Supplementary Material (ESI) for New Journal of Chemistry

Electronic Supplementary Information (ESI)

Fluorescence enhancement of a tetrazole-based pyridine coordination polymer hydrogel

Ji Ha Lee,[a] Hyejin Lee,[a] Sungmin Seo,[a] Justyn Jaworski,[a] Moo Lyong Seo,[a] Sunwoo Kang,[b] Jin Yong Lee,*[b] and Jong Hwa Jung*[a]

[a] Department of Chemistry and Research Institute of Natural Science, Gyeongsang National University, Jinju 660-701 (Korea); E-mail: jonghwa@gnu.ac.kr

[b] Department of Chemistry and Institute of Basic Science Sungkyunkwan University, Suwon 440-746, Korea ; E-mail : jinylee@skks.edu

Fig. S1 Photograph of hydrogel **2** (20 mM) with Mg^{2+} (4 equiv) at pH= 12.

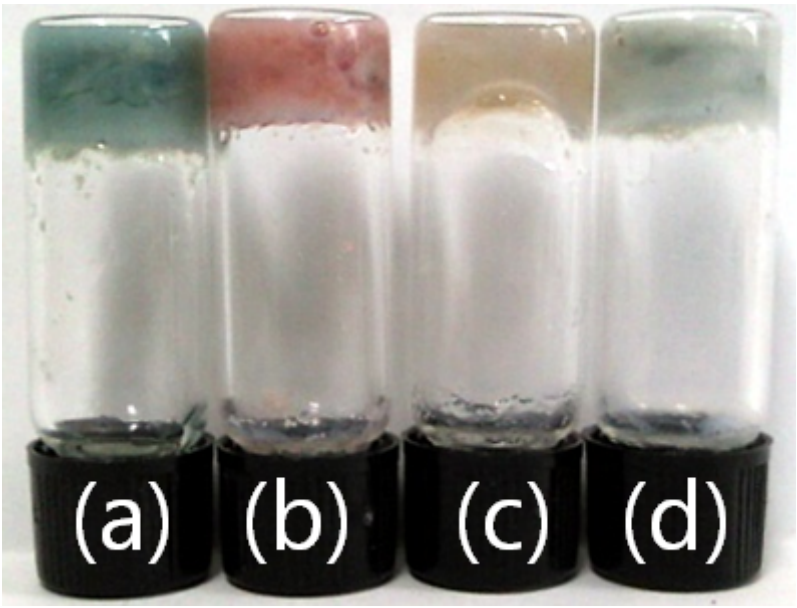

Fig. S2 Photograph of hydrogels **1** (20 mM) with (a) Cu^{2+}, (b) Co^{2+}, (c) Zn^{2+} and (d) Ni^{2+} ions at pH=12.

A) B)

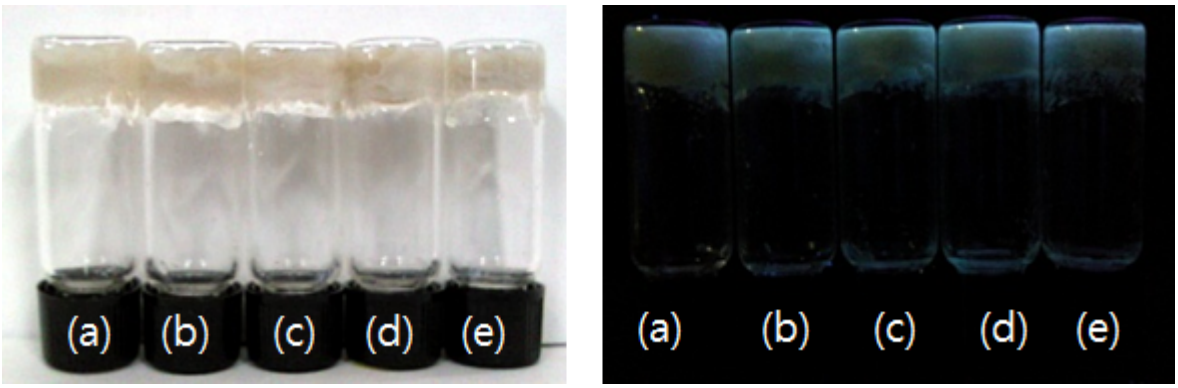

Fig. S3 Photographs of hydrogels **1** (20 mM) in the presence of magnesium anions (4 equiv) (a) NO_3^-, (b) Br^-, (c) SO_4^{2-}, (d) Cl^- and (e) I^- (A) without and (B) with irradiation of UV light.

