

Supplementary Information

Nucleation-Limited Fullerene Crystallisation in a Polymer-Fullerene Bulk-Heterojunction Blend

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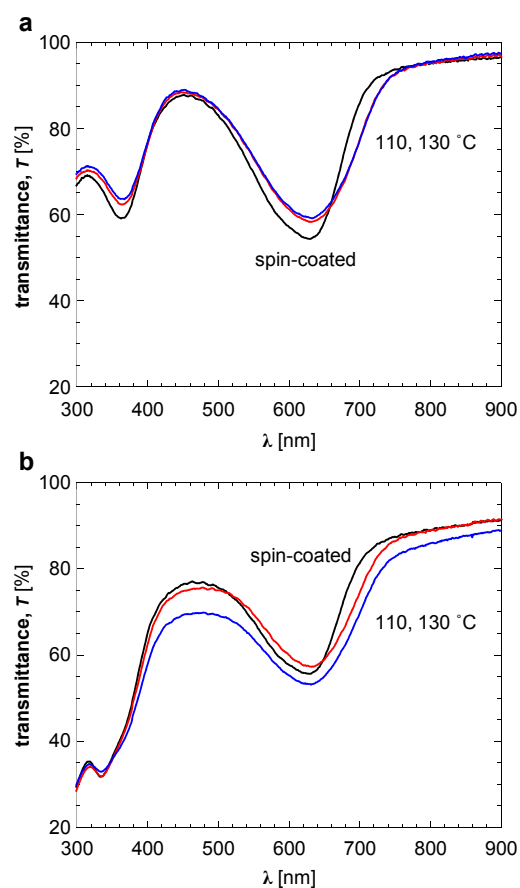


Fig. S1 Transmittance spectrums for (a) TQ1 and (b) 1:1 TQ1:PCBM, as spin-coated (black), after annealing at 110 °C (blue) and 130 °C (red).

