

Supplementary Information

Thermo- and redox-responsive dendronized polymer hydrogels

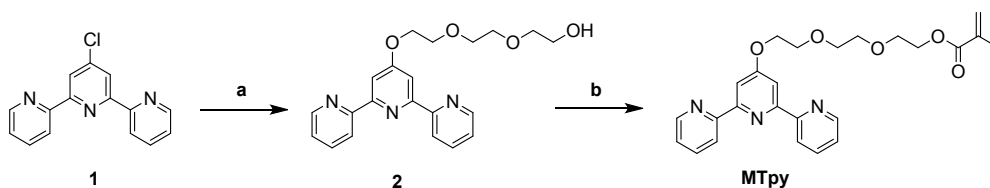
Xiacong Zhang,^a Yu Yin,^a Jiatao Yan,^a Wen Li ^{*a,b} and Afang Zhang^a

^a. Laboratory of Polymer Chemistry, Department of Polymer Materials, College of Materials Science and Engineering, Shanghai University, Materials Building Room 801, Nanchen Street 333, Shanghai 200444, China. Phone: +86-21-66138044. Fax: +86-21-66131720.
E-mail: wli@shu.edu.cn

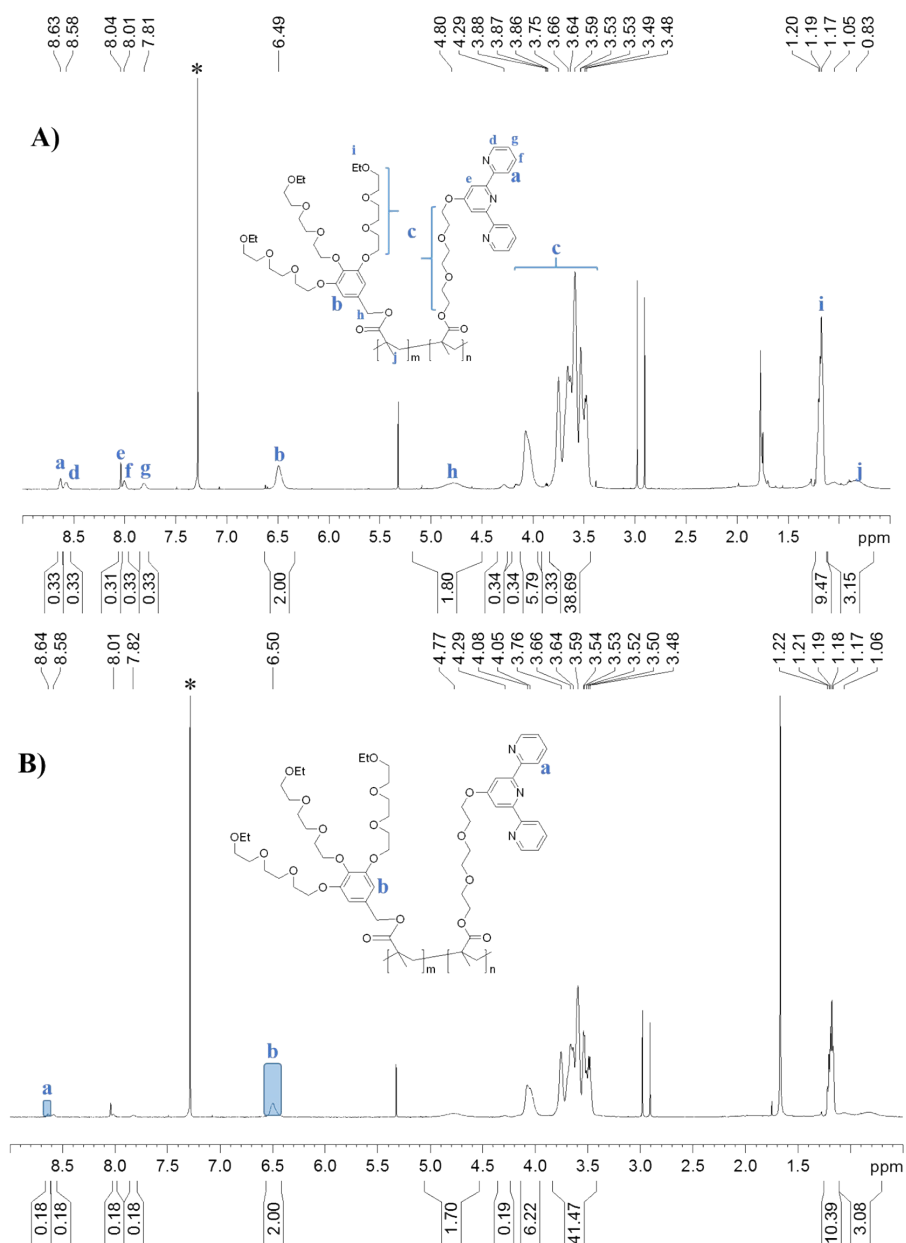
^b. School of Engineering and Applied Sciences, Department of Physics, Harvard University, 29 Oxford Street, Cambridge, MA 02138, USA.

