Photo-induced effects in Organic Field-Effect Transistors VITALY PODZOROV, MICHAEL GERSHENSON, Rutgers University — Most of the organic semiconductors are optically active in visible range. The talk will show that optical effects may play an important role in Organic Field-Effect Transistors (OFETs). As a model system we study the single-crystal OFETs that demonstrate intrinsic transport with high mobility of charge carriers, $\mu = 5$ to $20$ cm$^2$/Vs [1,2]. Particularly, we report on an observation of light-induced switching of conductance in the back-gated OFETs with a built-in conduction channel [3]. Other results, including the demonstration of control of the OFET’s characteristics with light, will be discussed. [1] V. Podzorov et al., Appl. Phys. Lett. 82, 1739 (2003); ibid. 83, 3504 (2003); [2] V. Podzorov et al., Phys. Rev. Lett. 93, 086602 (2004); [3] V. Podzorov et al., cond-mat/0406738.