Electronic Supplementary Material (ESI) for Journal of Materials Chemistry C.

Supporting Information

Lanthanide Based White-Light-Emitting Hydrogel Mediated by Fluorescein and Carbon Dots with High Quantum Yield and Multi-stimuli Responsiveness

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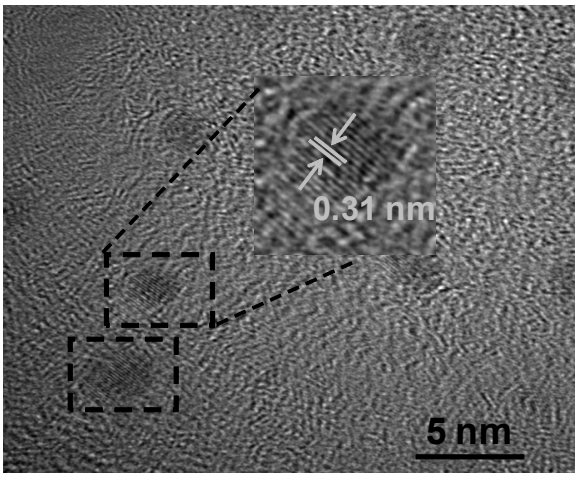

Figure S1. TEM and HRTEM (inserted) images of CDs.

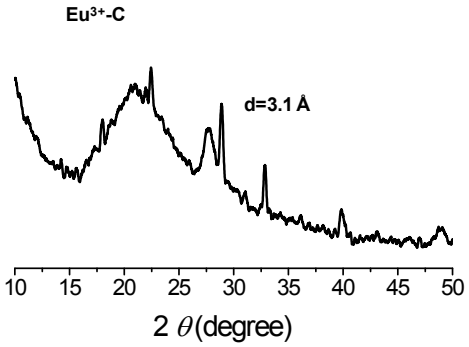

Figure S2. PXRD pattern of Eu^{3+}-C complex.

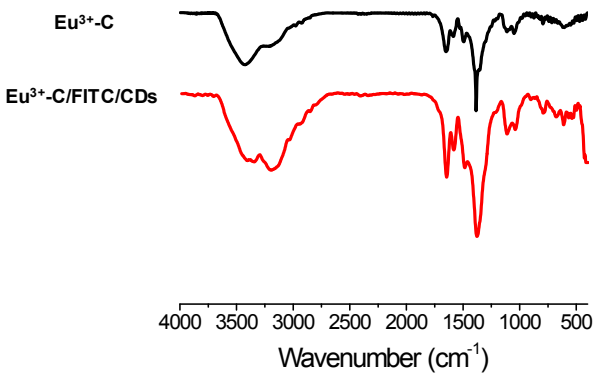

Figure S3. FTIR spectra of Eu^{3+}-C complex and Eu^{3+}-C/FITC/CDs hydrogel.

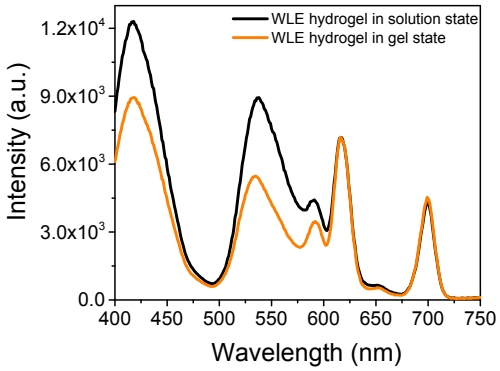

Figure S4. Fluorescence emission spectra of WLE hydrogel in solution and gel states.