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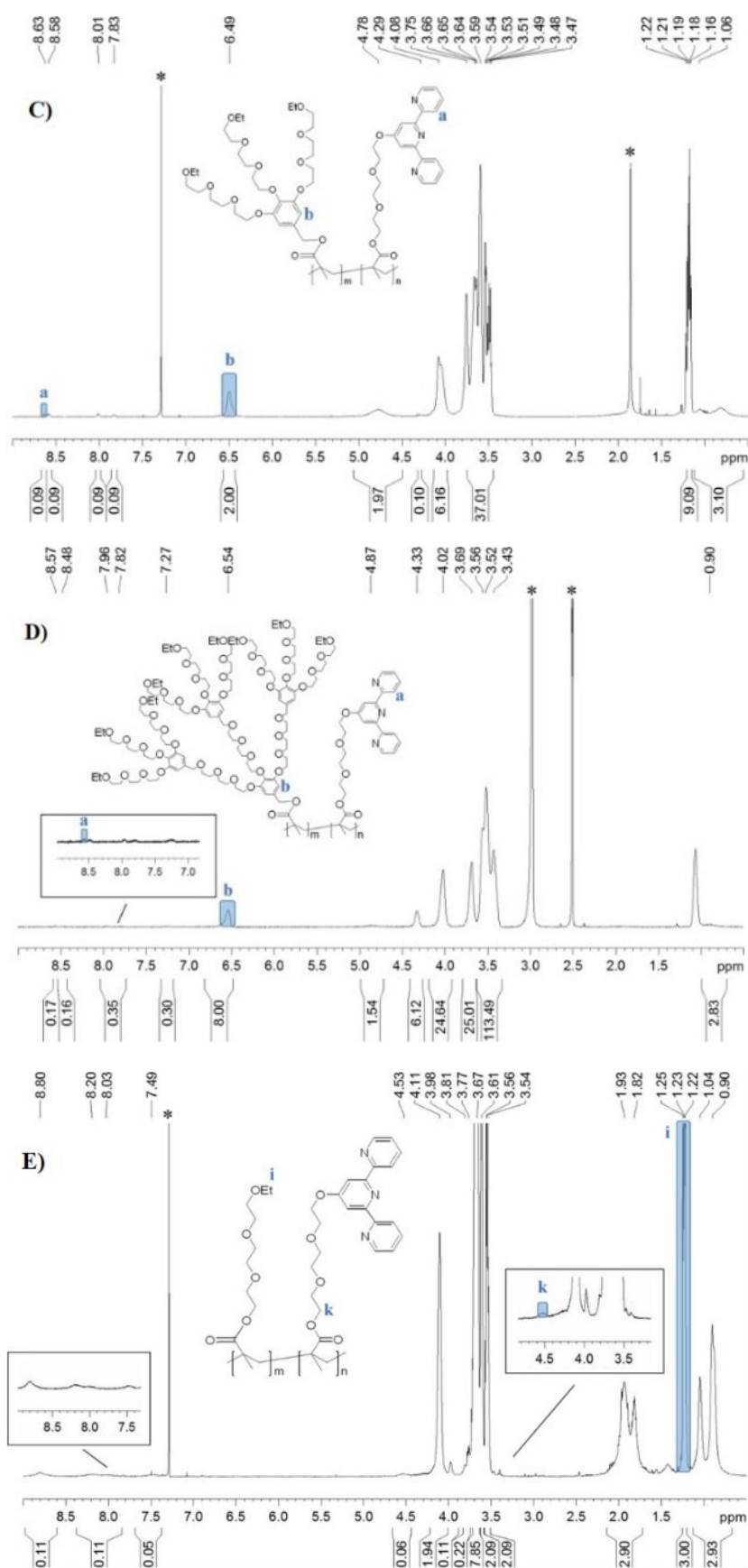


