Electronic Supplementary Information (ESI)

Tuning the electrode work function via a vapor-phase deposited ultrathin polymer film

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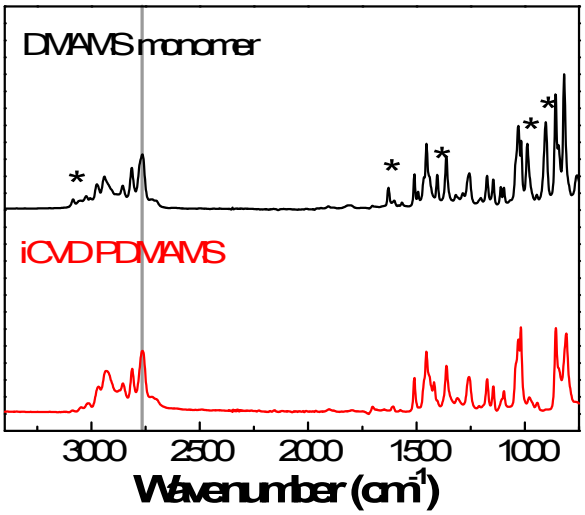

Fig. S1 The FTIR spectra of DMAMS monomer (top, black) and PDMAMS (bottom, red).

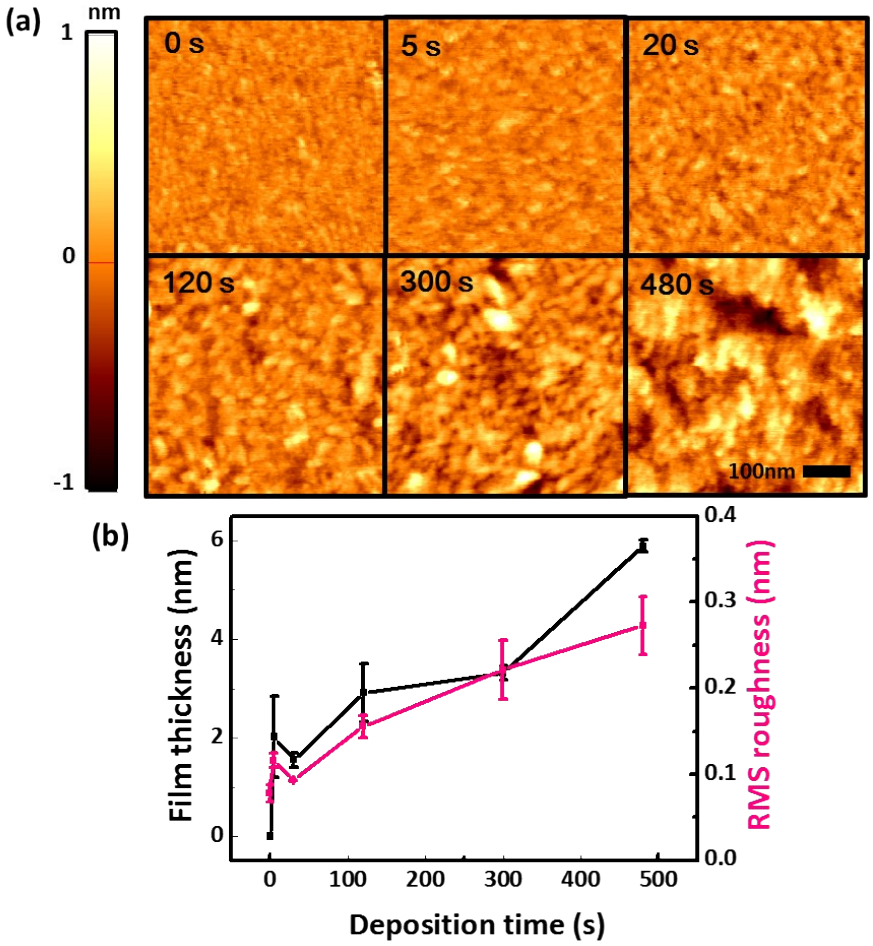

Fig. S2 (a) The AFM images of PDMAMS on Si wafer with the various deposition time in iCVD chamber. (b) Changes of film thickness and RMS roughness of the polymer film on Si wafer with increasing deposition time.

