

Abstract Submitted
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Chemical vapor sensors using a poly(triarylamine) semiconductor modified through incorporation of organic receptors¹ BRIAN COBB, DAVIANNE DUARTE, ANANTH DODABALAPUR, University of Texas at Austin — A poly(triarylamine) (PTAA) semiconducting active layer has been employed in order to produce OFET chemical sensors displaying excellent stability in air, with minimal bias stress effects. We propose a “chemical fingerprint” sensing array comprised of a single base polymer (PTAA), with the selectivity of individual devices modified through the incorporation of a variety of small molecule receptors. This allows for consistent device operation and optimization of the array. The effect of various receptors will be discussed, and reported while sensing alcohol vapors. Different methodologies will be proposed for incorporation of receptors into the device, including incorporation into the PTAA film and separate deposition on top of the PTAA film. The relative merits of each approach will be discussed, including the effect on both threshold voltage and carrier mobility.

¹PTAA material supplied by Merck.

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