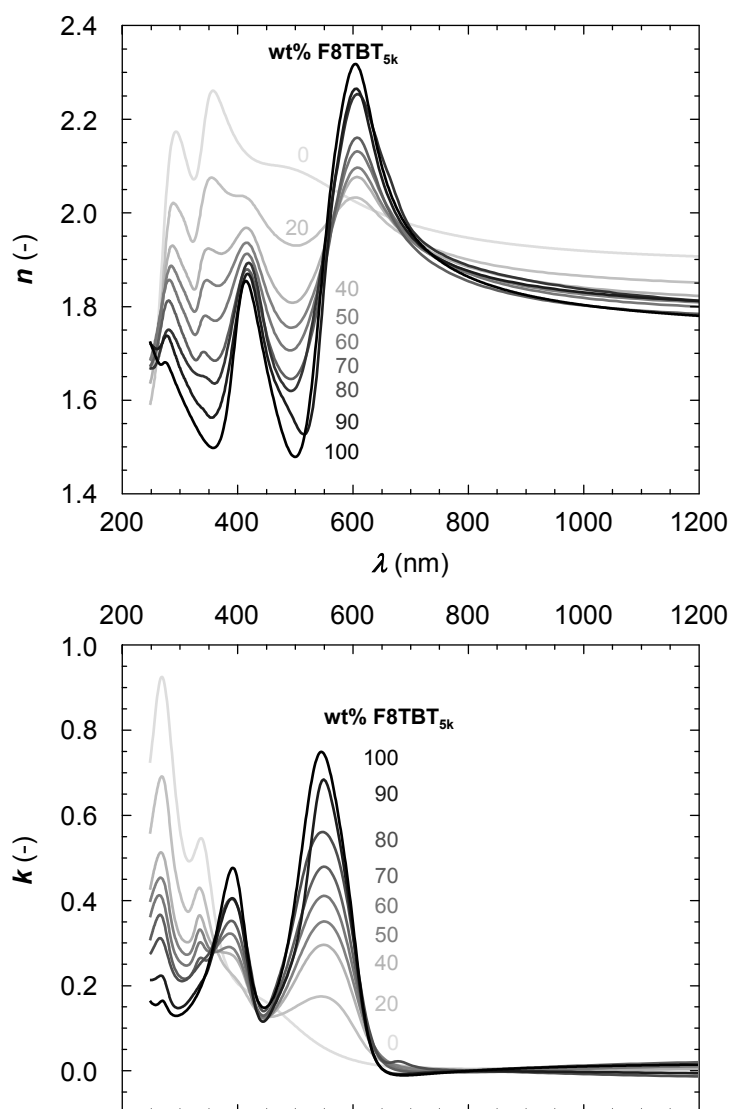


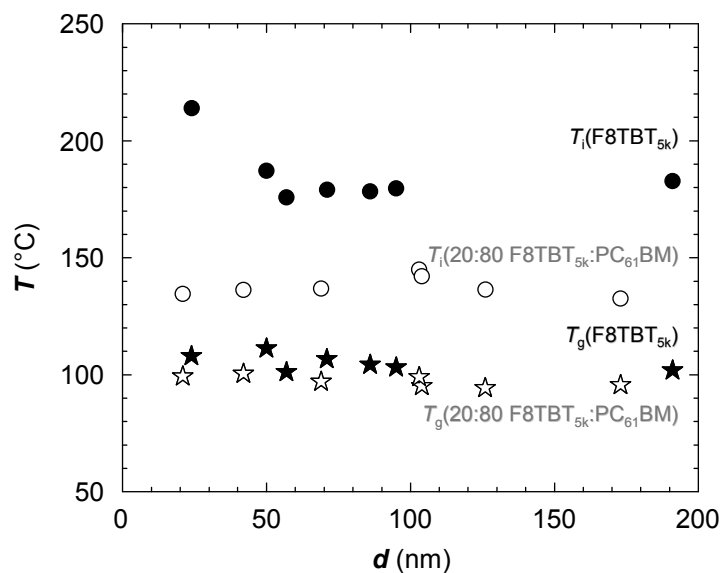
Supplementary Information

Phase Behaviour of Liquid-Crystalline Polymer / Fullerene Organic Photovoltaic Blends: Thermal Stability and Miscibility

