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**Quantum efficiency in organic phototransistors** WILLIAM HAMMOND, JIANGENG XUE, University of Florida — Organic optoelectronic devices hold a prominent role in current applied physics research. Although these devices inherently suffer from lower carrier mobility than inorganic devices, their mechanically flexible nature and low material costs enable new and interesting applications. Organic phototransistors, for example, may enable simplified circuits for large area and flexible sensors. Here we report the spectral dependence of the external quantum efficiency of organic phototransistors (OFETs) based on pentacene and C<sub>60</sub>. Furthermore, we explore the gain mechanism in these devices and the effect of transistor structure on internal photomultiplication.

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