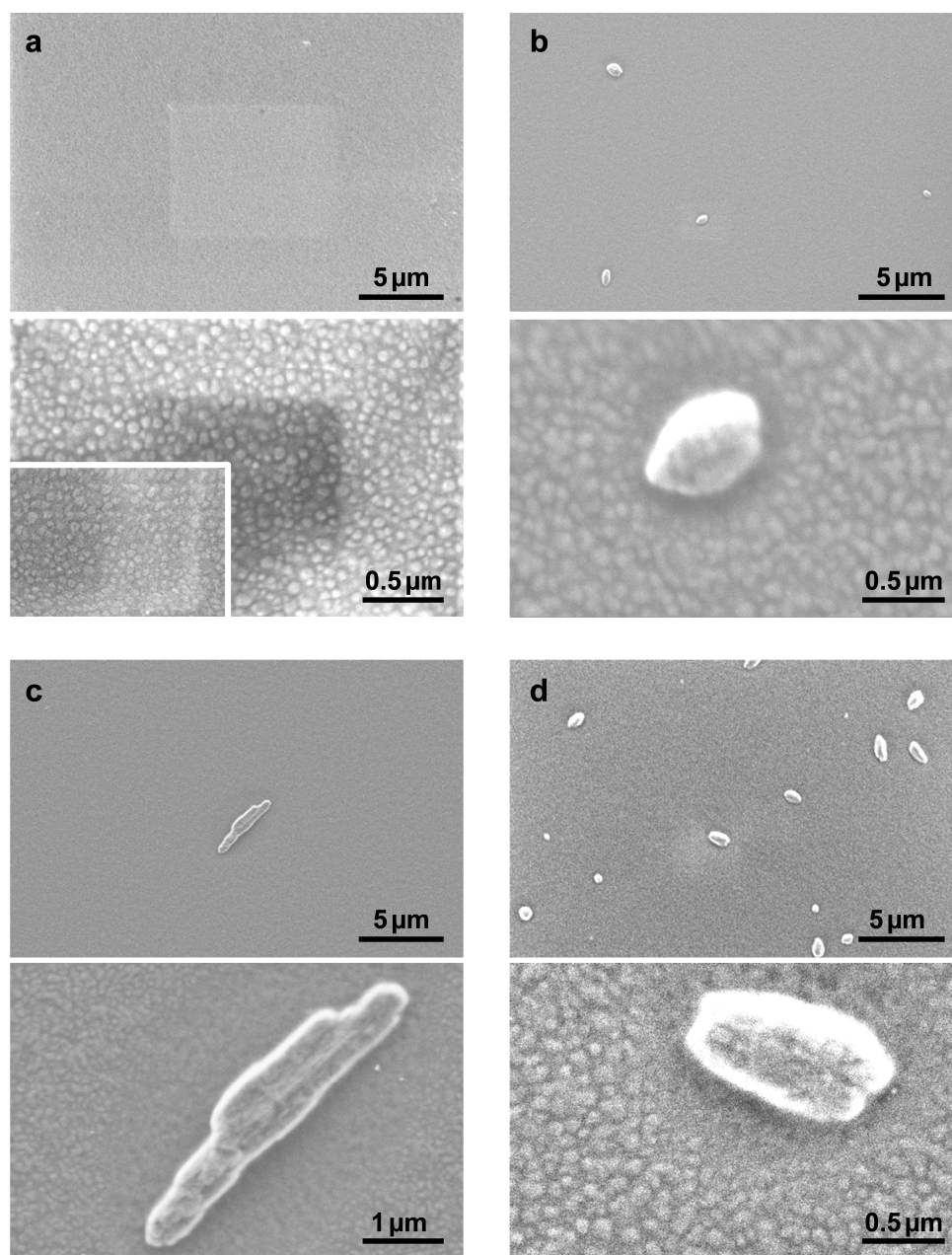


Fig. S2 SEM images of 1:1 TQ1:PCBM films spin-coated on (a) PEDOT:PSS coated glass or glass (inset), pristine; (b) PEDOT:PSS coated glass, annealed at 130 °C; (c) PEDOT:PSS coated glass, annealed at 160 °C and (d) glass, annealed at 160 °C. The rectangular features are artefacts that arise due to slow transportation of negative charge carriers created by the beam when recording images with higher magnification.

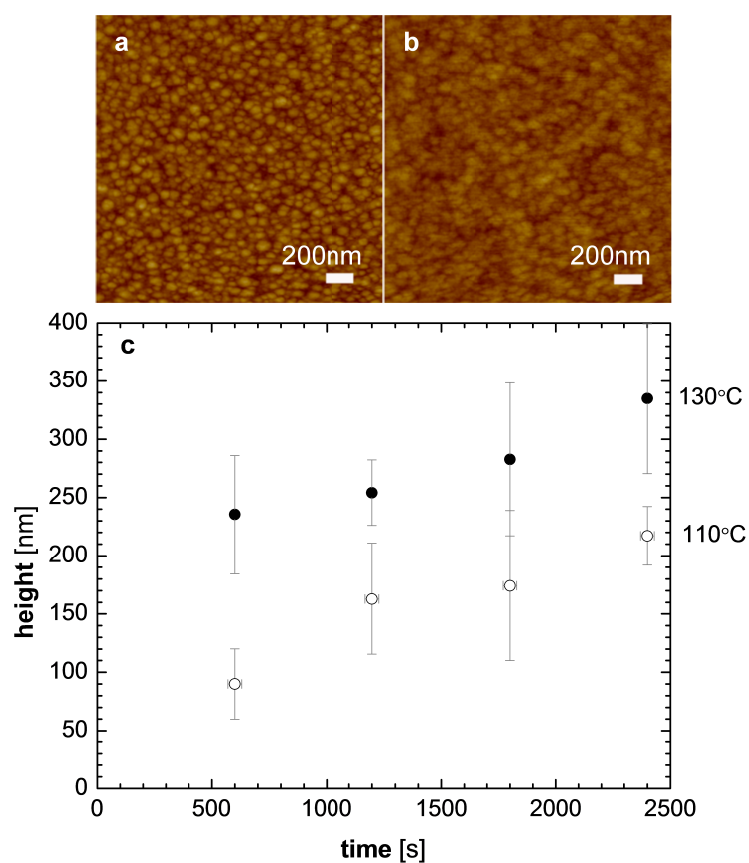


Fig. S3 AFM images ($2 \times 2 \mu\text{m}$) of 1:1 TQ1:PCBM spin-coated on glass and recorded in between PCBM crystals; (a) pristine and (b) annealed at 130 °C. (c) The height of PCBM crystals with respect to the film surface as a function of annealing time at 110 °C (open circles) and 130 °C (filled circles); measured with AFM.