Fig. S1 1H NMR spectra of copolymers: A) $P(G1_{0.86}Tpy_{0.14})$, B) $P(G1_{0.92}Tpy_{0.08})$, C) $P(G1_{0.96}Tpy_{0.04})$ in $CDCl_3$, D) $P(G2_{0.75}Tpy_{0.25})$ in $DMSO-d_6$ and E) $P(G0_{0.97}Tpy_{0.03})$ in

CDCl_3 .

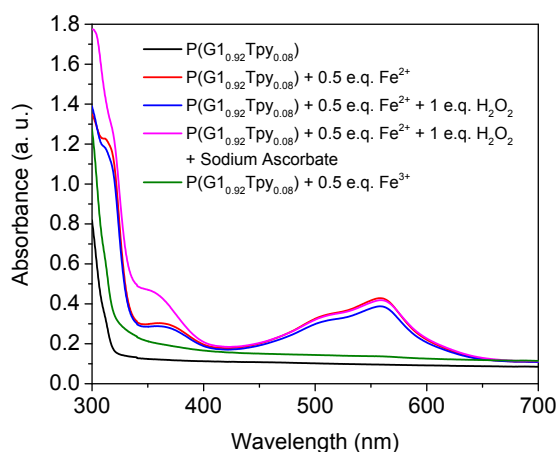


Fig. S2 UV-vis spectra of **P(G1_{0.92}Tpy_{0.08})** and **P(G1_{0.92}Tpy_{0.08})** by addition of Fe^{2+} with $[\text{Tpy}]/[\text{Fe}^{2+}] = 2: 1$ in aqueous solutions, after addition of H_2O_2 , further addition of excess sodium ascorbate, and **P(G1_{0.92}Tpy_{0.08})** in the presence of Fe^{3+} with $[\text{Tpy}]/[\text{Fe}^{3+}] = 2: 1$ in aqueous solutions.



Fig. S3 Photographs of (a) **P(G1_{0.92}Tpy_{0.08})** with addition of Fe^{2+} in different concentration aqueous solutions, and (b) **PG2_{0.75}Tpy_{0.25}** with addition of Fe^{2+} .

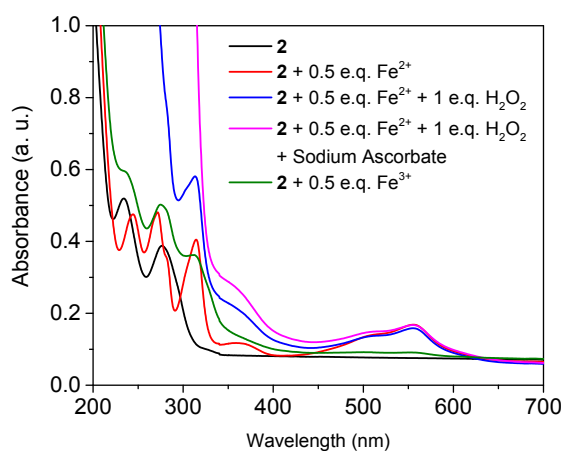


Fig. S4 UV-vis spectra of **2** and **2** in the presence of Fe^{2+} with $[\mathbf{2}]/[\text{Fe}^{2+}] = 2: 1$ in aqueous solutions, addition of H_2O_2 , further addition of excess amount of sodium ascorbate, and **2** in the presence of Fe^{3+} with $[\mathbf{2}]/[\text{Fe}^{3+}] = 2: 1$ in aqueous solution.

