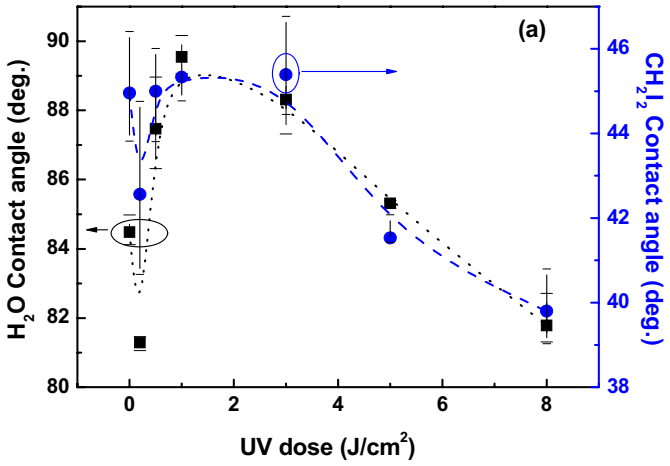
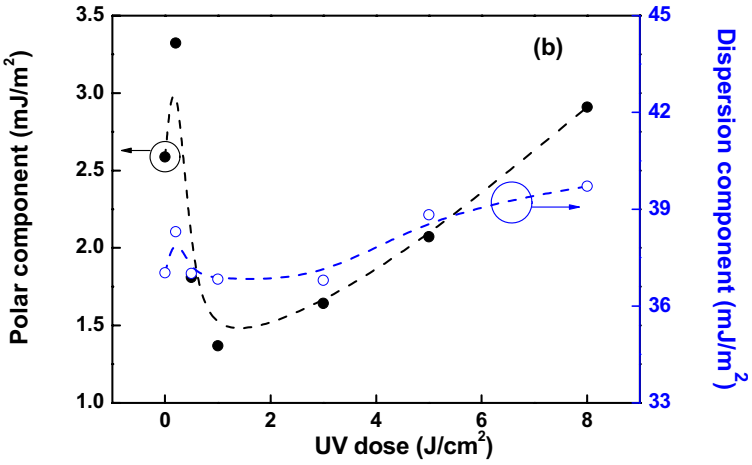
Supporting Information Available





