Electronic Supplementary Material (ESI) for Physical Chemistry Chemical Physics

Supporting Information for:

Single Molecule Studies of Calix[4]arene-linked Perylene Bisimide Dimers: Relationship between blinking, lifetime and/or spectral fluctuations

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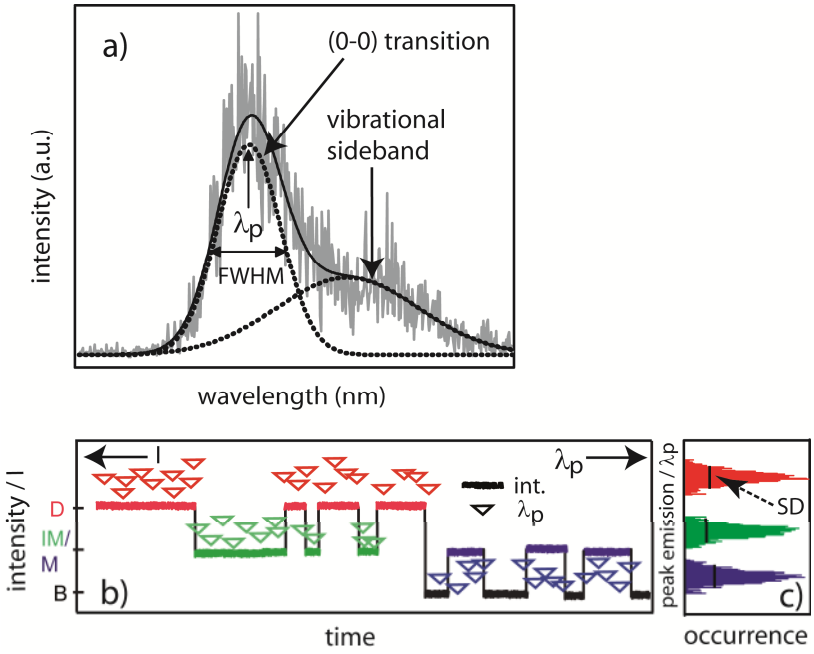

Figure S1: a) Parameters retrieved from the emission spectra. The emission spectrum (gray line) is fitted with the sum of two Gaussians (solid line). The individual Gaussian fits assigned to the (0-0) transition and the vibrational sideband are represented as dotted lines. Peak emission wavelength (λ_p) and the emission bandwidth of the (0-0) transition (FWHM) are shown. b) Schematic representation of an intensity trajectory showing the dimer level D (red), the intermediate level IM (green), the monomer level M (blue) and the background level B (black). The open triangles represent λ_p at different signal levels. Shifts of λ_p at different signal levels are exaggerated for clarity. c) Distributions of λ_p in the different signal levels. The standard deviation of the distribution of λ_p for a given signal level SD^{level} (solid line) is taken to determine $\delta E^{(level)}$.

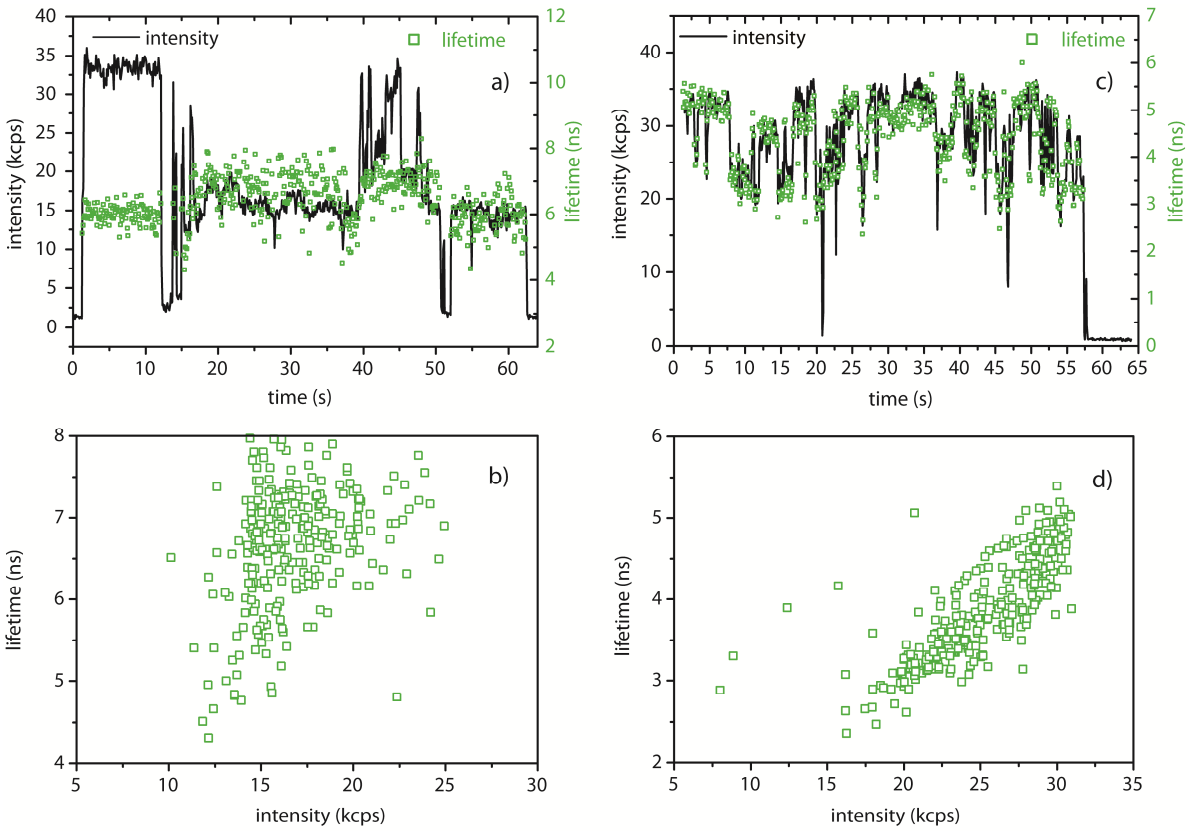

Figure S2: a, c) Intensity (black) and lifetime (green) trajectories for two dimer molecules that feature type 2 blinking behaviour and exhibit continuous fluctuations of their fluorescence signal and lifetime in the intermediate level. The corresponding correlations between intensity and lifetime in the IM level are visualised in b) and d).

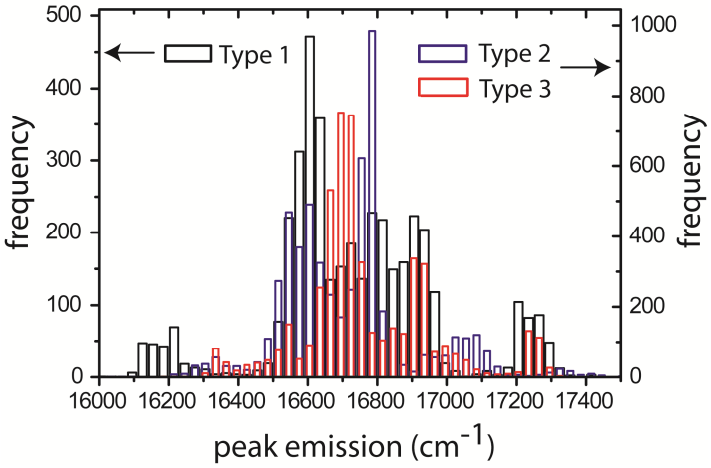

Figure S3: Distribution of the (0-0) peak positions of the emission for all individual spectra from all dimers studied for type 1 (black open bars), type 2 (blue open bars) and type 3 (red open bars).