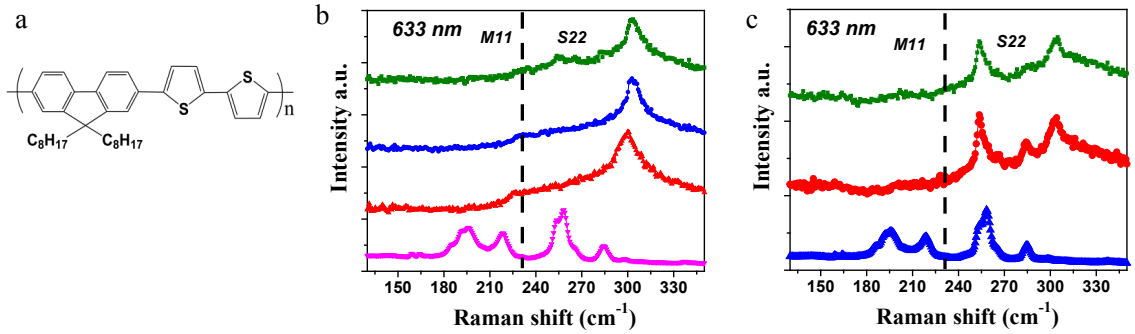

Figure S2. (a) Chemical structure of F8T2; (b) Raman spectra of F8T2-SWCNTs dispersed in cyclohexane (green line), toluene (red line), o-xylene (blue line) and THF (pink line). (c) Raman spectra of F8T2-SWCNTs, which the green line, red line and blue line represent the mixed solvents of cyclohexane: THF with ratios of 9: 1, 3: 1 and 1: 1, respectively.

Fig. S3 Shows the transfer curve of the fabricated TFTs by PFO-dispersed SWCNTs in toluene. The low on-off ratio also corresponded the Raman spectra in fig. 1b.

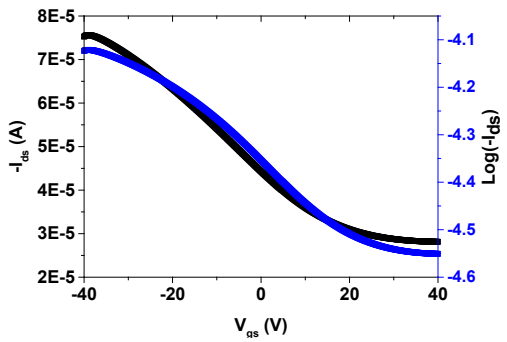

Fig. S3 The transfer curve of the fabricated TFTs by PFO-dispersed SWCNTs in toluene.