Electronic Supporting Information

Table S1 UV-vis absorption bands of L1H, L2H, 1 and 2 in CH_2Cl_2 at room temperature.

Compound	$\lambda_{\max}(nm)$
L1H	233, 286, 325
L2H	228, 280, 323
1	232, 250, 287, 375, 450
2	232, 250, 292, 328, 375, 450

Table S2 Emission data of 1 and 2 in different solvents at room temperature.

Compound	λ_{max} (nm) in toluene	λ_{max} (nm) in CH ₂ Cl ₂	λ_{max} (nm) in CH ₃ CN
1	495	508	519
2	493	494	502



Fig. S1 ¹H NMR spectrum of L1H (500 MHz, CD₃CN).



Fig. S2 ¹H NMR spectrum of L2H (500 MHz, CDCl₃).



Fig. S3 ¹H NMR spectrum of **1** (500 MHz, DMSO-*d*₆).



Fig. S4 ¹H NMR spectrum of 2 (500 MHz, CDCl₃).



Fig. S5 Experimental and simulated XRD patterns of 1.



Fig. S6 Experimental and simulated XRD patterns of 2.



Fig. S7 Packing structure of L1H.



Fig. S8 Packing structure of L2H.



Fig. S9 The arrangement of right- and left-handed helical chains (denoted as R and L, respectively) in the packing structure of 1. Big red balls are O atoms from CH_3OH molecules.



Fig. S10 Phosphorescence spectra of 1 and 2 in $C_2H_5OH-CH_3OH$ (v/v = 3/1) at 77 K ($\lambda_{ex} = 405$ nm).



Fig. S11 The emission decay of compound 1.



Fig. S12 The emission decay of compound 2.



Fig. S13 Luminescence spectra of 1 at room temperature in toluene, CH_2Cl_2 and CH_3CN ($\lambda_{ex} = 405$ nm).



Fig. S14 Luminescence spectra of 2 at room temperature in toluene, CH_2Cl_2 and CH_3CN ($\lambda_{ex} = 405$ nm).



Fig. S15 ¹H NMR spectrum of L1H (500 MHz, CD₃CN) after UV irradiation ($\lambda = 321$ nm).



Fig. S16 The comparison of ¹H NMR spectra of L1H before and after irradiation. o = selected peaks indicating the conversion from open form (before irradiation) to closed form (after irradiation).



Fig. S17 Black line: irradiating ($\lambda = 323$ nm) the CH₂Cl₂ solution of L2H for 1 minute; red line: irradiating ($\lambda = 575$ nm) the solution corresponding to black line for 0.5 minute; blue line: placing the solution corresponding to black line in the dark for 30 minutes.



Fig. S18 ¹H NMR spectrum (500 MHz, CDCl₃) of L2H after UV irradiation ($\lambda = 323$ nm).



Fig. S19 ¹H NMR spectra of L2H before and after UV irradiation ($\lambda = 323$ nm).