

Supporting information

Intramolecular and Intermolecular Interaction Switching in the Aggregates of Perylene Diimide Trimer: Effect of Hydrophobicity

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The fluorescence lifetime in Figure S1 is obtained by single exponential fitting in equation 1:

$$F(t) = A \cdot e^{-\frac{t}{\tau}} \quad (1)$$

where A is the amplitude of the fluorescence intensity. τ is the lifetime that we can finally get.

Using the Glotaran program¹, we performed global and target analysis (GTA) by inserting our target model into the program. The model is expressed in equation 2:

$$\psi(\lambda, t) = \sum_{l=1}^{n_{comp}} C_l(t) \cdot S_l(\lambda) \quad (2)$$

Where $C_l(t)$ and $S_l(\lambda)$ are unknown concentration profile and spectrum of components l , respectively. The species-associated decay spectra and concentration in Figures S2 and S3 are obtained from global and target analysis.

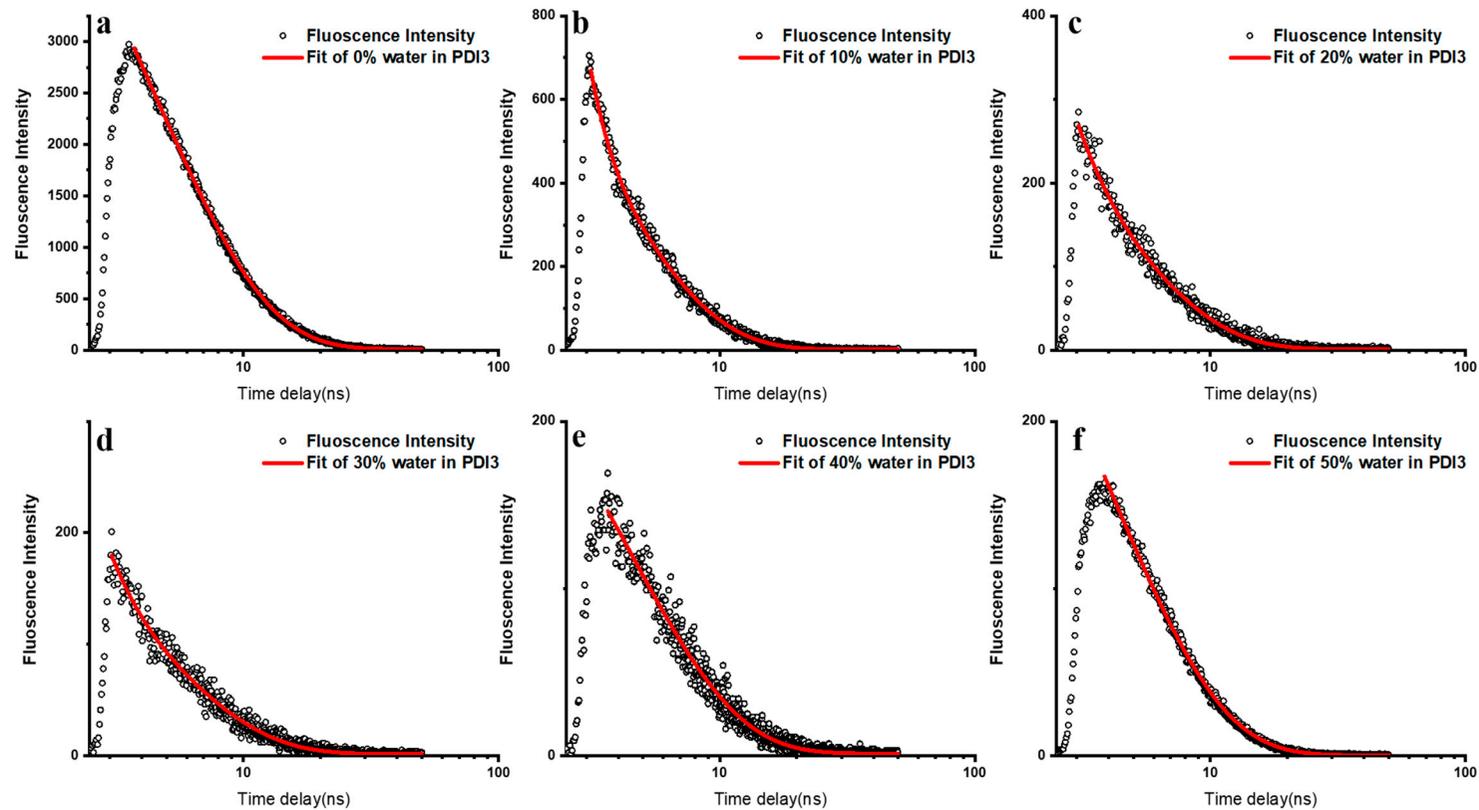


Figure S1. The fluorescence lifetime fitting of PDI trimer solutions with 480nm excitation when different percentages of water added: a:0%; b:10%; c:20%; d:30%; e:40%; f:50%.

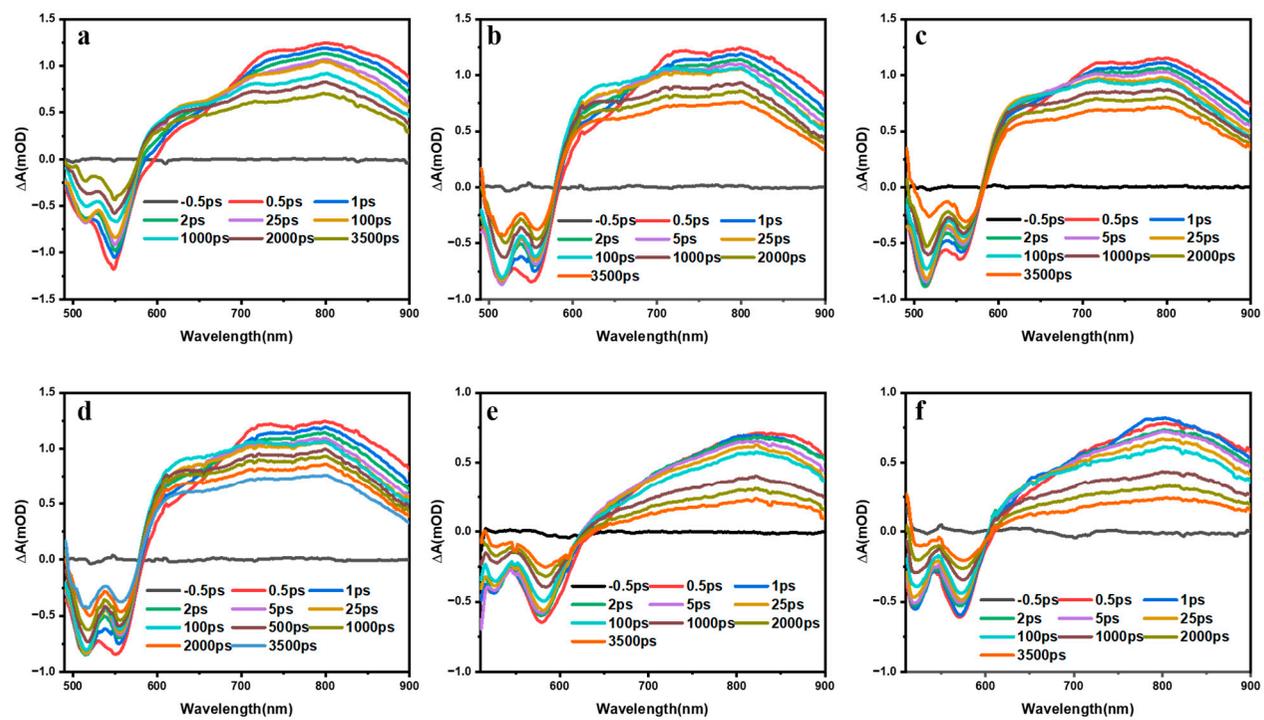


Figure S2. The transient absorption spectra of the PDI trimmer at all time delays with different water percentages: a:0%; b:10%; c:20%; d:30%; e:40%; f:50%.

