Supplementary Information for:

Thermo- and Light-Regulated Fluorescence Resonance Energy Transfer Processes within Dually Responsive Microgels

Jun Yin, Haibo Hu, Yonghao Wu and Shiyong Liu*

CAS Key Laboratory of Soft Matter Chemistry, Department of Polymer Science and Engineering, Hefei National Laboratory for Physical Sciences at the Microscale, University of Science and Technology of China, Hefei, Anhui 230026, China. E-mail: sliu@ustc.edu.cn; Fax: +86-551-360-7348; Tel: +86-551-360-7348

***** To whom correspondence should be addressed. E-mail: sliu@ustc.edu.cn

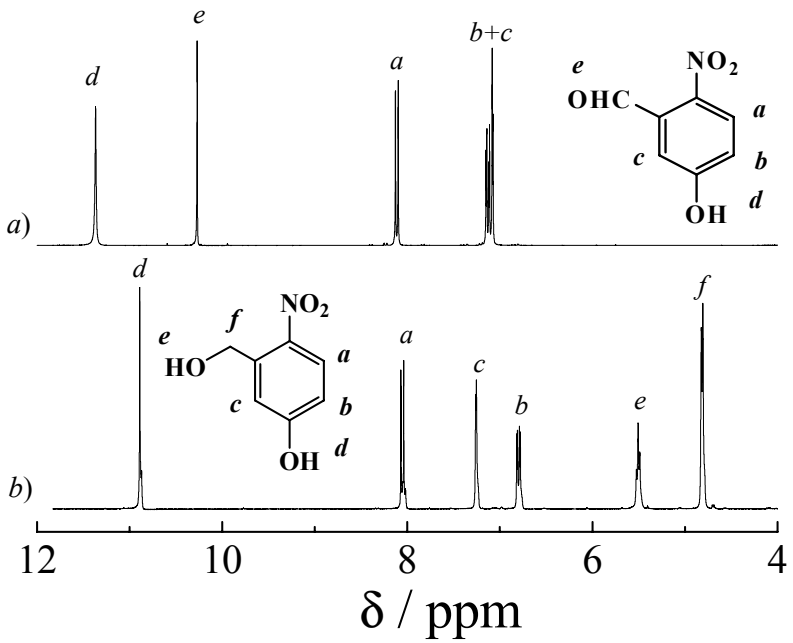

Fig. S1. ^{1}H NMR spectra recorded in DMSO-d_6 for (a) 5-hydroxy-2-nitrobenzaldehyde (**1**) and (b) 5-hydroxy-2-nitrobenzyl alcohol (**2**).