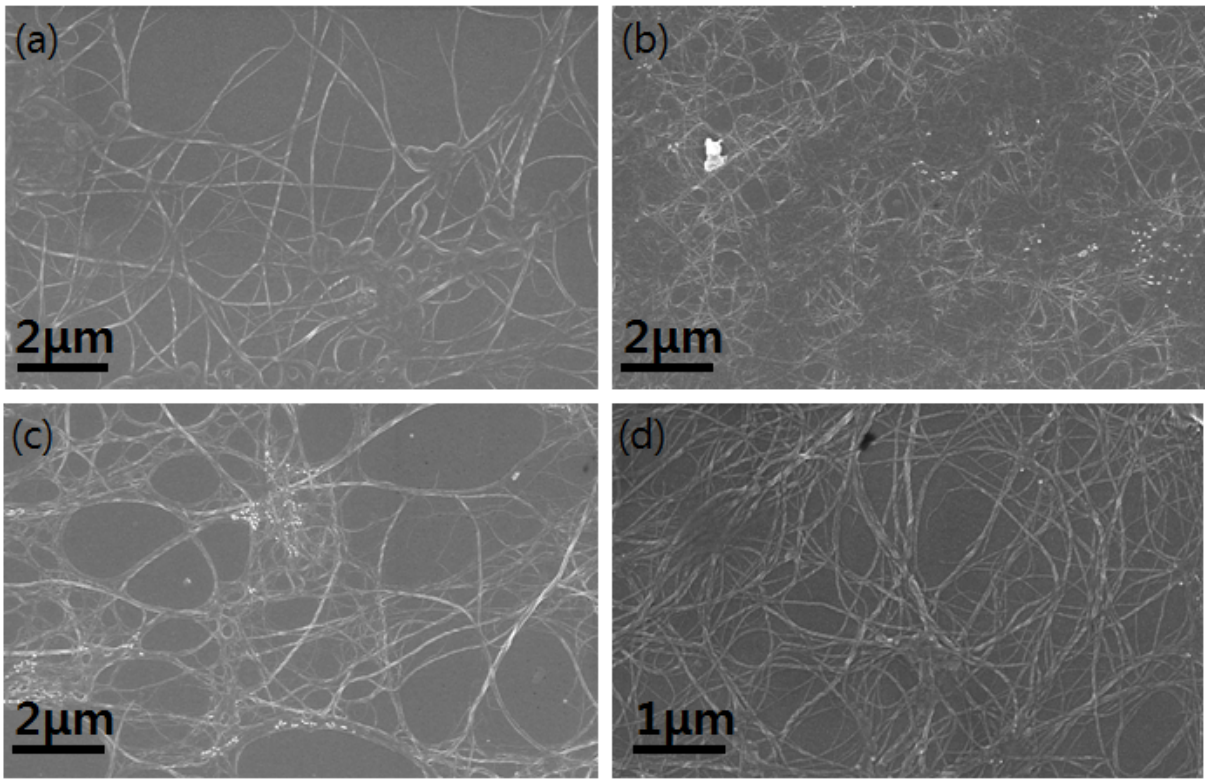

Fig. S4 SEM images of Mg^{2+} coordination polymeric gel **1** with different anions; (a) $MgSO_4$, (b) $MgBr_2$, (c) MgI_2 and (d) $Mg(NO_3)_2$.

