Supporting Information

In-Situ Surface Modification of ITO Substrate via Bio-Inspired Mussel Chemistry for Organic Memory Devices

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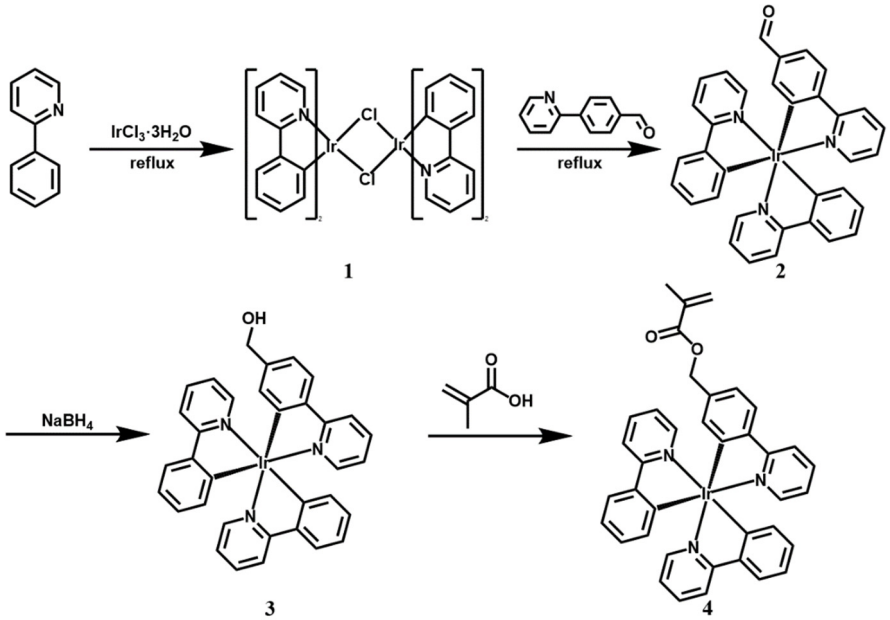

Figure S1. Synthesis of the iridium complex.

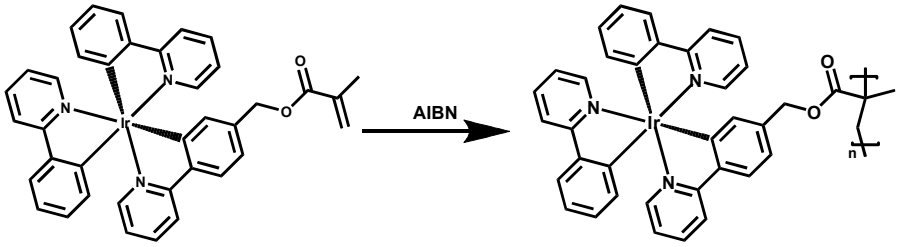

Figure S2. Synthesis route of the iridium polymer.

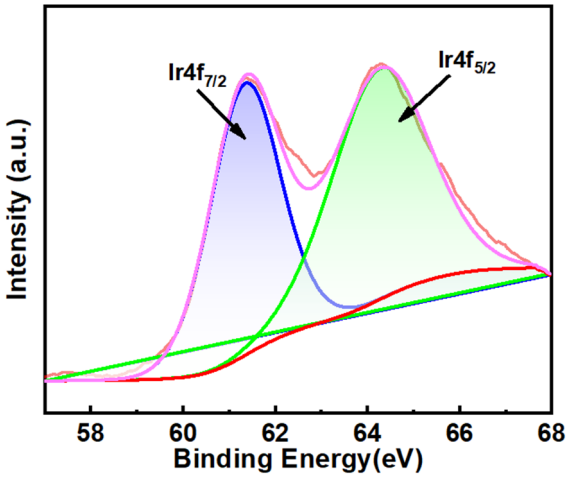

Figure S3. XPS Ir 4f core-level spectra of the iridium polymer.

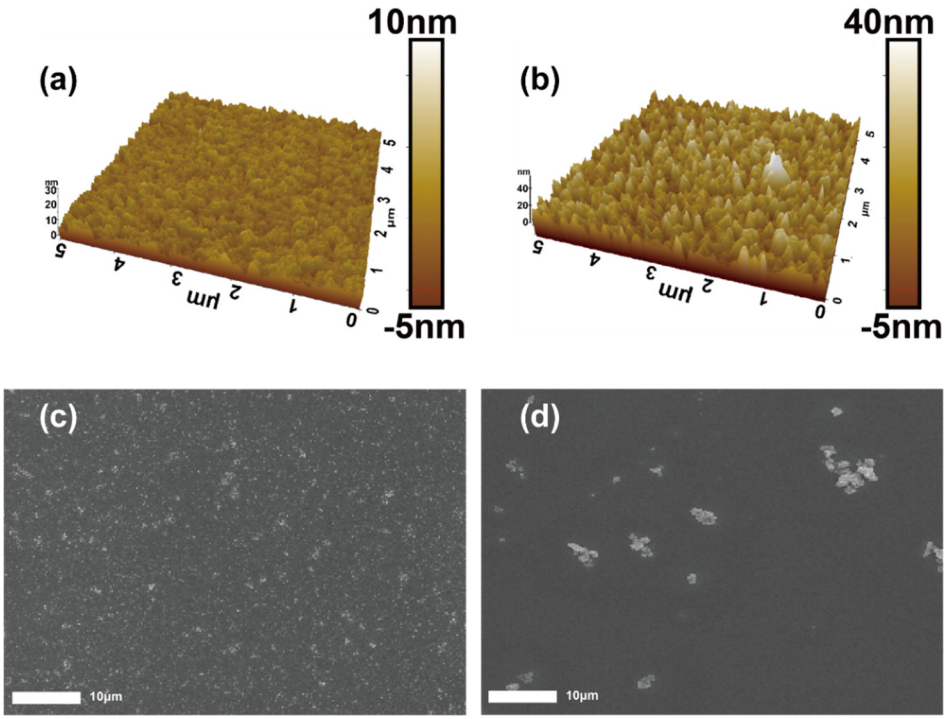

Figure S4. 3D AFM images of (a) PDA-PPy_3Ir/ITO substrate; (b) Ir complex spin-coated PDA/ITO substrate; (c) FESEM image of PDA-PPy_3Ir/ITO substrate; (d) Ir complex spin-coated PDA/ITO substrate.