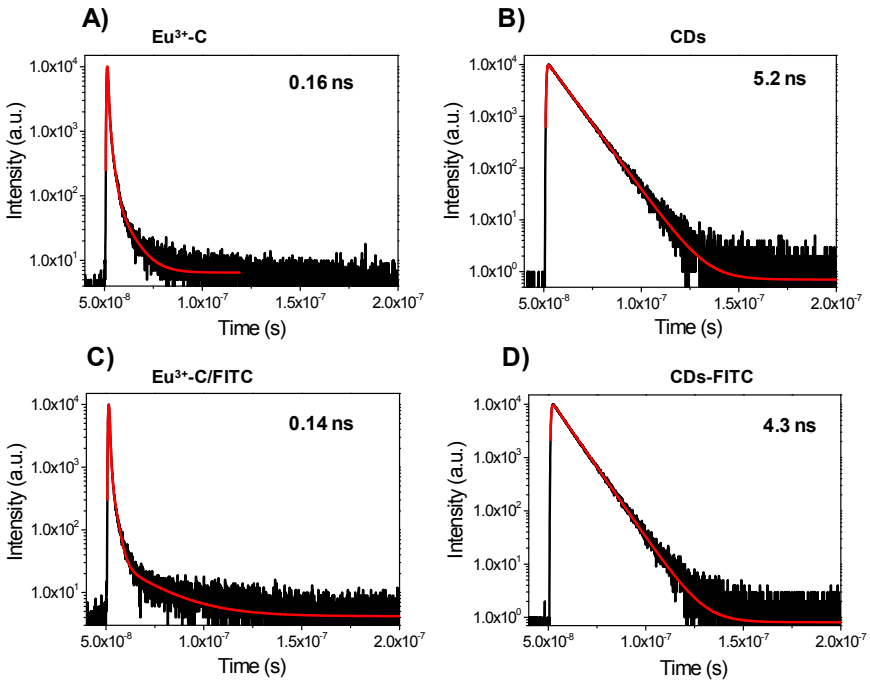

Figure S5. Fluorescent decay curves of Eu^{3+}-C and CDs in the absence (A, B) and presence (C, D) of FITC at emission wavelength 417 nm.

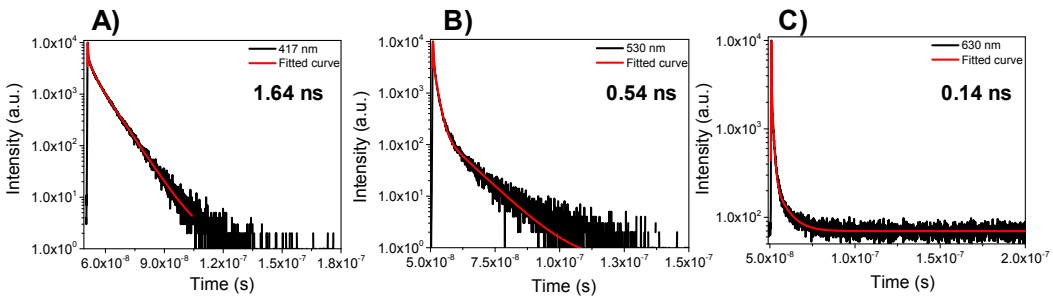

Figure S6. Fluorescent decay and fitted curves of WLE hydrogel at emission wavelength 417 nm (a), 530 nm (b) and 630 nm (c).

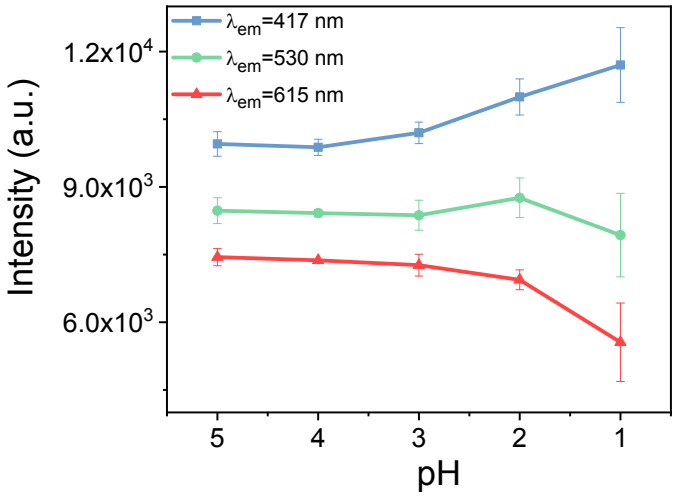

Figure S7. Concentration dependence behaviors of WLE hydrogel upon pH.