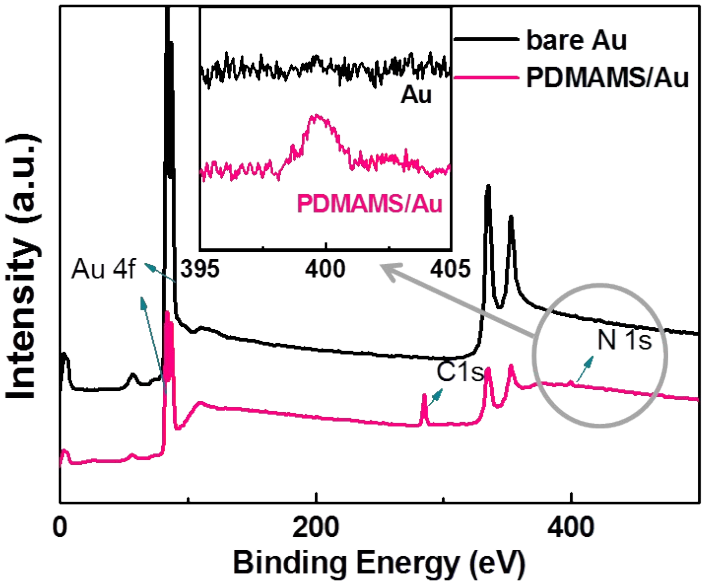

Fig. S3 The survey scan of XPS spectra of bare Au (black) and PDMAMS (120 s)-modified Au surfaces (red), respectively. Inset shows the enlarged images of XPS scan near the N1s peak of bare Au and PDMAMS-modified Au surface.

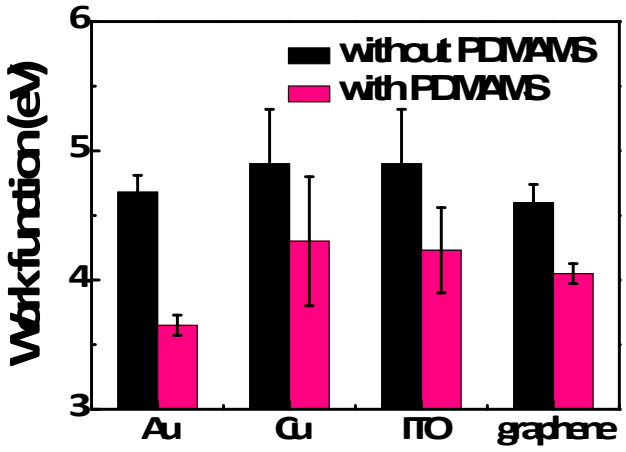

Fig. S4 WF of the conducting materials with and without PDMAMS (30 s)-modification, calculated from UPS data.

