Supporting information

Molecular material semiconductor - doped insulator heterojunctions:
An alternative transducer for gas chemosensing.

Vicente Parra, Jérôme Brunet, Alain Pauly, Marcel Bouvet*

Synthesis of 2,3,9,10,16,17,23,24-octafluorinated phthalocyanine.

Cu(F₈Pc) was obtained by reaction of 4,5-difluoro-1,2-dibromobenzene with copper cyanide (CuCN) in demethylformamide (DMF) (scheme below). 27.2 g (0.1 mole) of 4,5-Difluoro-1,2-dibromobenzene were made to react at 150 °C for 2 hr with 26.9 g (0.3 mole) of CuCN in 50 mL of DMF. The reaction mixture was treated twice with 0.5 L of concentrated ammoniac solution and filtered. The solid was washed with CHCl₃ in a soxhlet, then dried at 100 °C under vacuum to give 14.4 g of a fine blue powder. Yield 80%; Anal. Calcd. for C₃₂H₈F₈N₈Cu: C, 53.38%; H, 1.12%; F, 21.11%; Cu, 8.83%. Found: C, 52.74%; H, 1.13%; F, 21.03%; Cu, 9.17%.

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\begin{align*}
\text{Reaction scheme.}
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Figure S1. I-V characteristics of the MSDI device F0 (CuPc/LuPc$_2$), at RT (up); and its response to ozone (90 ppb) (bottom).
Figure S2.- I-V characteristics of a LuPc$_2$ single-layer resistor (on ITO, 100 nm thick).