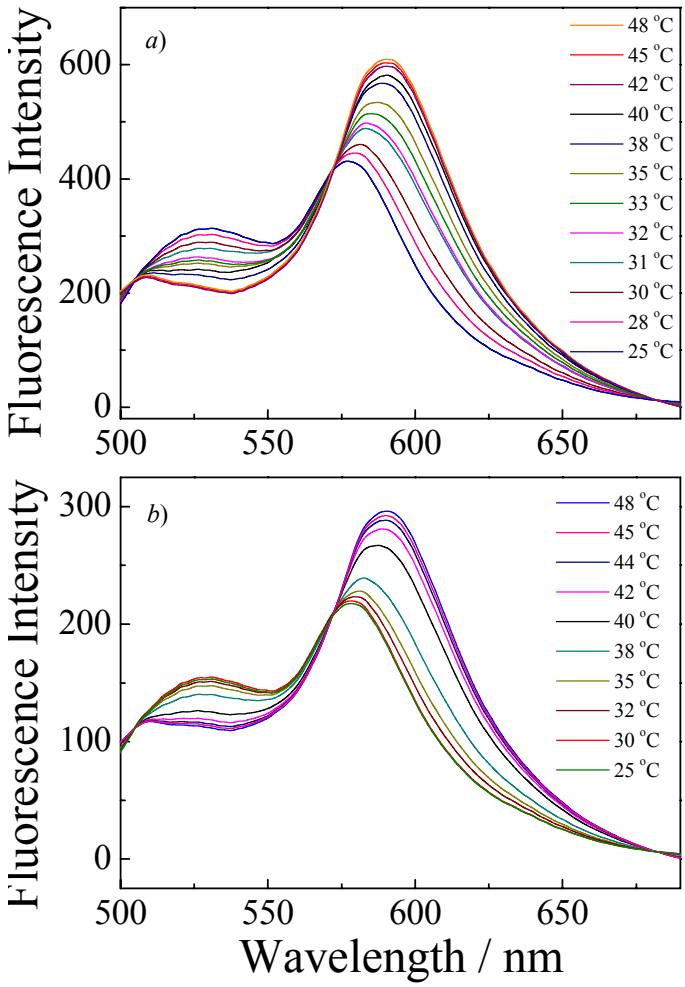

Fig. S2. Fluorescence emission spectra (λ_{ex} = 470 nm; slit widths: Ex. 5 nm, Em. 5 nm) recorded at varying temperatures for P(NIPAM-DMNA-NBDAE-RhBEA) microgel dispersions (pH 8.5, 1.0 × 10^{-5} g/mL; microgels were prepared with a DMNA feed ratio of 15.0 wt%) (a) before and (b) after UV irradiation (365 nm) for 30 min.

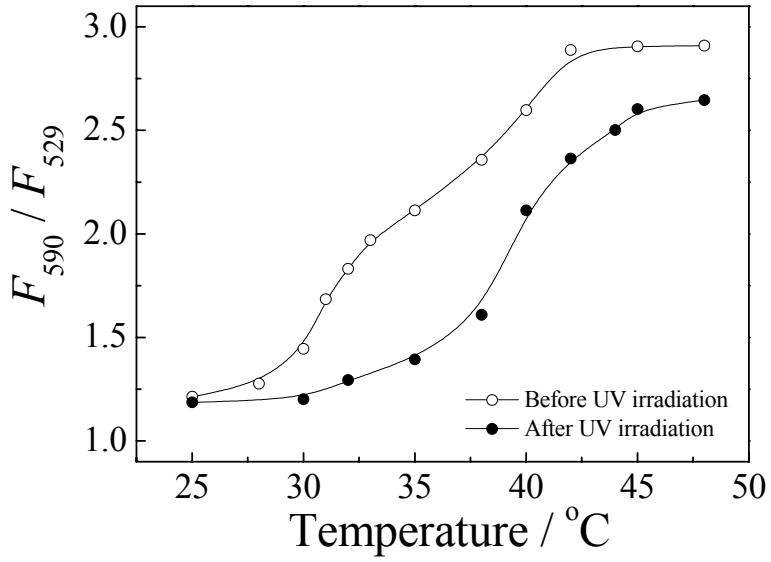

Fig. S3. Temperature-dependent fluorescence intensity ratio changes, F_{590}/F_{529}, obtained for P(NIPAM-DMNA-NBDAE-RhBEA) microgel dispersions (pH 8.5, 1.0×10^{-5} g/mL; microgels were prepared with a DMNA feed ratio of 15.0 wt%) before and after UV irradiation (365 nm) for 30 min.

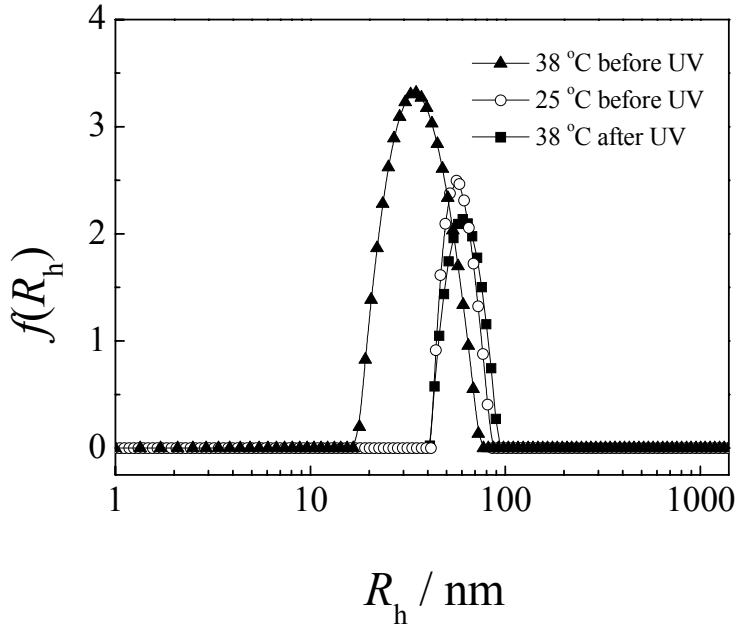

Fig. S4. Typical hydrodynamic radius distributions, $f(R_h)$, of P(NIPAM-DMNA-NBDAE-RhBEA) microgels (20.0 wt% DMNA feed content) (○) at 25 °C before UV irradiation and at 38 °C (■) before and (●) after UV irradiation for 30 min, respectively.