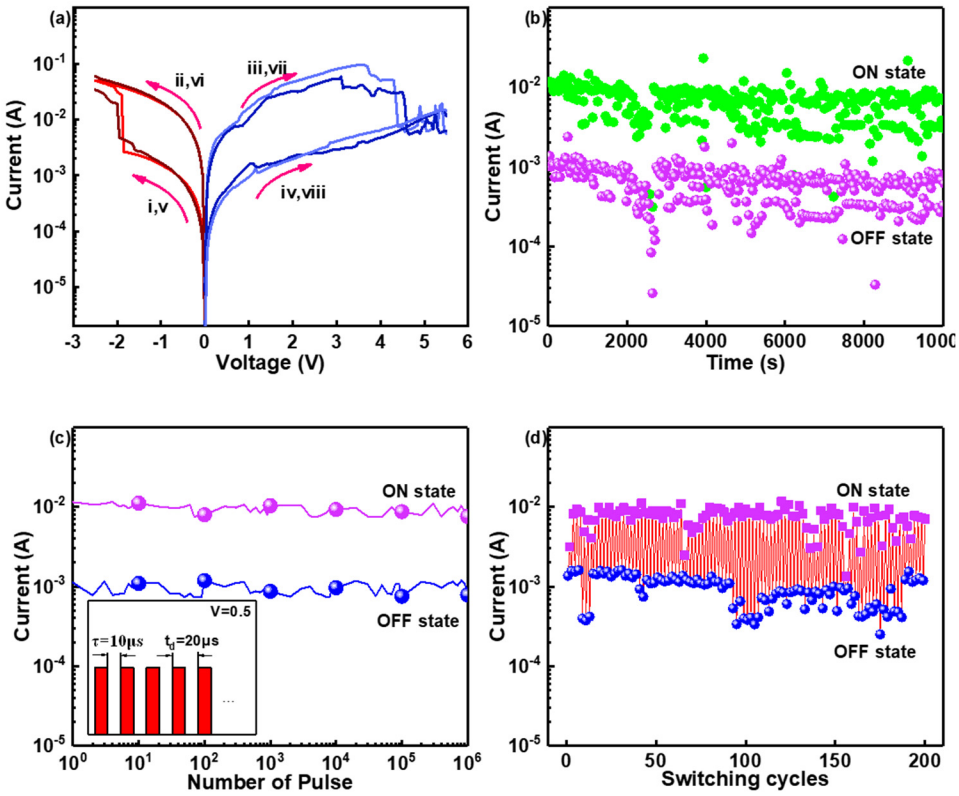

Figure S5. (a) *I-V* curves of Al/Ir polymer/PDA/ITO device; (b) stability of the device in the ON and OFF states under a constant voltage of -0.5 V; (c) effect of continuous read pulses of -0.5 V (pulse width = 10 μs, pulse period = 20 μs) in the ON and OFF states of the device; (d) endurance performances of the device (read at −0.5 V, with the switched pulses of −3 V and 5 V, pulse width: 100 ms; pulse period: 200 ms).

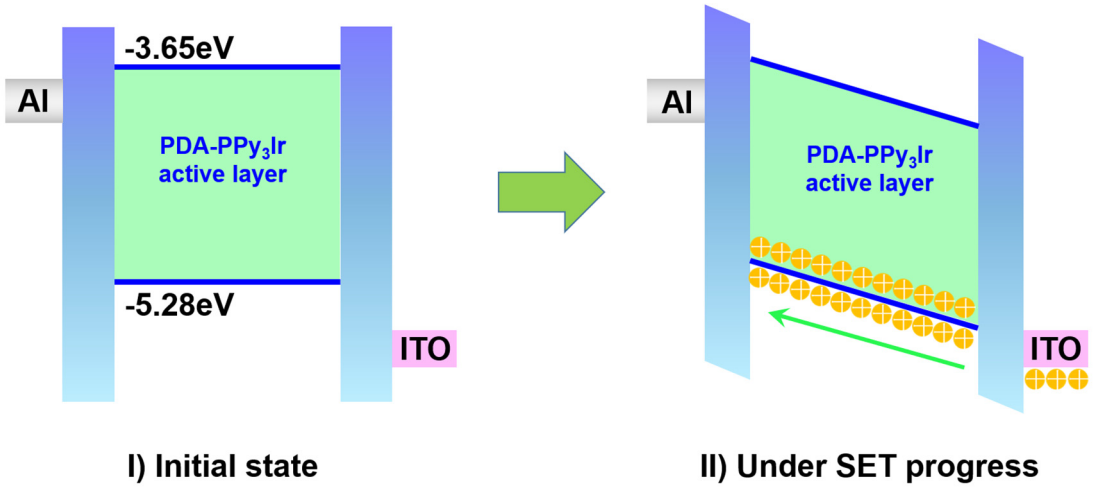

Figure S6. Band diagram of Al/PDA-PPy$_3$Ir/ITO device.