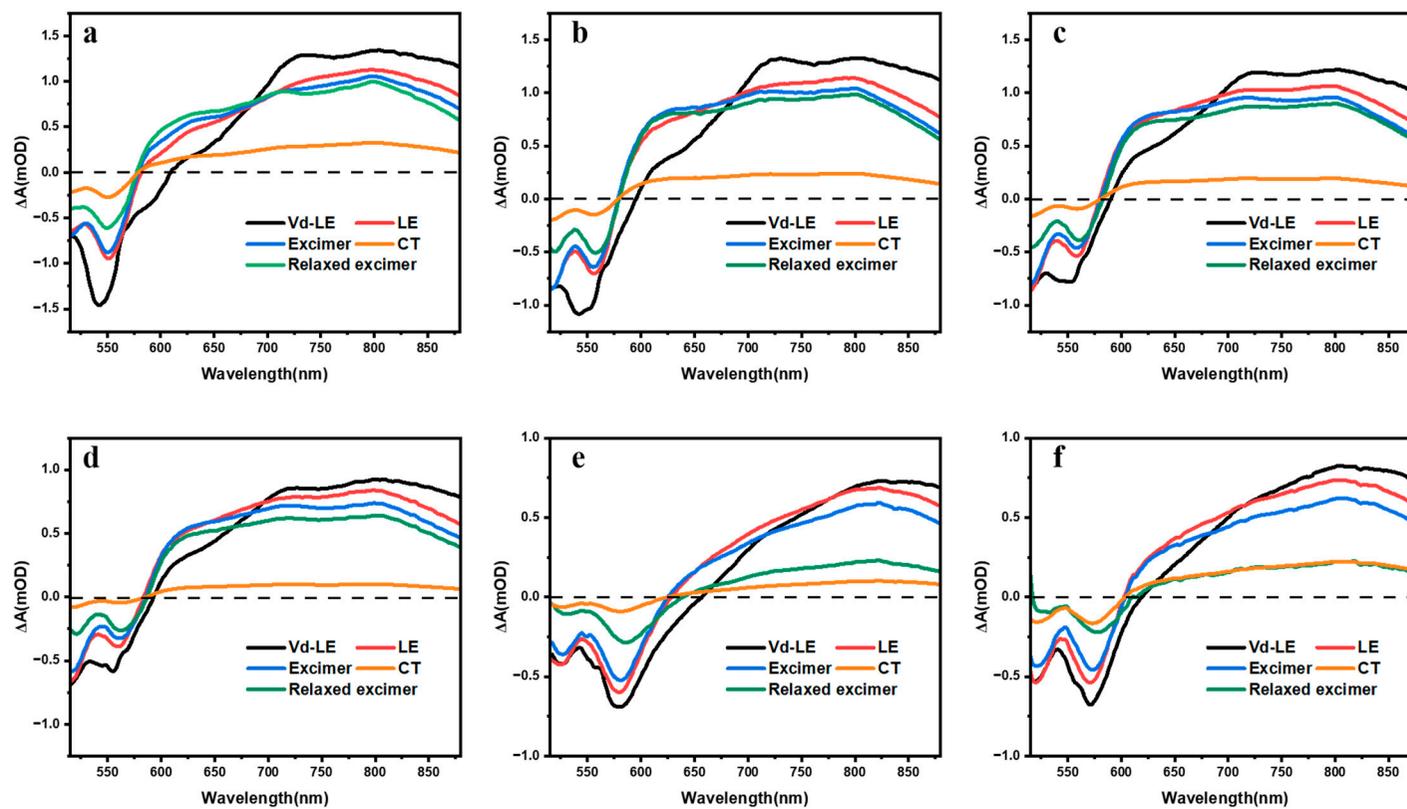


Figure S3. SADS data of different species with different water percentages: a:0%; b:10%; c:20%; d:30%; e:40%; f:50%.