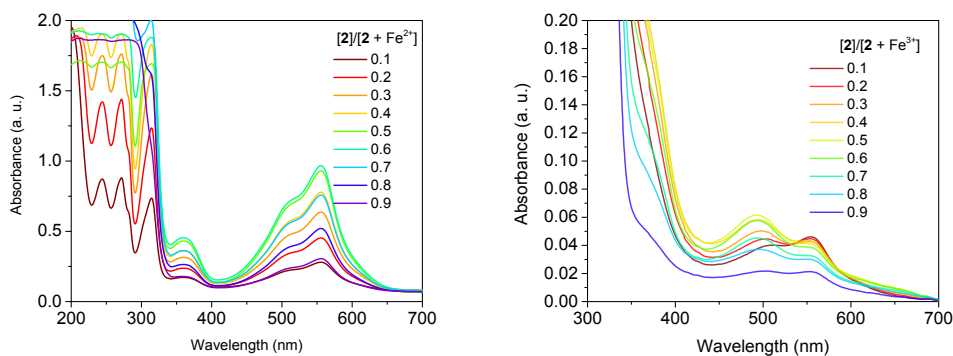


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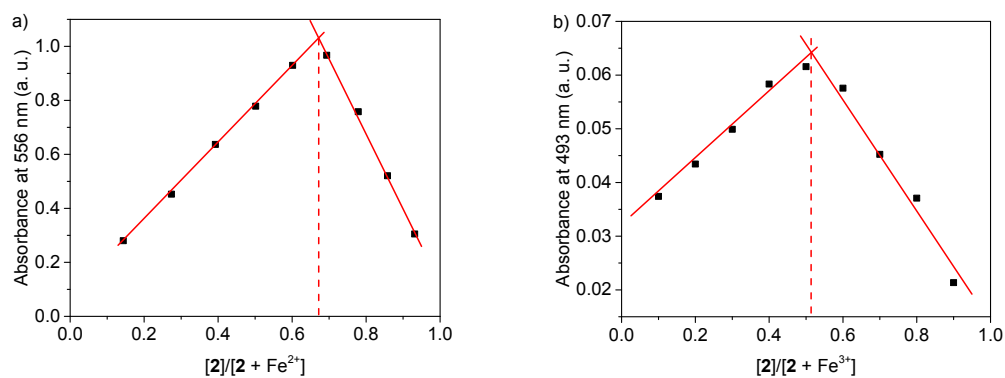


Fig. S6 Job's plots from complexation of **2** with Fe^{2+} (a) and Fe^{3+} (b).

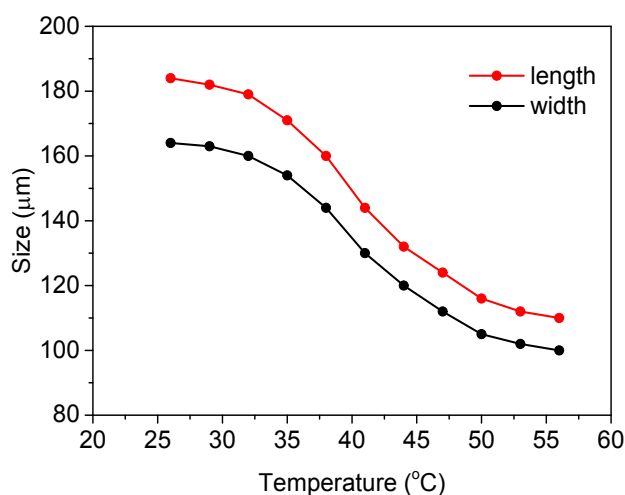


Fig. S7 Change of lengths and widths of hydrogels with temperature from $\text{P}(\text{G1}_{0.92}\text{Tpy}_{0.08})$.

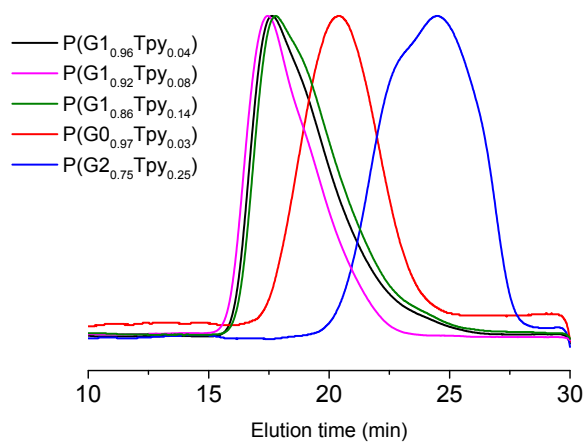


Fig. S8 Normalized refractive index traces from gel permeation chromatography of copolymers.

