

**a**

**c**



**b**

**d**

**e**

**f**

Figure X. Transient absorption spectra and corresponding decay curves of compound **1** (a, d), **2** (b, e) and **3** (c, f) in THF.

Femtosecond transient absorption spectra with 400nm excitation were recorded in THF to study the excited-state photo-physical dynamics of compound **1**, **2** and **3.** As shown in Figure X, compound 1 exhibited two ground-state bleaching (GSB) signals around 480 nm and 520 nm as well as one weak excited-state absorption (ESA) band in 430 nm to 470 nm and one intense ESA band in 550 nm to 750 nm. Compound **2** showed a similar GSB signals with compound **1** around 530 nm and 570 nm, while two intense ESA bands appeared in 430 nm to 500 nm and 590 nm to 650 nm. As for compound **3**, which has a sharp contrast with compound **1** though it can be seen as a dimer of compound **1**, three GSB signals were observed around 460 nm, 490 nm and 530 nm together with an intense ESA band in 560 nm to 750 nm. Those differences in GSB signals and ESA bands are thought to reflect their distinguished electronic configurations arising from different topologies. Furthermore, the singlet excited-state lifetimes of compound **1**, **2** and **3** were also estimated (Figure X c-f) to be 15, 12 and 10 ps from decay curves, respectively, which are consistent with their non-fluorescent behavior.