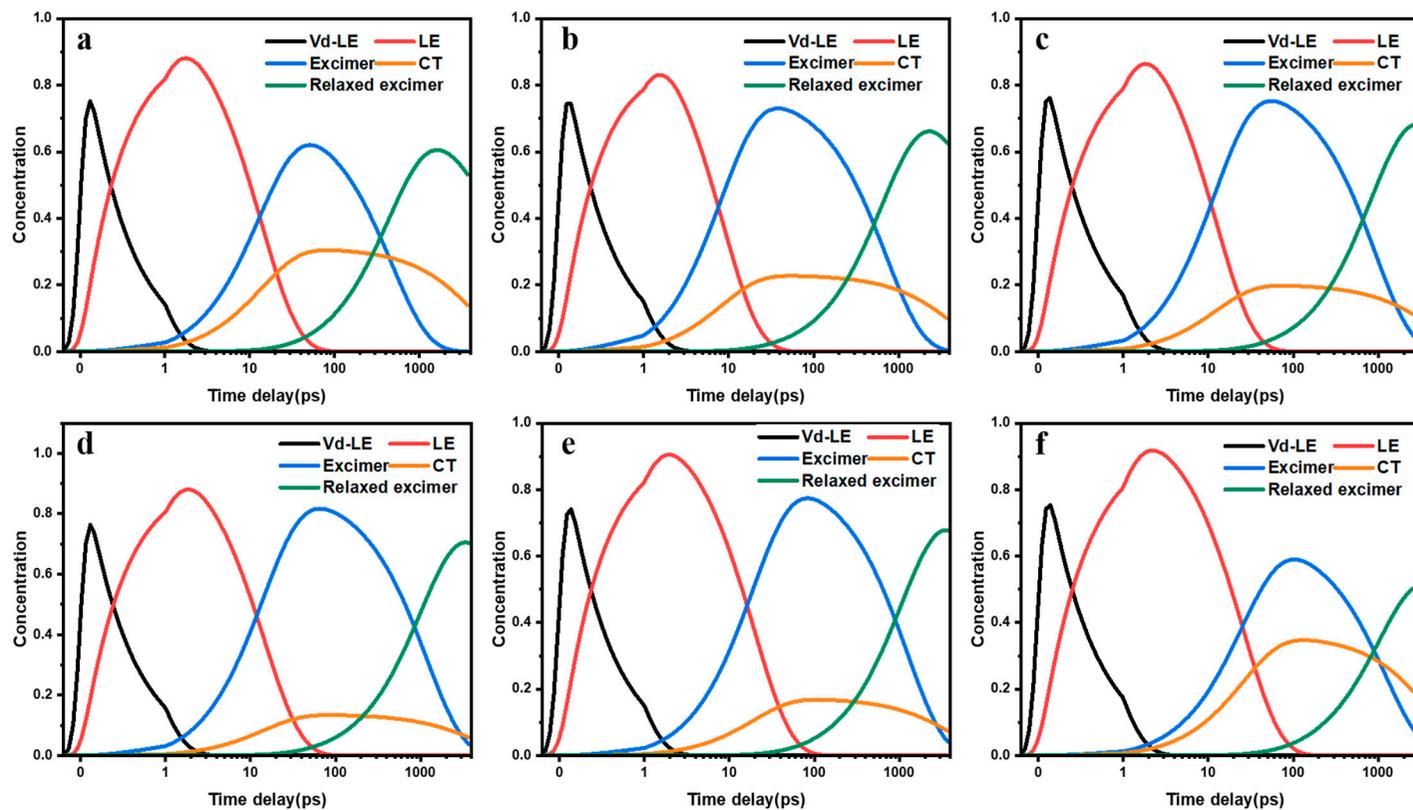


Figure S4. The concentration variations of corresponding processes when different water percentages: a:0%; b:10%; c:20%; d:30%; e:40%; f:50%.