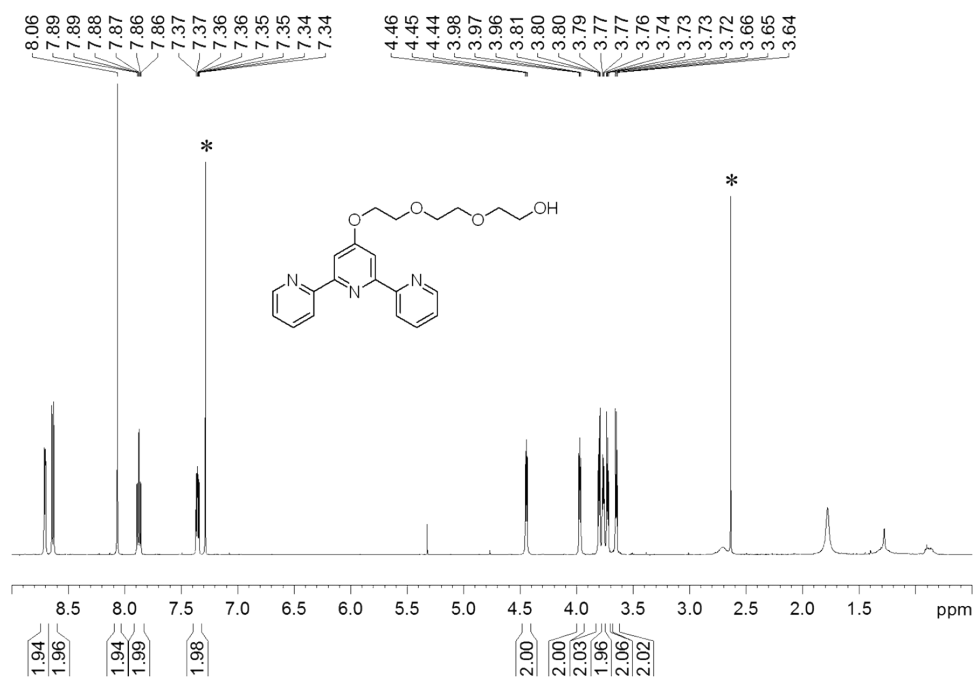


Fig. S9 1H NMR spectrum of compound **2** in $CDCl_3$.

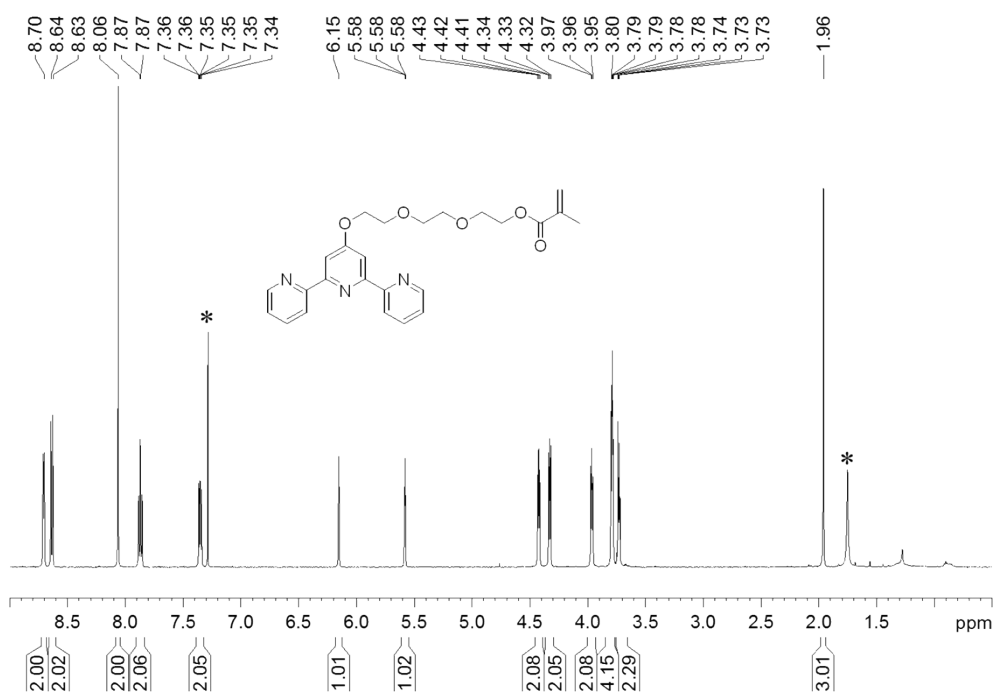


Fig. S10 ¹H NMR spectrum of compound **MTpy** in CDCl₃.