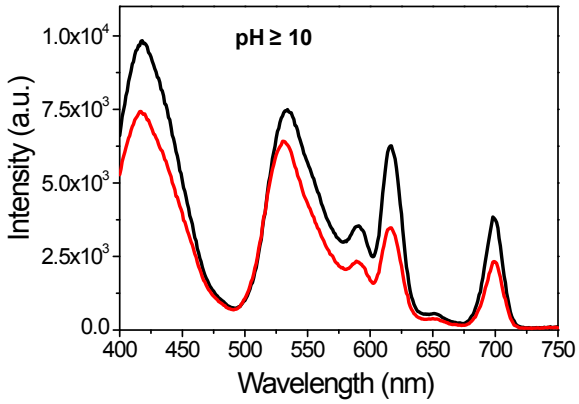

Figure S8. Fluorescent emission spectra of WLE hydrogel under neutral (pH = 7) and alkaline (pH ≥ 10) conditions.

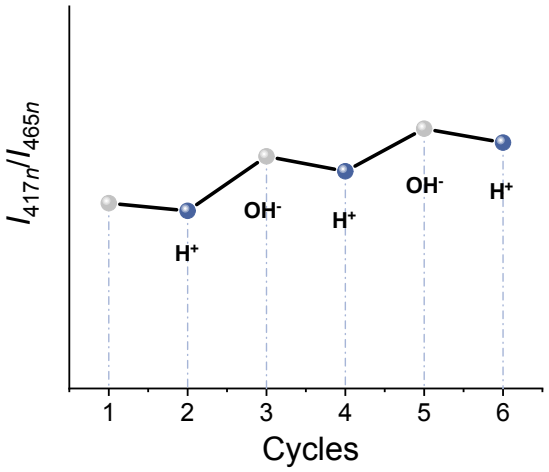

Figure S9. The cyclic responsiveness of WLE hydrogel upon pH. The change of I_{417n}/I_{465n} within three consecutive cycles of WLE hydrogel in the presence of H^+ (pH=1). *n* represents the number of measurements.

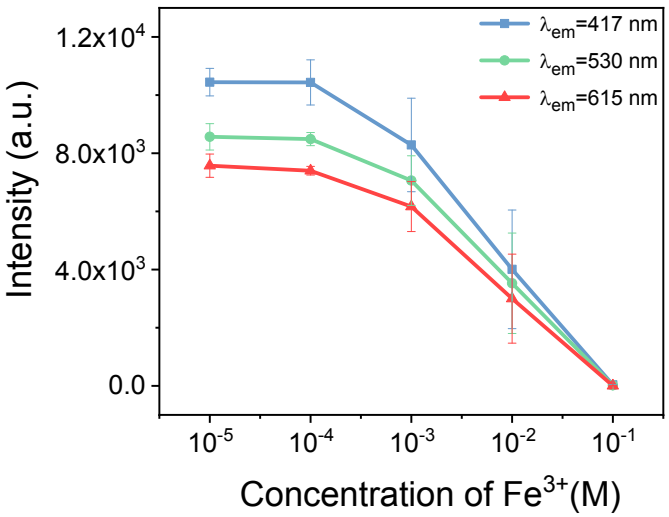

Figure S10. Concentration dependence behaviors of WLE hydrogel upon Fe^{3+}.

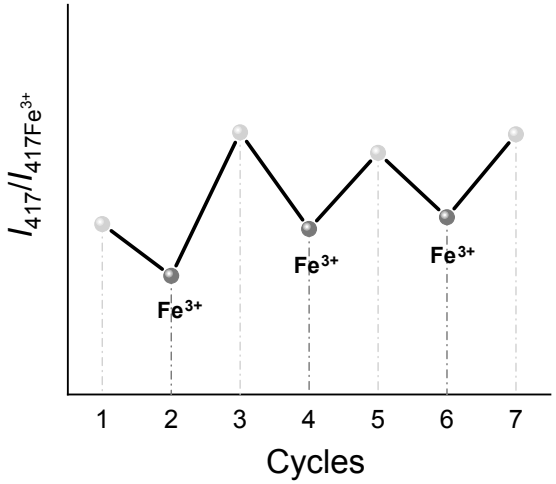

Figure S11. The cyclic responsiveness of WLE hydrogel upon Fe^{3+}. The change of $I_{417}/I_{417Fe^{3+}}$ within three consecutive cycles of WLE hydrogel in the presence of Fe^{3+} (10 mM).

