materials

Supplementary Materials: Improvement of photoresponse in organic phototransistors through bulk effect of photoresponsive gate insulators

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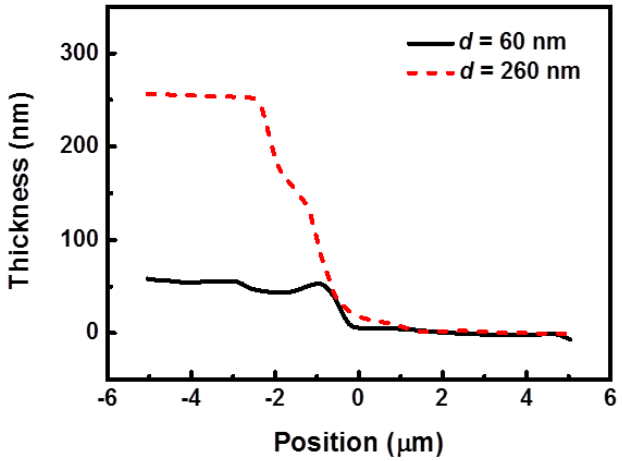

Figure S1. Real thickness data of the produced PVP layers (d = 60 and 260 nm). Actual thickness values indicated as d = 60 nm and 260 nm were about 55 nm and 255 nm, respectively.

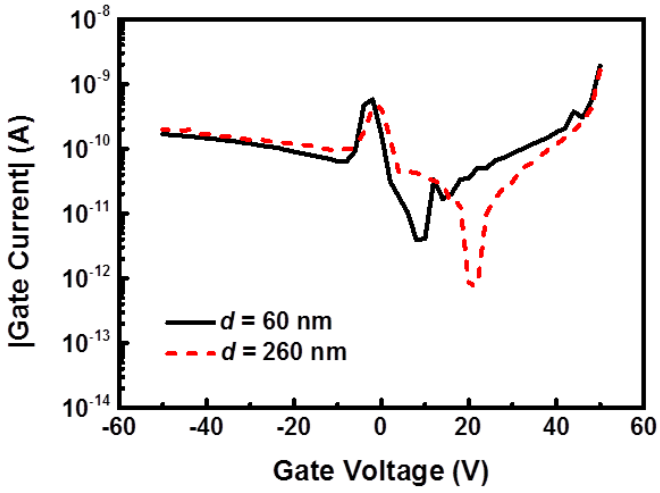

Figure S2. Comparison of gate leakage current of the OPTs with two different thicknesses of PVP (d = 60 and 260 nm) in the dark.

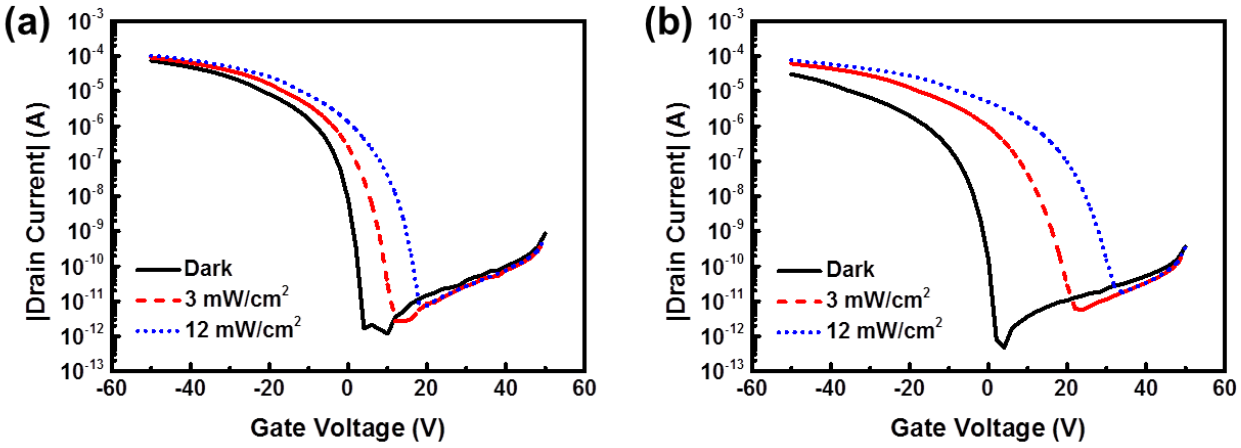

Figure S3. Transfer curves of the OPTs with two different thicknesses, *d*, of PVP, in the dark and under different intensity light exposure (3 and 12 mW/cm²); (a) *d* = 60 nm and (b) *d* = 260 nm.

The onset voltage shift (ΔV_{on}) of the devices after light exposure was examined. It is noteworthy that the ΔV_{on} values have been widely investigated as a parameter for evaluating the photoresponse of OPTs. As shown in Fig. S3, under light illumination (3 mW/cm²), the ΔV_{on} values of the *d* = 60 and 260 nm cases were 7 and 20 V, respectively. In addition, under higher light intensity of 12 mW/cm², the thicker device also showed same tendency, that is, higher ΔV_{on} value of 31 V than the thinner device (ΔV_{on} = 14 V). It should be noted that, as light intensity increased, ΔV_{on} values were enhanced.

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