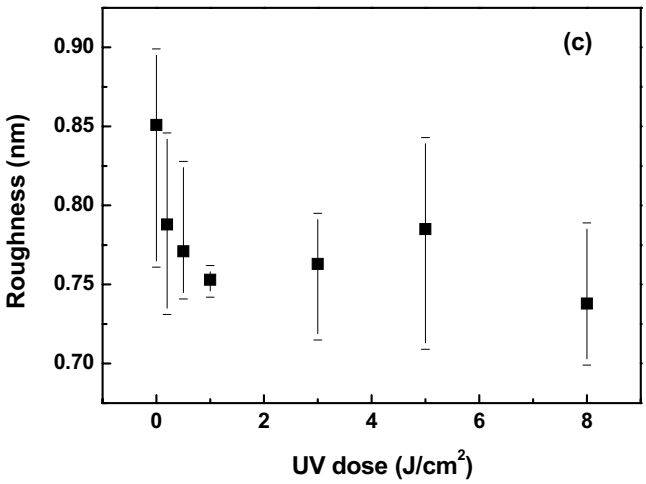
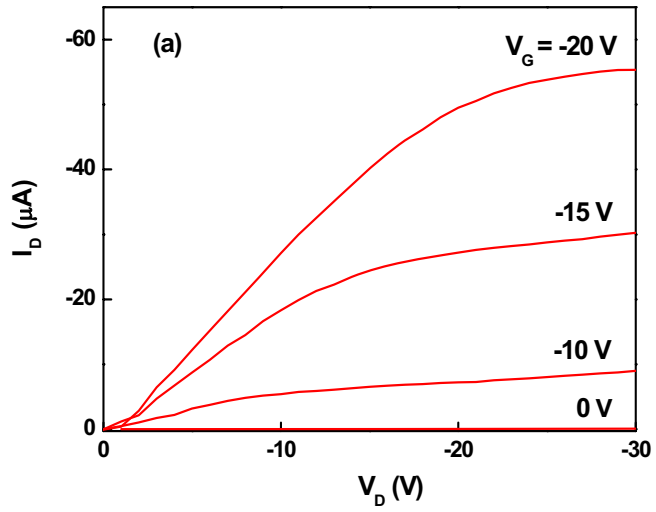
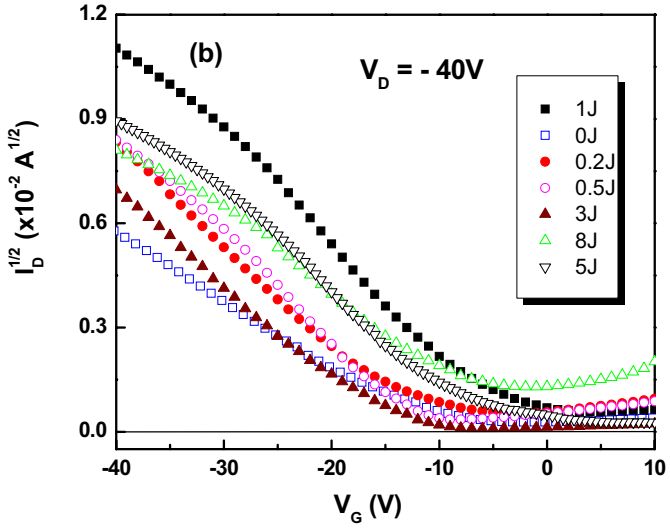


Figure S1. (a) Contact angles of water (■) and diiodomathane (●) on the surface of photosensitive polyimide gate dielectrics. (b) Polar and dispersion components of the surface energy vs. UV doses are calculated from equation (3). (c) Surface roughness of photosensitive polyimide as a function of exposed UV dose. The dashed lines serve as guidelines.


(a)
V_G = -20 V
-15 V
-10 V
0 V
I_D (μA)
V_D (V)
-60
-40
-20
0
0
-10
-20
-30


(b)
V_D = - 40V
1J
0J
0.2J
0.5J
3J
8J
5J
$I_D^{1/2}$ (x10^{-2} A$^{1/2}$)
V_G (V)
1.2
0.9
0.6
0.3
0.0
-40
-30
-20
-10
0
10

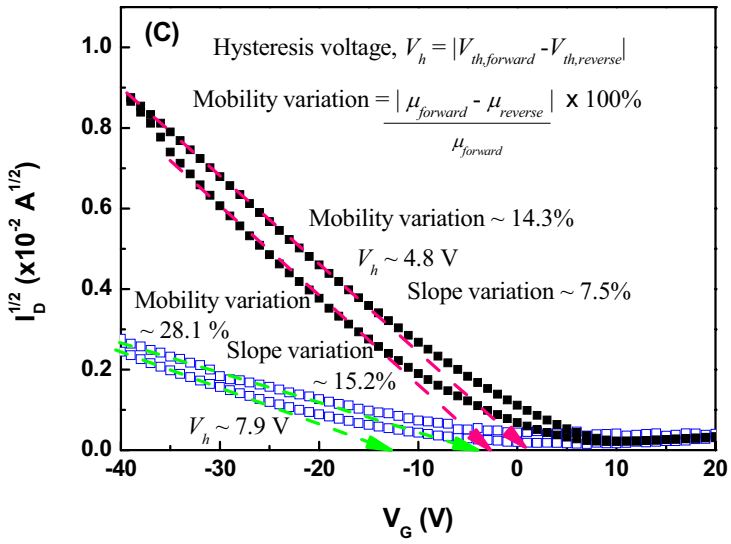


Figure S2. Electrical characteristics of pentacene-based OTFTs with various UV doses exposed polyimide gate dielectrics. (a) output characteristic of OTFT irradiated UV dose of 1 J/cm^2, (b) transfer characteristics of all devices. (c) Transfer electrical characteristics, swept in both directions, of the pentacene OTFTs using SiO_2 with (■) and without (□) PSPI irradiated UV dose of 1 J/cm^2.

