In-crystal carriers in organic single crystal transistors

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With a double-gate device incorporating two transistor structures on the both sides of the crystal, we found that each transistor cross-talks with each other, inducing high-mobility (higher than 30 cm$^2$/Vs) carriers inside the crystal. The similar cross-talking events are observed also for a device with an acceptor layer of F$_4$-TCNQ on one side of the rubrene crystal.