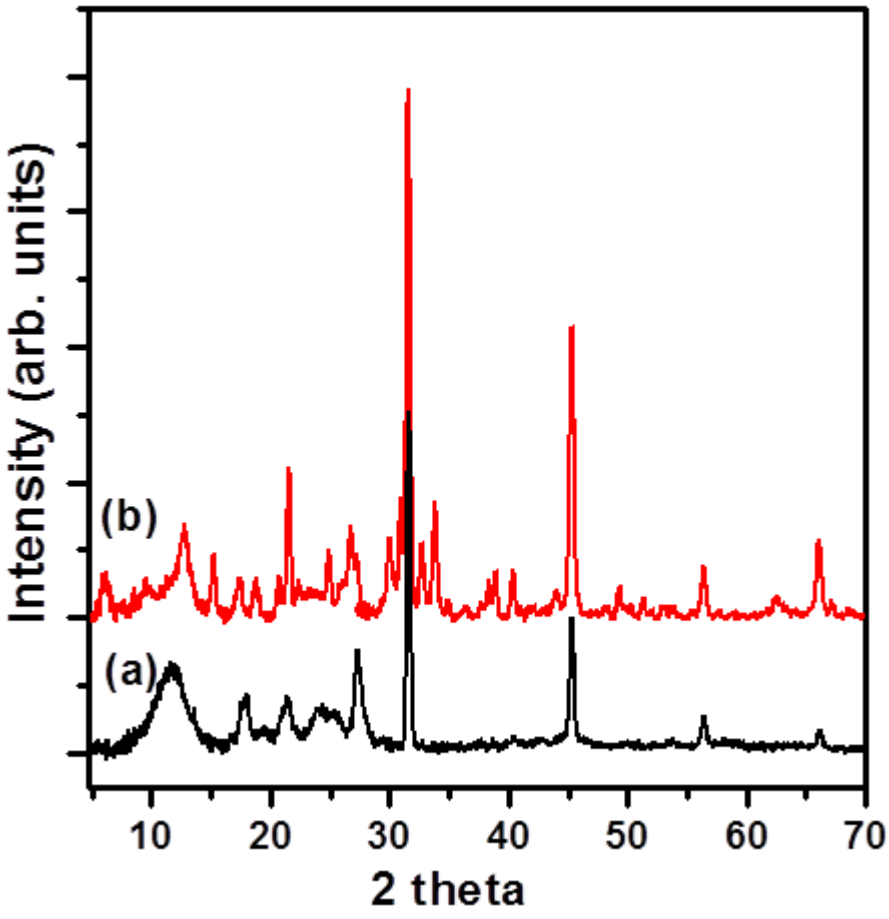

Fig. S5 X-ray powder diffraction pattern of (a) ligand **1** and (b) Mg^{2+} coordination polymer gel **1**.

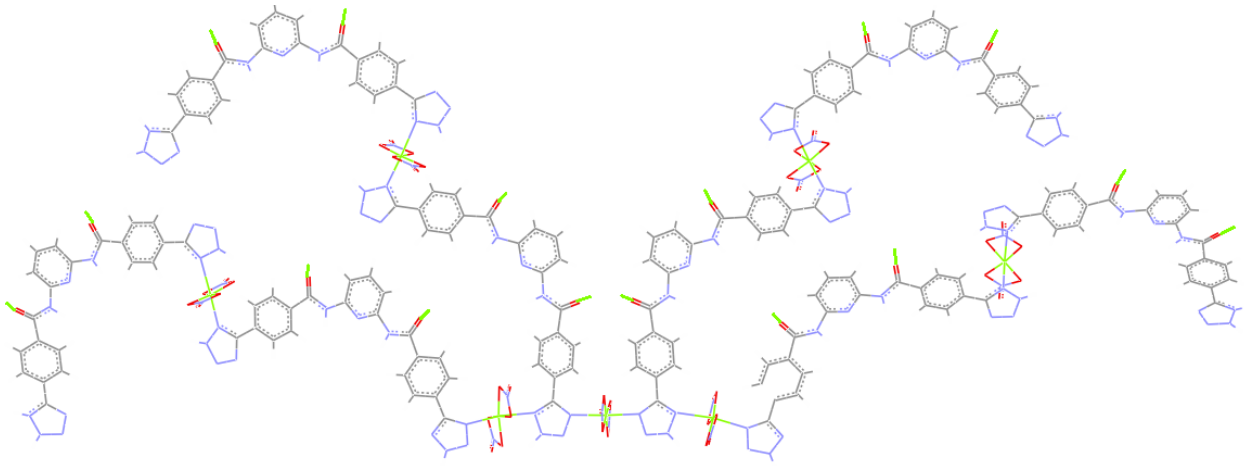

Fig. S6 The 2D expanded structure of Mg^{2+} coordination polymer gel **1** from B3LYP/3-21G* optimized structure.