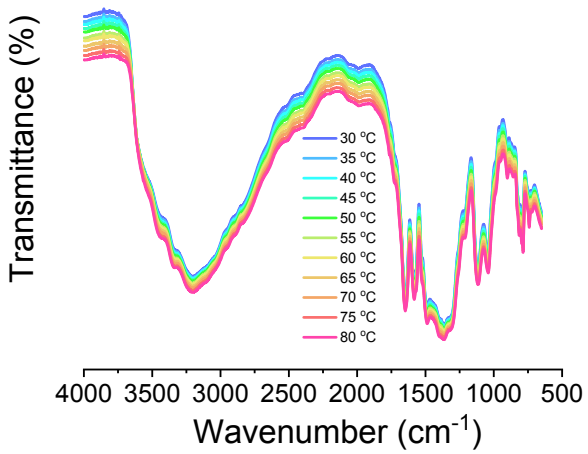

Figure S12. Temperature-varying FTIR of WLE hydrogel with temperature range from 30 to 80°C.

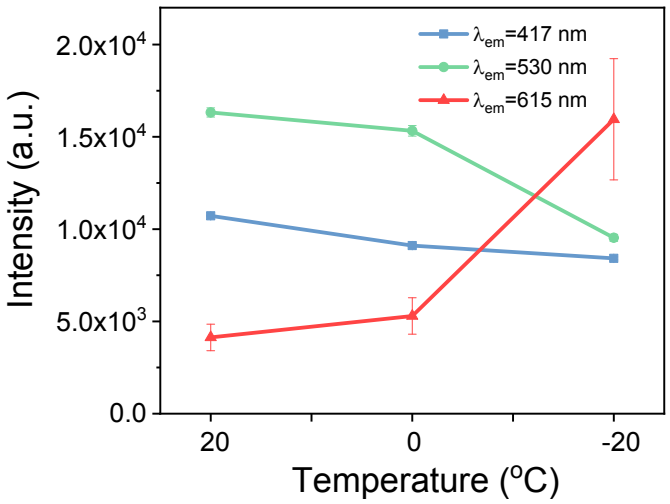

Figure S13. Temperature dependence behaviors of WLE hydrogel.

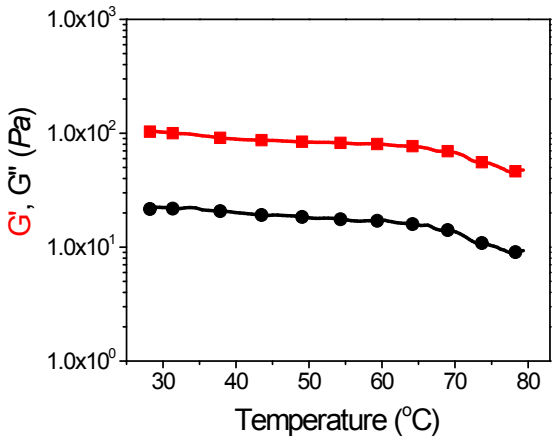

Figure S14. Storage modulus G' (red solid squares) and loss modulus G'' (black solid circles) versus temperature of WLE hydrogel

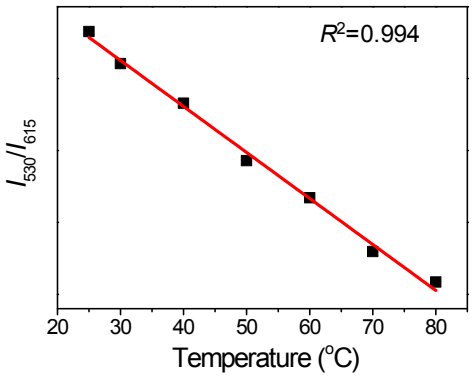

Figure S15. Relationship between the temperature and the intensity of green-to-red emission ratio (I_{530} /I_{615}).