

Suppression of Geminate Charge Recombination in Organic Photovoltaic Devices with a Cascaded Energy Heterojunction

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Supplementary information

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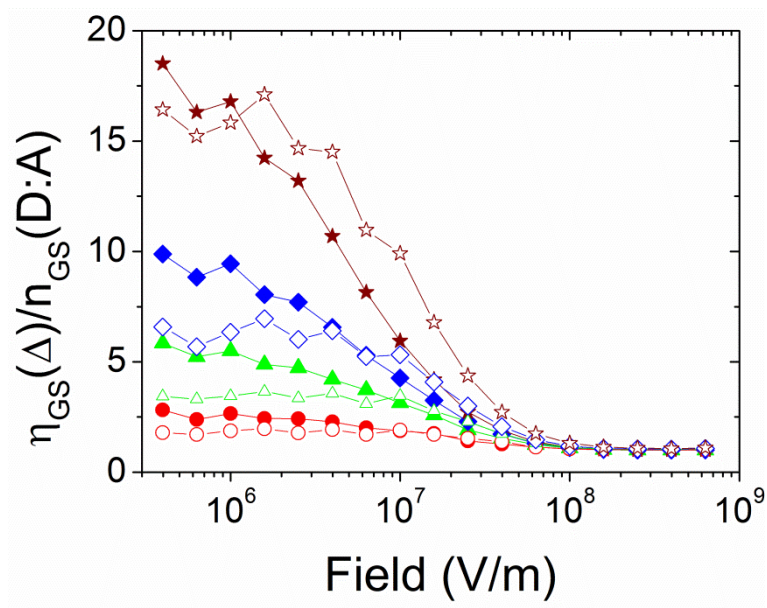


Figure S1: Factor improvement in charge separation efficiency as a function of electric field and HOMO band-edge offset, Δ for a bilayer (filled) and a blend (open) when $\Delta = 50\text{meV}$ (red circles), 100meV (green triangles), 150meV (blue diamonds) and 300meV (purple stars). In all cases $d = 1\text{nm}$ and $\sigma_D = \sigma_C = 100\text{meV}$.

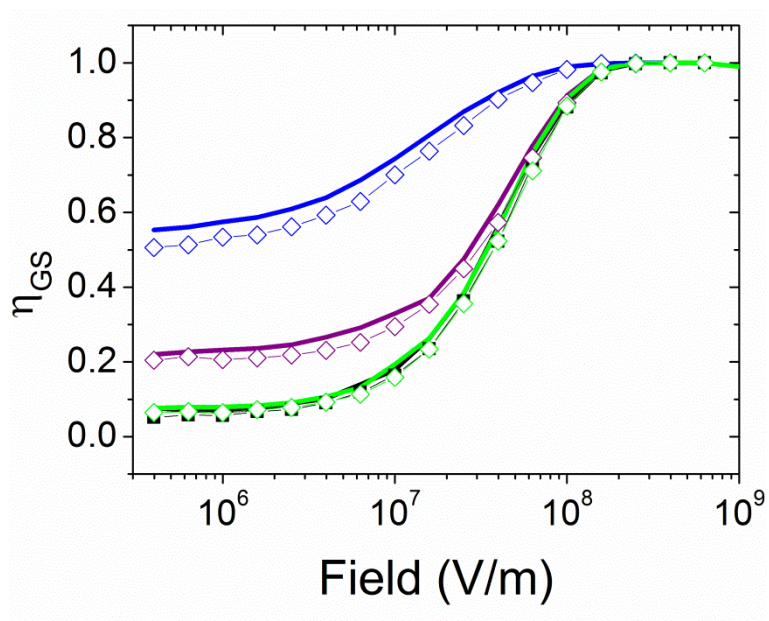


Figure S2: Charge separation efficiency, η_{GS} , as a function of electric field and d in a bilayer when nearest neighbor hopping (symbols) and variable range hopping (thick lines) is assumed. Black denotes a donor-acceptor heterojunction (i.e. $\Delta = 0$), while colors denote donor-cascade-acceptor heterojunctions with $\Delta = 150\text{meV}$, $\sigma_D = 100\text{meV}$, when $d = 1$ (blue), 3 (purple) and 10nm (green).