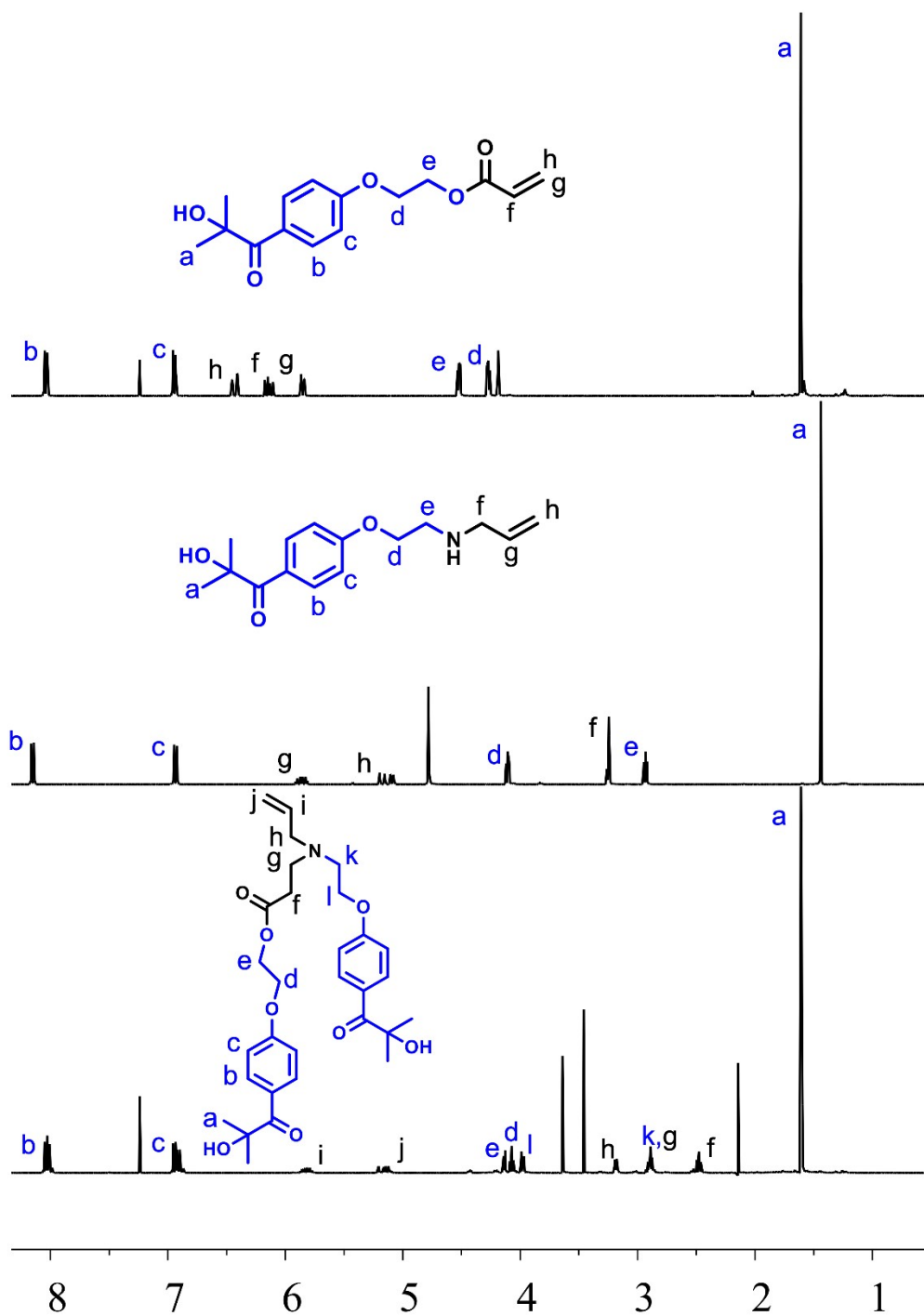


## Supporting Information

### **A cyclopolymerizable, doubly Irgacure 2959 functionalized quaternary ammonium salt photoinitiator and its water soluble copolymer with diallyldimethylammonium chloride**

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**Figure S1.** <sup>1</sup>H-NMR spectra of I2959-AC (top), I2959-AA (middle) and 2xI2959-AA (bottom).