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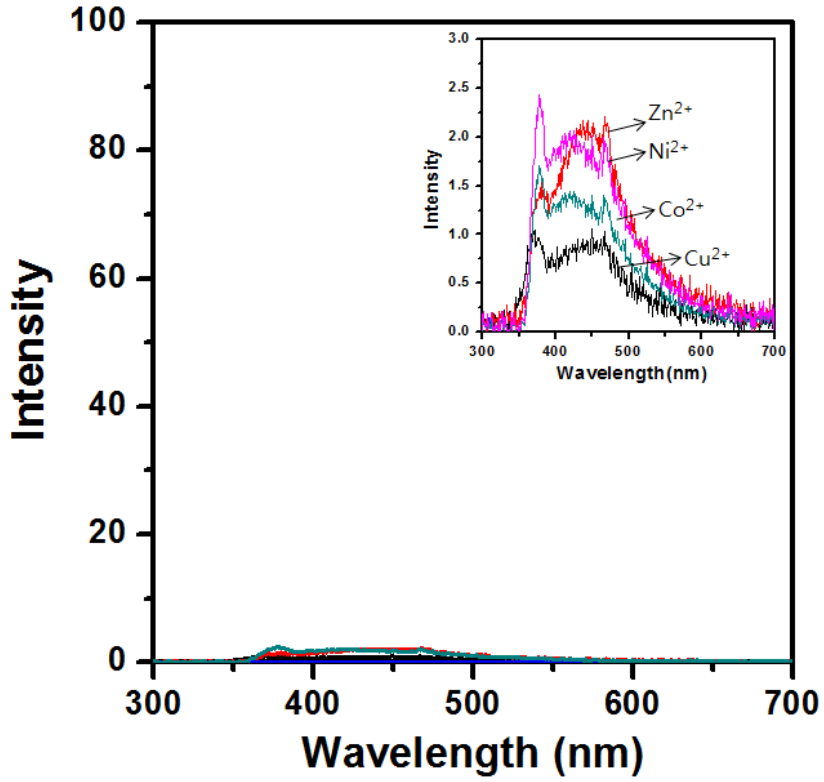

Fig. S7 Fluorescence spectra of **1** (20 mM) in the presence of Co^{2+}, Zn^{2+}, Ni^{2+} and Cu^{2+} (4 equiv) at pH= 12.