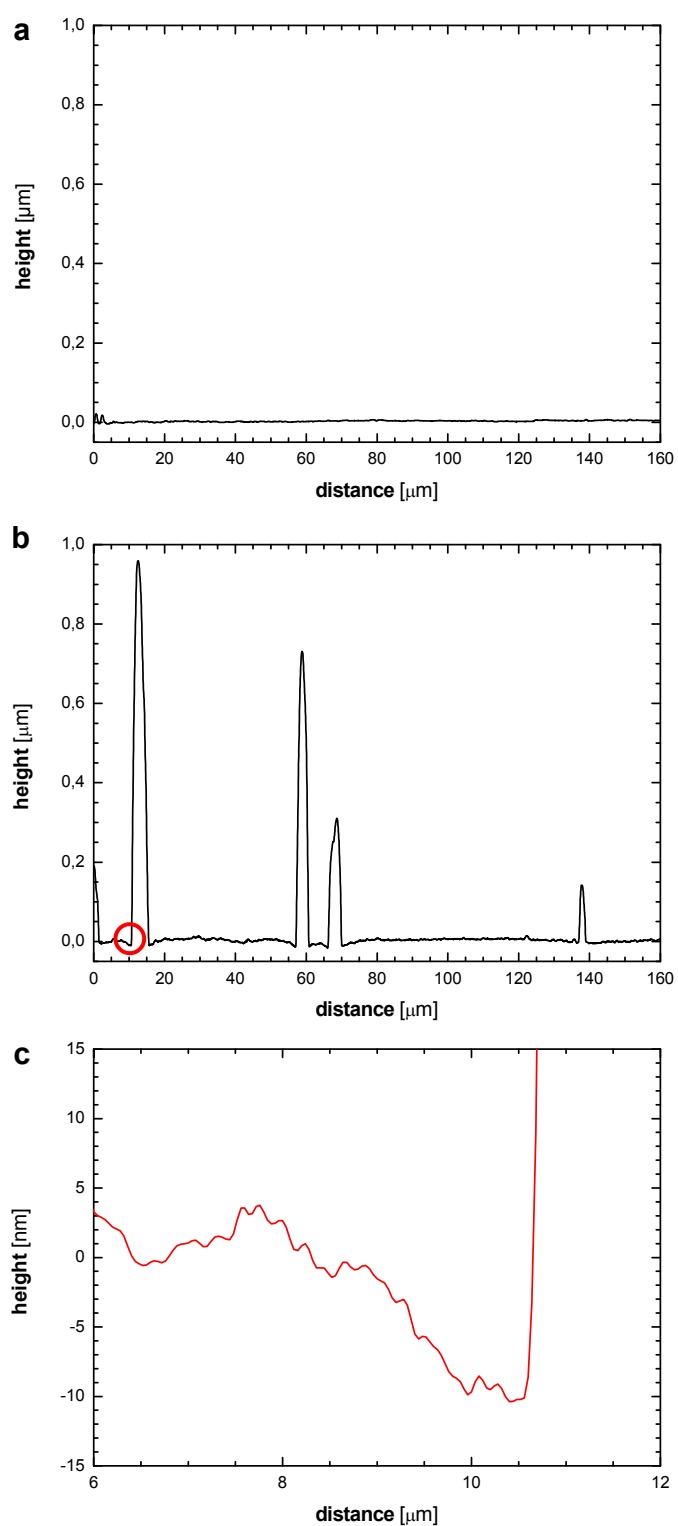


Fig. S4 Profilometer scans of the surface of a thin film before (a) and after annealing at 150 °C for 1h (b); (c) shows the depletion region that is marked in (b) with a red circle in greater detail.

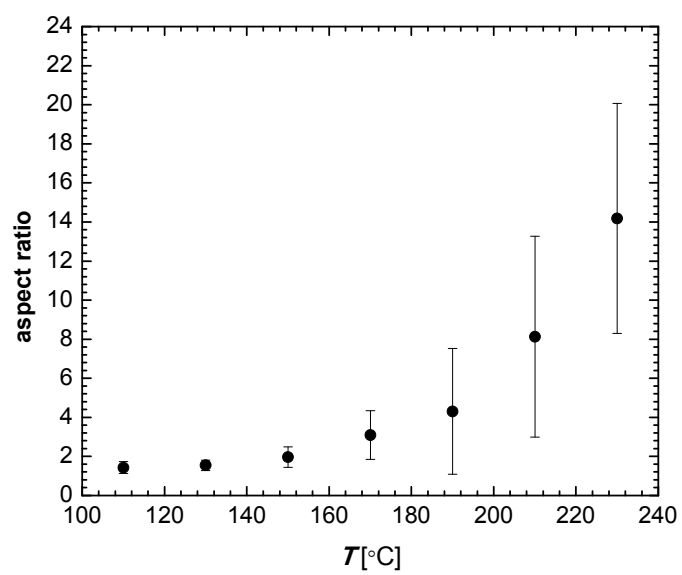


Fig. S5 Aspect ratio of the crystals as a function of annealing temperature.