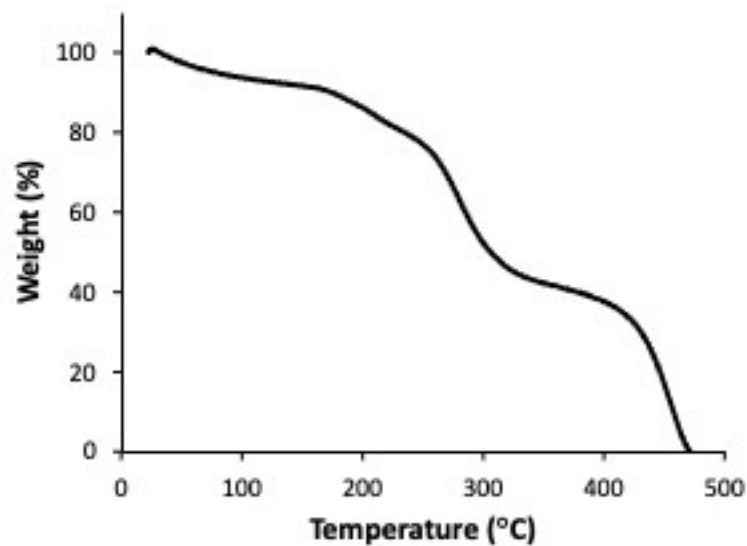


Figure S2. TGA spectrum of p-DADMAC-co-2xI2959-QS.

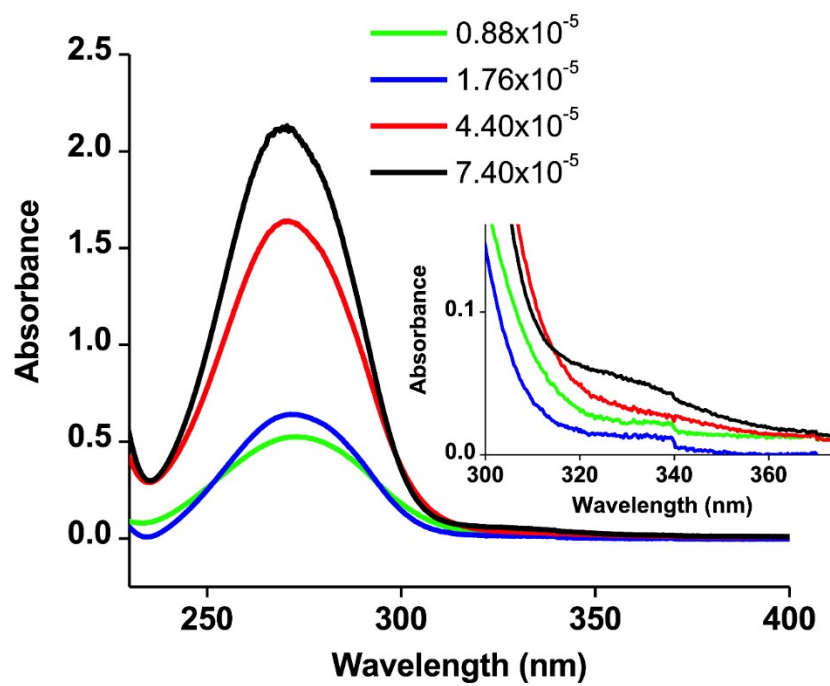
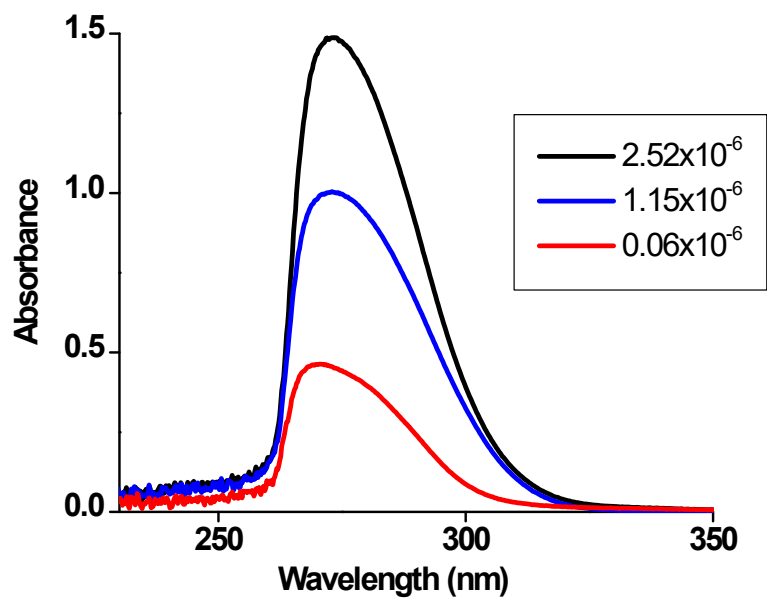
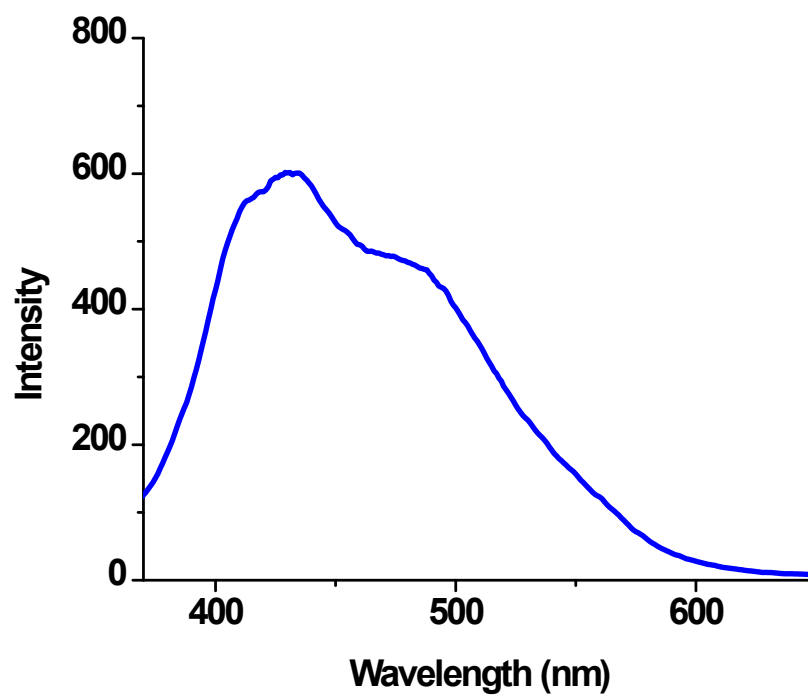