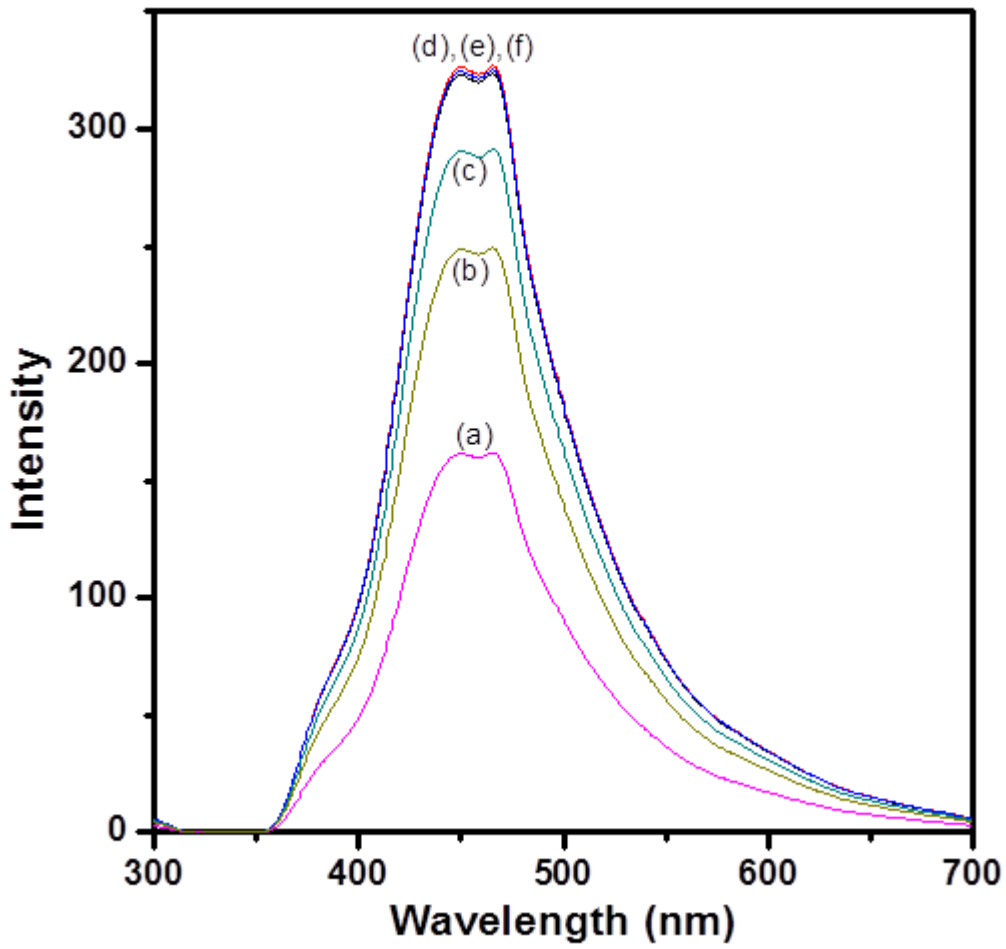

Fig. S8 Fluorescence spectra of hydrogel **1** (20 mM) by the addition of Mg^{2+} ion; (a) 1.0 equiv, (b) 2.0 equiv, (c) 3.0 equiv, (d) 4.0 equiv, (e) 5.0 equiv and (f) 6 equiv.

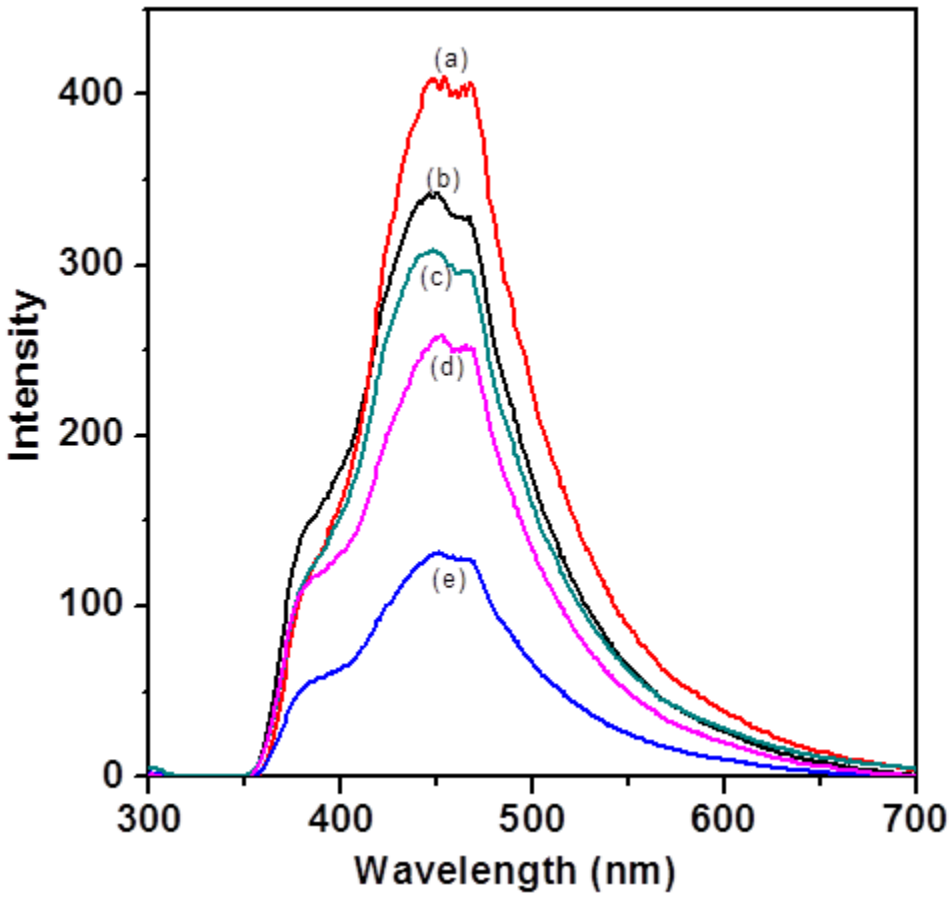

Fig. S9 Fluorescence spectra of Mg^{2+} (4 equiv) coordination polymer gel **1** (20 mM) with different anions; (a) NO_3^-, (b) Cl^-, (c) SO_4^-, (d) Br^-, (e) I^-.

