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Charge carrier transport and optical properties of SAM-induced conducting channel in organic semiconductors. VITALY PODZOROV, Rutgers University — Certain types of self-assembled monolayers (SAM) grown directly at the surface of organic semiconductors can induce a high surface conductivity in these materials [1]. For example, the conductivity induced by perfluorinated alkyl silanes in organic molecular crystals approaches 10 to -5 Siemens per square. The observed large electronic effect opens new opportunities for nanoscale surface functionalization of organic semiconductors and provides experimental access to the regime of high carrier density. Here, we will discuss temperature variable measurements of SAM-induced conductivity in several types of organic semiconductors. [1]. M. F. Calhoun, J. Sanchez, D. Olaya, M. E. Gershenson and V. Podzorov, "Electronic functionalization of the surface of organic semiconductors with self-assembled monolayers", Nature Mat. 7, 84 (2008).

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