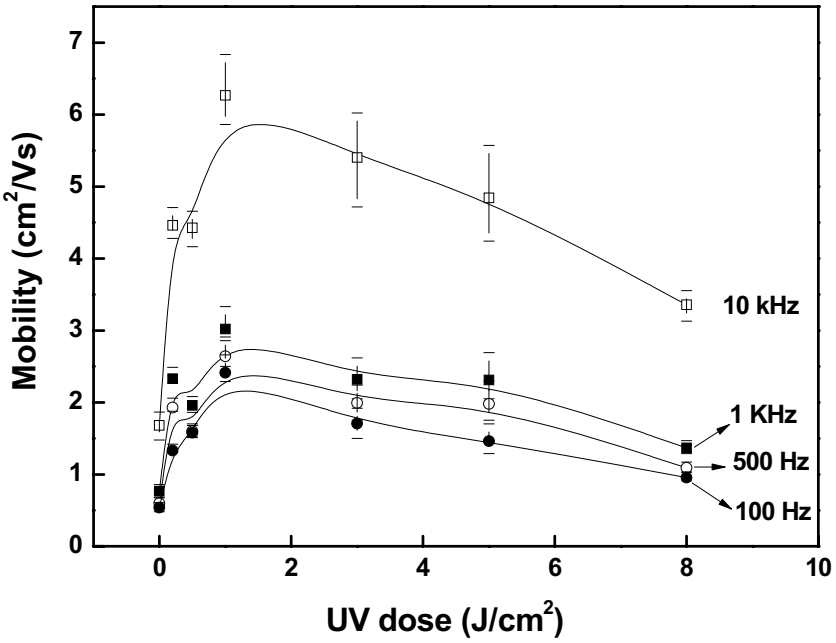


Figure S3. The field-effect mobilities of pentacene-based OTFTs with capacitance of gate-dielectrics measured at frequencies from 100 Hz to 10 kHz. The lines serve as guidelines.

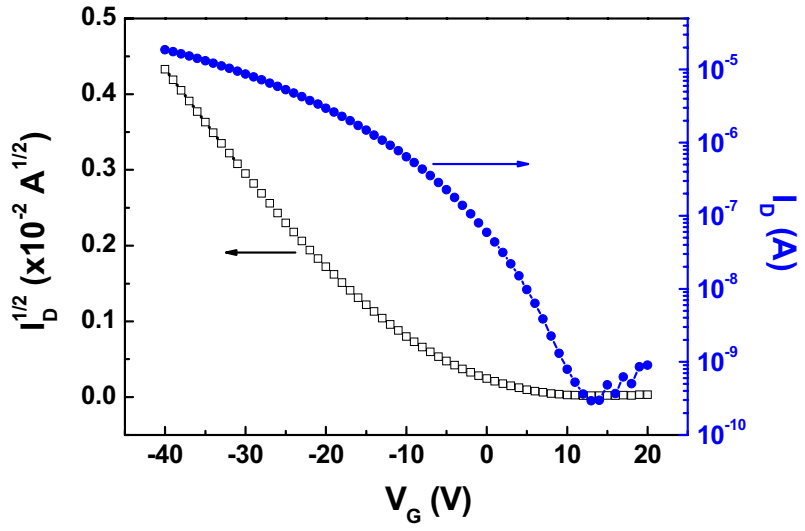


Figure S4. Transfer characteristics of the pentacene-based OTFT whose active layer grows directly on the surface of the SiO_2 dielectric.