ELECTRICAL CHARACTERISATION OF PN JUNCTIONS OF PPV AND SILICON

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The electrical characteristics of pn junctions between n^+-silicon and PPV prepared by the precursor route are presented. The devices can compete with commercial diodes, with current densities of 50 mA/cm^2 at +1V, rectification ratios of 60,000 at |1V|, and cut–off frequencies well above 1 MHz.

The C-V and I-V characteristics show evidence for minority carrier injection into the PPV, as reported for similar MEH-PPV devices.

Preliminary DLTS measurements show evidence for the presence of at least one shallow minority-carrier trap. Thermal stimulated currents (TSC) corroborate these results.