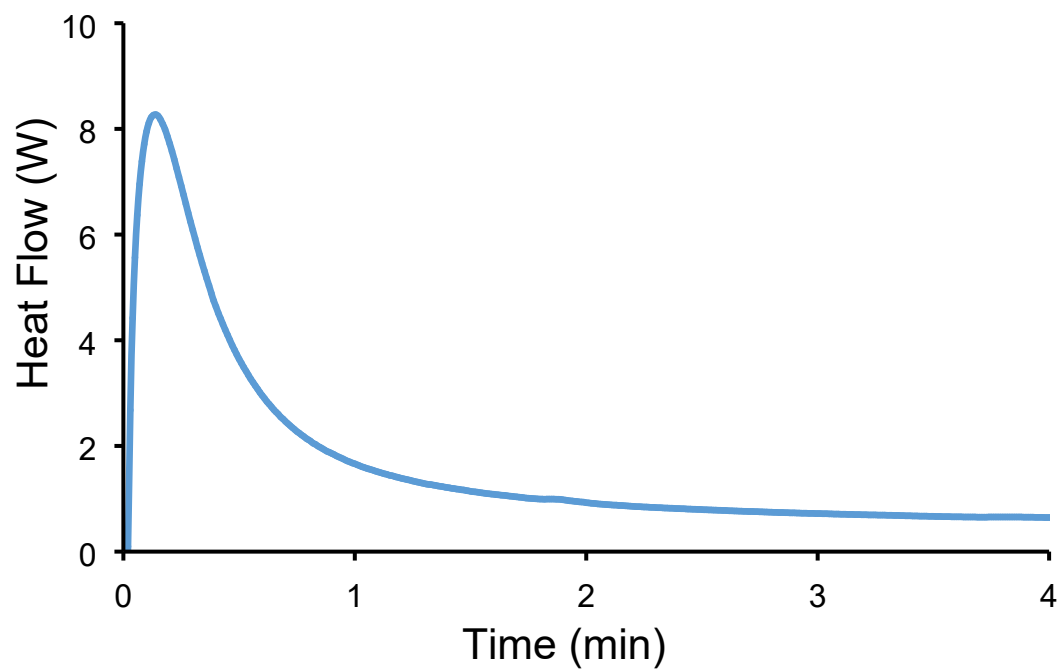
Figure S3. UV-vis absorption spectra of 2xI2959-QS in ethanol.



**Figure S4.** UV-vis absorption spectra of p-DADMAC-co-2xI2959-QS in ethanol.



**Figure S5.** The fluorescence spectrum of p-DADMAC-co-2xI2959-QS in  $\text{CH}_3\text{CN}:\text{H}_2\text{O}$  (3:7 v/v).



**Figure S6.** Heat flow-time plot for 2xI2959-QS at 40 °C under nitrogen irradiated by 320-500 nm.