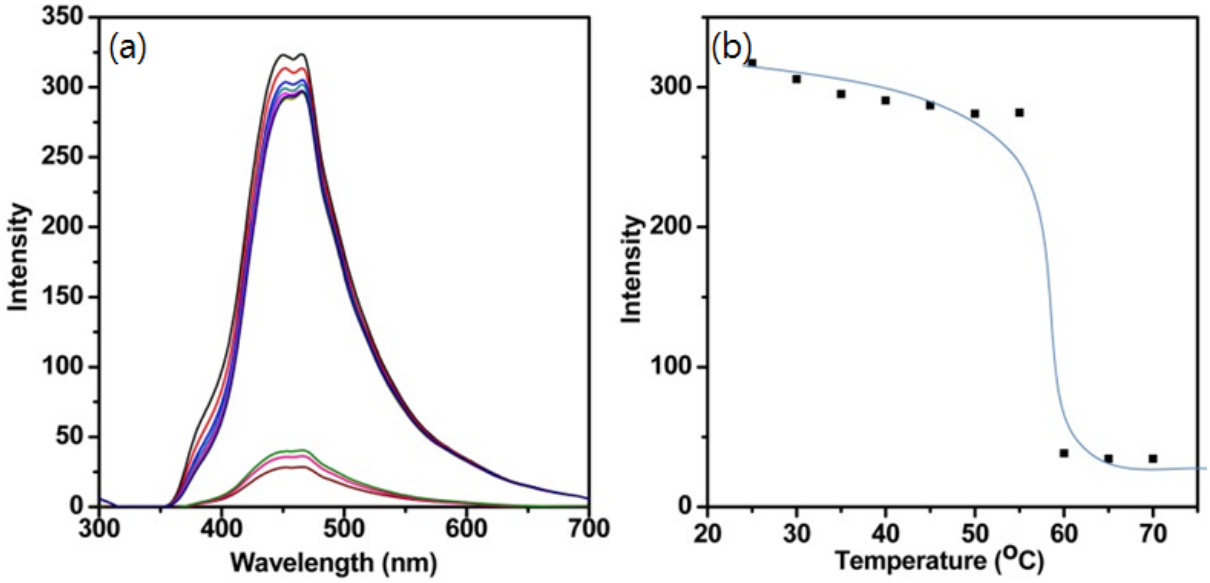

Fig. S10 (a) Fluorescence spectra of Mg^{2+} (4 equiv) coordination polymeric gel **1** (20 mM) at different temperatures (20° C, 25 °C, 30 °C, 35 °C, 40 °C, 45 °C, 50 °C, 55 °C, 60 °C, 65 °C, 70 °C). (b) Plot of fluorescence intensity of Mg^{2+} coordination polymeric gel **1** function of temperature.