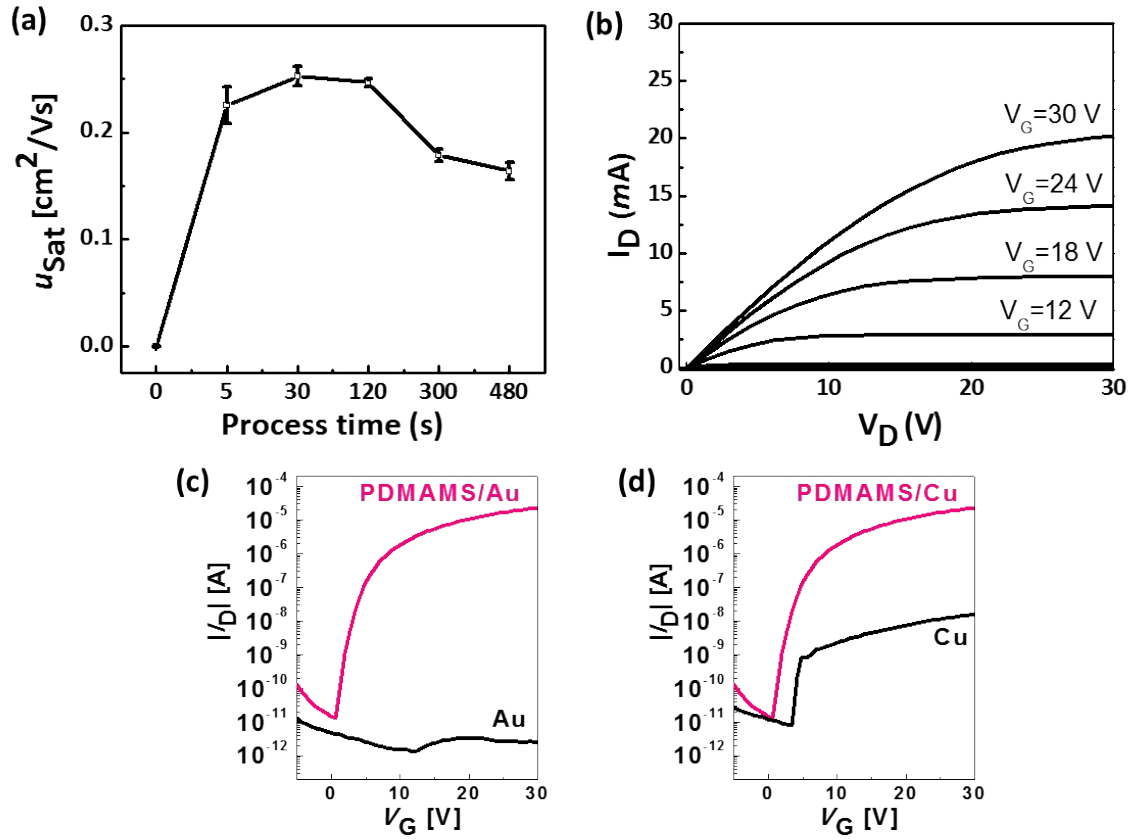

Fig. S5 (a) The saturation mobility of bottom-contact C_{60} OTFTs with Au S/D electrode and bare SiO_2 (100 nm) dielectric layer. The S/D electrode surfaces for each devices were PDMAMS-modified with five different deposition time intervals. (b) Output characteristic of the C_{60} TFT with Au S/D electrodes modified with ultrathin PDMAMS (30 s). (c) Transfer characteristics of OTFTs with (c) Au and (d) Cu S/D electrodes with and without PDMAMS interlayer.

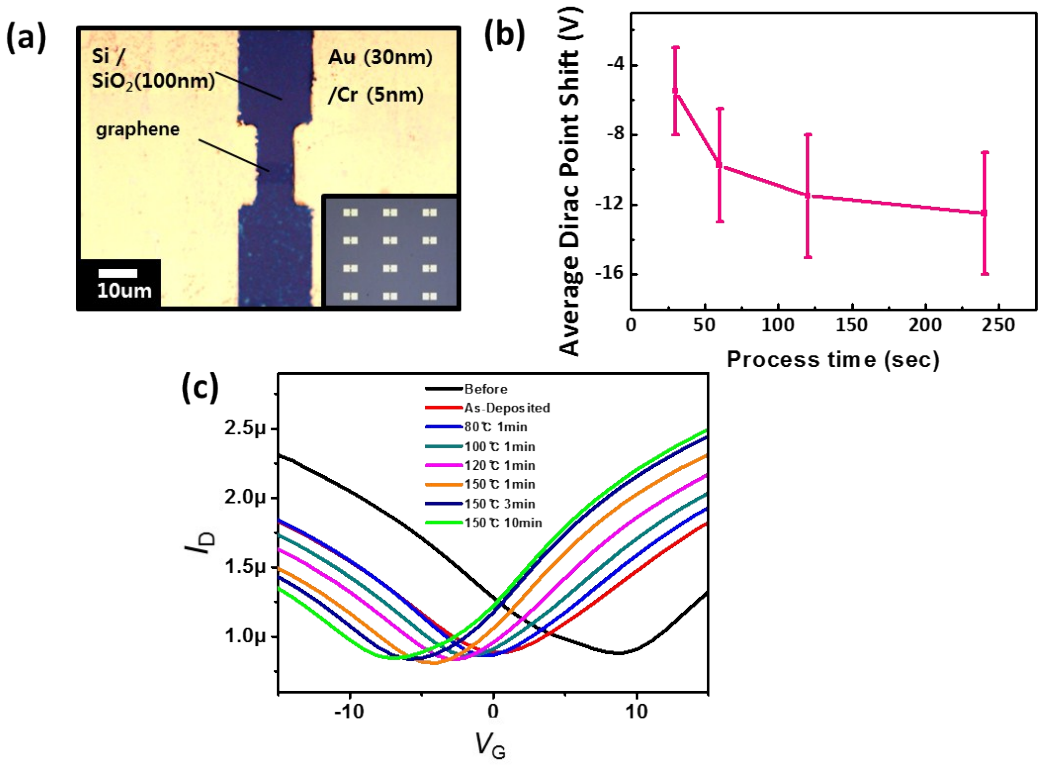

Fig. S6 (a) An OM image of bottom-gate GTFT. Each channel length and width is differentiated from 2 μm to 10 μm (b) Average Dirac point shift with respect to the deposition time. (c) Transfer characteristics of PDMAMS (240 s)-modified GTFT with additional thermal annealing.