Electronic Supplementary Information (ESI):

Photoinduced electron transfer in thin films of porphyrin-fullerene dyad and perylenetetracarboxidiimide

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Atomic Force Microscopy (AFM)

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AFM topographs show that both P–F and PTCDI form relative smooth and uniform films after deposition (Figure S1 and S2). However, the roughness analysis indicates that the P–F film is somewhat rougher compared to PTCDI film, resulting a slightly higher RMS-roughness and peak-to-peak distance values. This might be also the reason why randomly organized fine structure is much better resolved for P–F (Figure S1).

**Figures:**

**a)**

![AFM image](image1)

**b)**

![AFM image](image2)

**c)**

![Line profile](image3)

**Figure S1.** AFM images of the 100 mol% P–F LS film. (a) Topographic view (image size 100x100 nm²) with dark-light height scale 0.7 nm. Root Mean Square (RMS) roughness is 0.108 nm. (b) Isometric view, with 5 x height scaling. (c) Line profile with average peak-to-peak distance 5 ± 1 nm.
Figure S2. AFM images of the thermally evaporated PTCDI film. a) Topographic view (image size 100x100 nm²), with dark-light height scale 0.7 nm. Root Mean Square (RMS) roughness is 0.097 nm. (b) Isometric view, with 5 x height scaling. (c) Line profile with average peak to peak distance 3.5 ± 0.5 nm.
Figure S3. Photovoltage (PV) responses of P–F (100 mol% LS) and F–P (40 mol% LB). The signals are recorded by exciting the samples with 170 μJ/cm² energy density.

Figure S4. Photovoltage (PV) responses of thermally evaporated PTCDI (16 nm) at 430 nm excitation wavelength (a), and 532 nm excitation (b). The excitation energy density is 1.19 μJ/cm².
Figure S5. Photovoltage (PV) responses in short time scale up to 1.8 μs (a), and long time scale up to 9 ms (b) for the bilayer structures P–F|PTCDI and PTCDI|F–P. The excitation wavelength is 532 nm and the excitation energy density 0.33 μJ/cm².

Figure S6. Time-resolved absorption spectrum of PTCDI film (thickness = 10 nm), at 5 μs after the excitation. The excitation wavelength is 532 nm and the excitation energy density is roughly 2 μJ/cm².

Figure S7. Absorption spectra of the three sample structures used in flash-photolysis experiments: P–F (6 LS), (P–F |PTCDI) x6, and PTCDI (10 nm).