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For organic thin film transistor (OTFT), the top-contact devices show better performance than the bottom-contact ones, due to the less contact resistance between source-drain electrodes and active layer. We fabricated the OTFT using soluble TIPS pentacene with top-contact Au electrodes, as shown in Fig.1. The devices was fabricated by using the poly (3,4-ethylenedioxythiophene) (PEDOT) as a gate electrode, PVCN as a gate insulator, and TIPS pentacene as an active layer. The top surface of the TIPS pentacene active layer of the devices was treated with low energy ion beam. The ion-beam treatment induces the enhancement of adhesion between electrodes and active layer [1]. We measured electrical characteristics of the OTFT devices such as field-effect mobility ($\mu_{FE}$), on-off current ratio ($I_{ON/OFF}$), and threshold voltage ($V_{th}$).

**Figure 1.** Structure of OTFT device

**Reference**