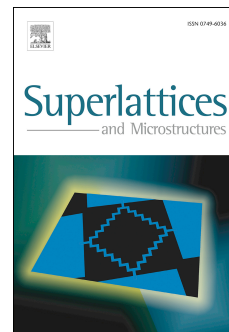


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# Efficient cascade multiple heterojunction organic solar cells with inverted structure

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## Abstract

In this work, we demonstrate an efficient cascade multiple heterojunction organic solar cell with inverted structure. By using two donor materials, poly(3-hexylthiophene) (P3HT) and titanyl phthalocyanine (TiOPc), as well as two acceptor materials, [6,6]-phenyl C<sub>61</sub> butyric acid methyl ester (PCBM) and C<sub>60</sub>, the cascade multiple heterojunctions of P3HT:PCBM/TiOPc:C<sub>60</sub>/C<sub>60</sub> have been constructed. Applying the optimized inverted configuration of FTO/Zinc Tin Oxide (ZTO)/C<sub>60</sub> (30 nm)/TiOPc:C<sub>60</sub> (1:1.5, 25 nm)/P3HT:PCBM (1:0.8, 100 nm)/MoO<sub>3</sub> (4 nm)/Ag, the considerably enhanced open circuit voltage ( $V_{OC}$ ) and short circuit

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