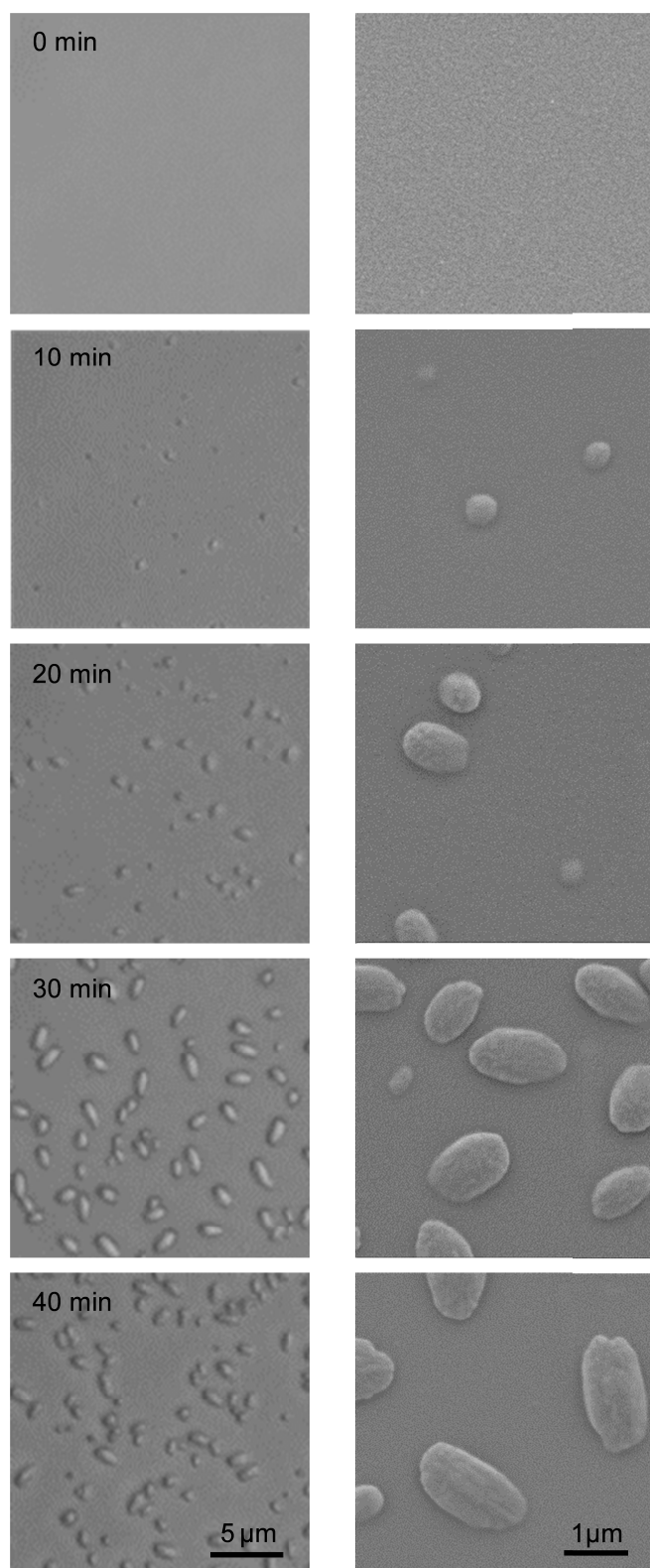


Fig. S6 Optical micrographs (left) and Scanning electron micrographs (right) for a 1:1 TQ1:PCBM film spin-coated on glass and annealed at 110 °C for the indicated annealing times.

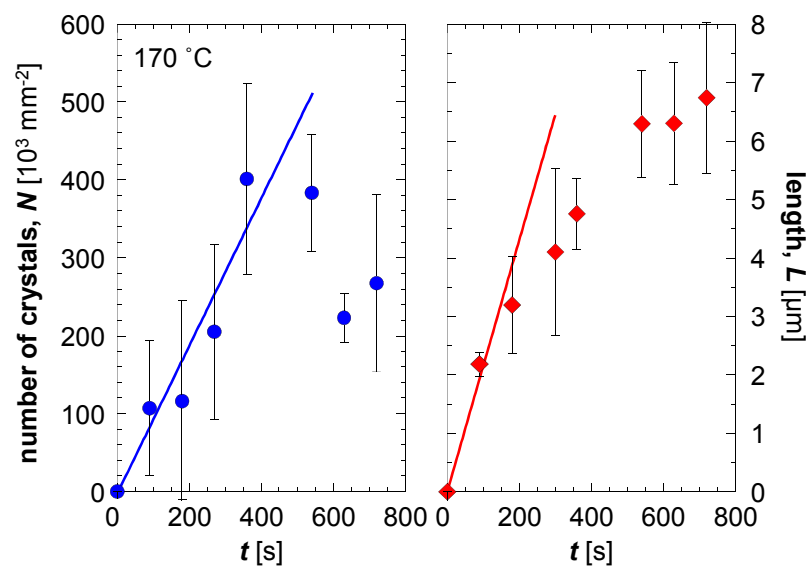


Fig. S7 Number of nuclei (left) and length of crystals (right) for a 1:1 TQ1:PCBM film annealed at 170 °C extracted from optical micrographs.