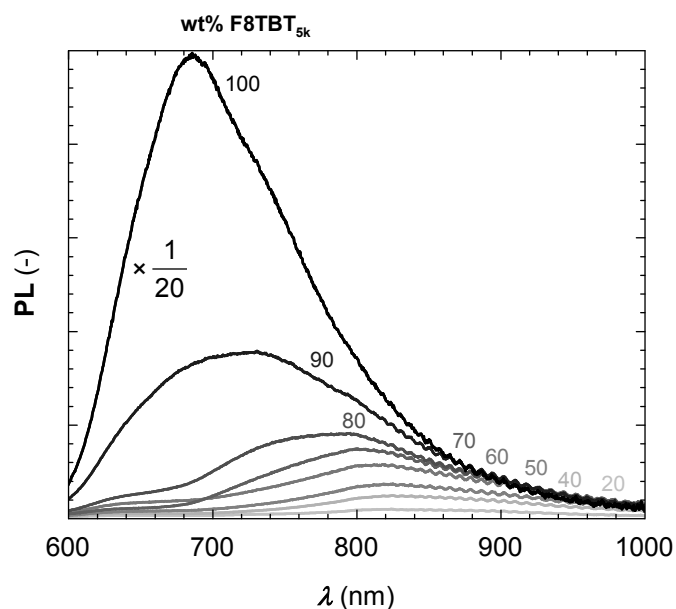
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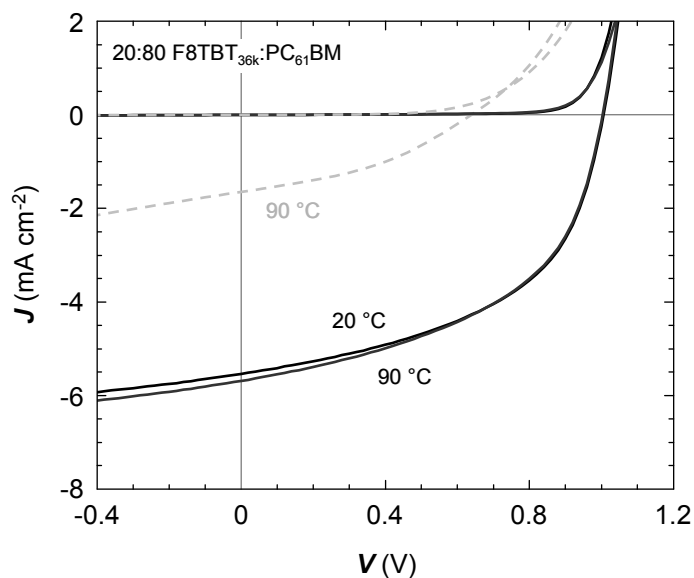
Suppl. Fig. 1. Refractive index n (top) and extinction coefficient k (bottom) of F8TBT_{5k}:PC₆₁BM thin films deduced from variable-angle spectroscopic ellipsometry (VASE) scans at 50 °C using the Standard Critical Point Model. The composition ranges from pure F8TBT_{5k} to pure PC₆₁BM as indicated.



Suppl. Fig. 2. Transition temperatures of F8TBT_{5k} and 20:80 $\text{F8TBT}_{5k}:\text{PC}_{61}\text{BM}$ with respect to thin film thickness d . The glass transition temperatures $T_g(\text{F8TBT}_{5k}) \sim 104 \pm 2$ °C (full stars) and $T_g(20:80 \text{ F8TBT}_{5k}:\text{PC}_{61}\text{BM}) \sim 98 \pm 2$ °C (open stars) appear independent of d . Whereas $T_i(20:80 \text{ F8TBT}_{5k}:\text{PC}_{61}\text{BM}) \sim 138 \pm 4$ °C (open circles) is equally invariant, $T_i(\text{F8TBT}_{5k}) \sim 179 \pm 2$ °C (full circles) increases for $d \leq 50$ nm.



Suppl. Fig. 3. Absolute photoluminescence (PL) spectra of $\text{F8TBT}_{5k}:\text{PC}_{61}\text{BM}$ binaries. Spectra were recorded under the same illumination conditions. The composition ranges from pure F8TBT_{5k} to 20:80 $\text{F8TBT}_{5k}:\text{PC}_{61}\text{BM}$ as indicated.



Suppl. Fig. 4. $J - V$ characteristics of 20:80 F8TBT_{36k}:PC₆₁BM photovoltaic devices under 1000 W m⁻² illumination. The active layer was annealed for 16 hours at the temperatures indicated before top electrode deposition (solid lines) as well as after top electrode deposition (dashed line). For completeness, dark-current characteristics are also displayed.