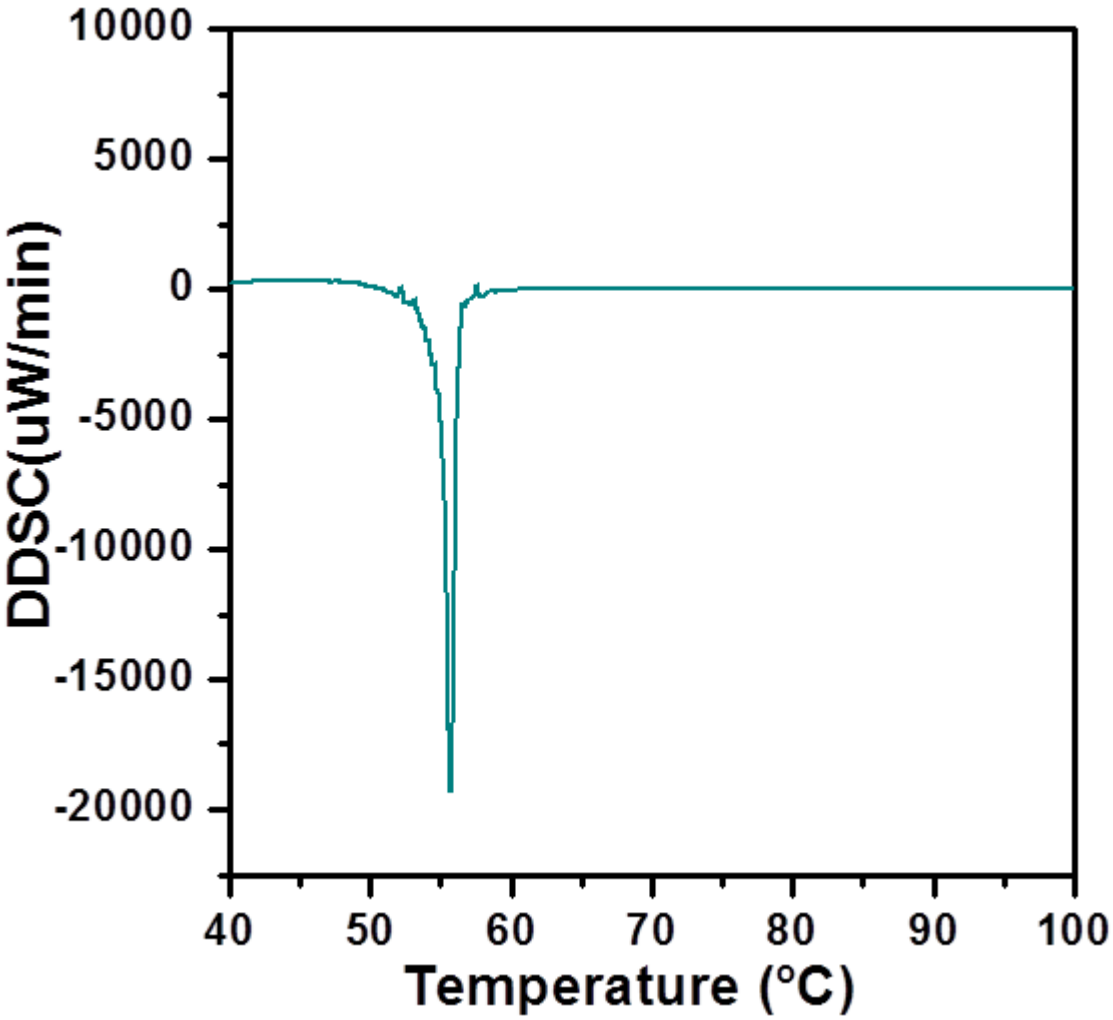

Fig. S11 Differential scanning calorimetric thermogram (DSC) of Mg^{2+} (4 equiv) coordination polymer gel **1** (20 mM).

