S1. X-ray determined molecular structure for compound 4 showing the atomic labelling.
S2. Crystal packing diagram for **ANTBD** in which pairwise stacking of anthracene units and a close approach of triazole CH to an F atom can be seen. H atoms are omitted for clarity; the view is down the $a$ axis.
S3. Ambient temperature absorption spectrum for PHANT in dry toluene.
S4. Ambient temperature absorption and fluorescence spectra for PHANT in dry toluene.
S5. Comparison of the corrected fluorescence excitation spectrum (red) with the absorption spectrum (black) for PHANT in dry toluene.
S6. Time-correlated single photon counting fluorescence decay collected for PHANT in dry toluene and the least-squares fit to the single exponential (red line). Also shown is the instrument response function.
S7. Ambient temperature absorption spectrum for BD1 in dry toluene.
S8. Ambient temperature absorption and fluorescence spectra for BD1 in dry toluene.
S9. Comparison of the ambient temperature absorption spectra for BD1 and ANTBD in dry toluene. Arrows depict excitation wavelength used for transient absorption (TA) and up-conversion (UC) experiments.
S10. Comparison of the corrected fluorescence excitation spectrum (red) with the absorption spectrum (black) for BDANT in dry toluene.
S11. Comparison of the normalised corrected fluorescence excitation spectra for BDANT in dry toluene at 293.8K (black) and 279.7 K (red).
S12. Cyclic voltammogram for PHANT in dry DCM (0.2 M TBATFB background electrolyte) at a glassy carbon working electrode and vs Ag wire reference electrode. Scan rate = 50 mV s$^{-1}$.
S13. Cyclic voltammogram for BD1 in dry DCM (0.2 M TBATFB background electrolyte) at a glassy carbon working electrode and vs Ag/AgCl reference electrode. Scan rate = 50 mV s$^{-1}$
Cyclic voltammogram for ANTBD in dry DCM (0.2 M TBATFB background electrolyte) at a glassy carbon working electrode and vs Ag/AgCl reference electrode. Scan rate = 50 mV s⁻¹

S14.
S15. Overlap between emission spectrum for PHANT (red) with $S_0$-$S_1$ (blue) and $S_0$-$S_2$ (green) electronic absorption transitions for BD1 (black)
S16. Comparison of the X-ray crystallographic determined structure for **ANTBD** (top) and the computer generated model (middle). The bottom figure shows an overlay of the two structures (N and C atoms of bodipy core)
S17. HOMO and LUMO molecular orbitals calculated for PHANT using Gaussian-03 at the Hartree-Fock level and using a 6-311G basis set.
S18. HOMO and LUMO molecular orbitals calculated for PHANT using Gaussian-03 and DFT-B3LYP (6-311G basis set).
S19. HOMO and LUMO molecular orbitals calculated for ANTBD using Gaussian-03 and Hartree-Fock (6-31G basis set).
S20. Kinetics recorded at 530 nm (●) and the least-squares fit (red line) to the data points from the transient absorption profiles recorded after excitation of **ANTBD** in Me-THF at 400 nm with a 70 fs laser pulse.
S21. Femtosecond up-conversion profiles recorded at two different wavelengths following excitation of ANTBD in MeTHF at 380 nm with a 70 fs laser pulse. Least-squares fit to data points (●) is shown by red line.
S22. Kinetics recorded at 530 nm (●) and the least-squares fit (red line) to the data points from the transient absorption profiles recorded after excitation of ANTBD in DCE at 400 nm with a 70 fs laser pulse.
S23. Femtosecond up-conversion profiles recorded at two different wavelengths following excitation of **ANTBD** in DCE at 380 nm with a 70 fs laser pulse. Least-squares fit to data points (●) is shown by red line.
S24. Overlap integral ($J_F$) calculation result showing the area for the Bodipy-based $S_0$-$S_1$ overlap (blue) and $S_0$-$S_2$ overlap (green).
S25. Overlap integral ($J_{DA}$) calculation result showing the area for the Bodipy-based $S_0$-$S_1$ overlap and $S_0$-$S_2$ overlap.
S26. Illustration of generated planes and the corresponding $\kappa^2$ values for ANTBD.
S27. Plots showing the relationships between $k_{\text{ET}}$ and $1/n^4$ for ANTBD.