***Supporting Information for***

**A Solid-State Fluorescence Switch Based on Triphenylethene Functionalized Dithienylethene with Aggregation-Induced Emission**

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**FIGURE S1.** Fatigue resistance of **1** upon alternating irradiation with 254 nm UV light and visible light at >402 nm over six cycles in DMSO (2.0 × 10-5 mol/L).



**FIGURE S2.** Fatigue resistance of **2** upon alternating irradiation with 254 nm UV light and visible light at >402 nm over six cycles in DMSO (2.0 × 10-5 mol/L).



**FIGURE S3.** Fatigue resistance of **3** upon alternating irradiation with 254 nm UV light and visible light at >402 nm over six cycles in DMSO (2.0 × 10-5 mol/L).

**Appendix: NMR and Mass spectra**



**FIGURE S4**.400 MHz1H NMR spectrum of dithienylethene **1** in CDCl3 at room temperature.



**FIGURE S5**. 100 MHz13C NMR spectrum of dithienylethene **1** in CDCl3 at room temperature.



**FIGURE S6**.HRMS of dithienylethene **1** at room temperature.



**FIGURE S7**.400 MHz1H NMR spectrum of dithienylethene **2** in CDCl3 at room temperature.



**FIGURE S8**.100 MHz13C NMR spectrum of dithienylethene **2** in CDCl3 at room temperature.



**FIGURE S9**.HRMS of dithienylethene **2** at room temperature.



**FIGURE S10**.400 MHz1H NMR spectrum of dithienylethene **3** in CDCl3 at room temperature.



**FIGURE S11**.100 MHz13C NMR spectrum of dithienylethene **3** in CDCl3 at room temperature.



**FIGURE S12**.HRMS of dithienylethene **3** at room temperature.