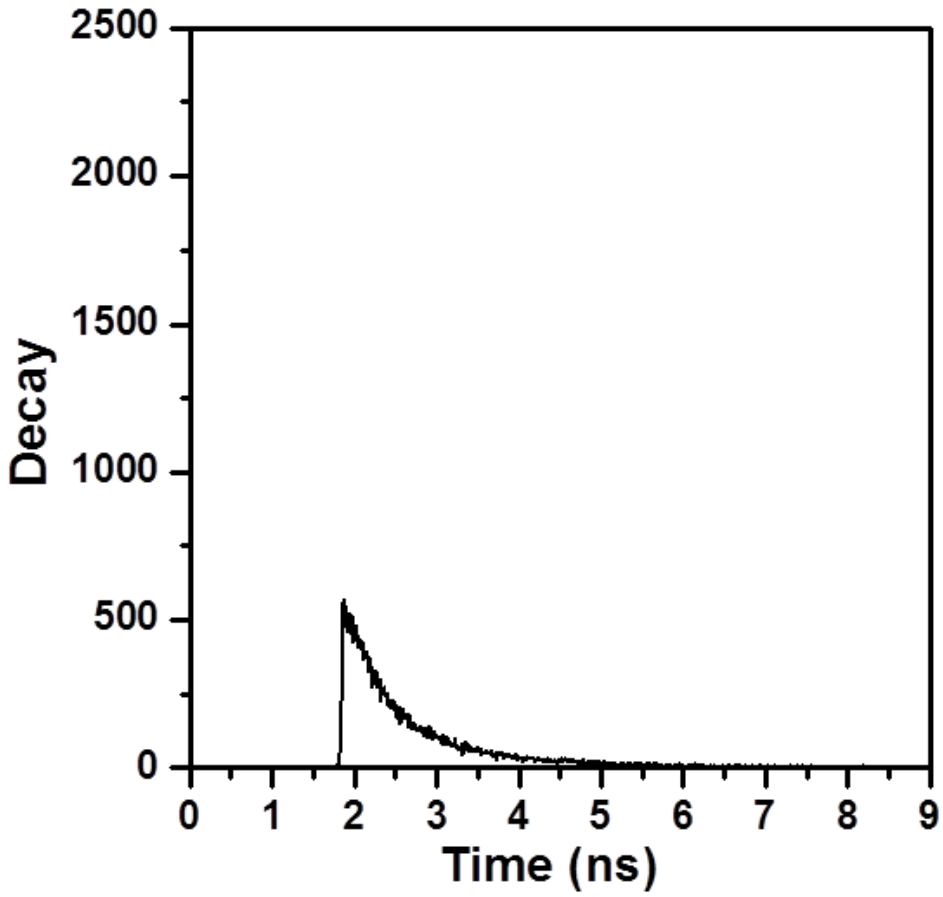

Fig. S12 Fluorescence decay of Mg^{2+} Coordination polymer gel **1** obtained by time-resolved fluorescence confocal microscopy.

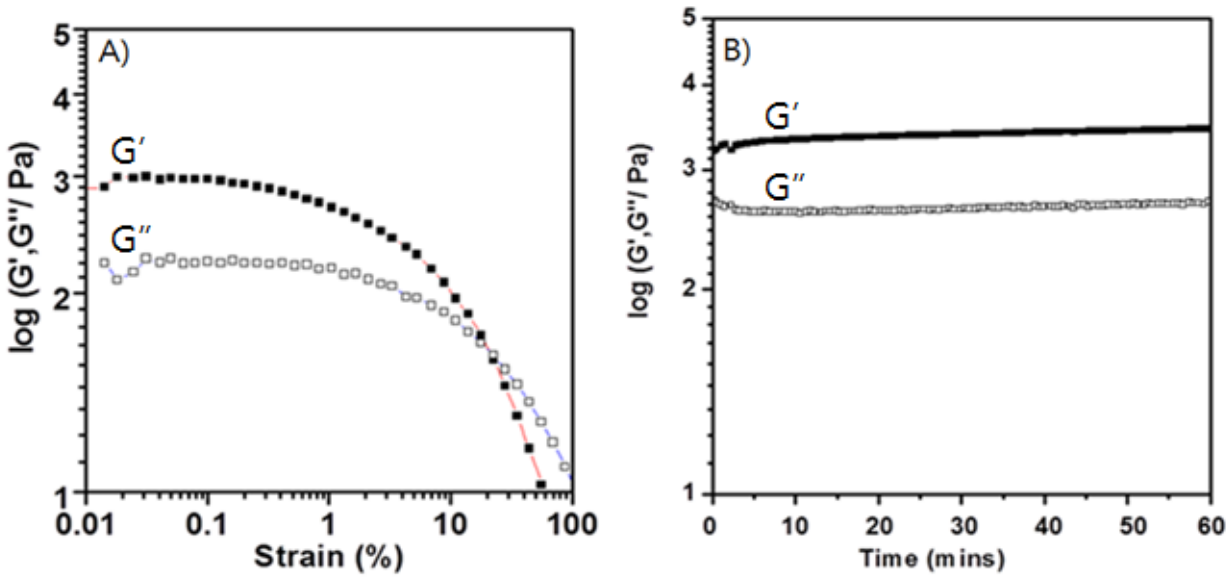

Fig. S13 (A) Strain sweep at a frequency of 1 rads^{-1} of Mg^{2+} coordination polymer gel **1.** (B) Time sweep for Mg^{2+} coordination polymer gel **1** at strain of 0.1%.

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