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Supporting Information

Selective Detection of Multicarboxylate Anions based on "Turn on" Electron Transfer by Self-Assembled Molecular Rectangles

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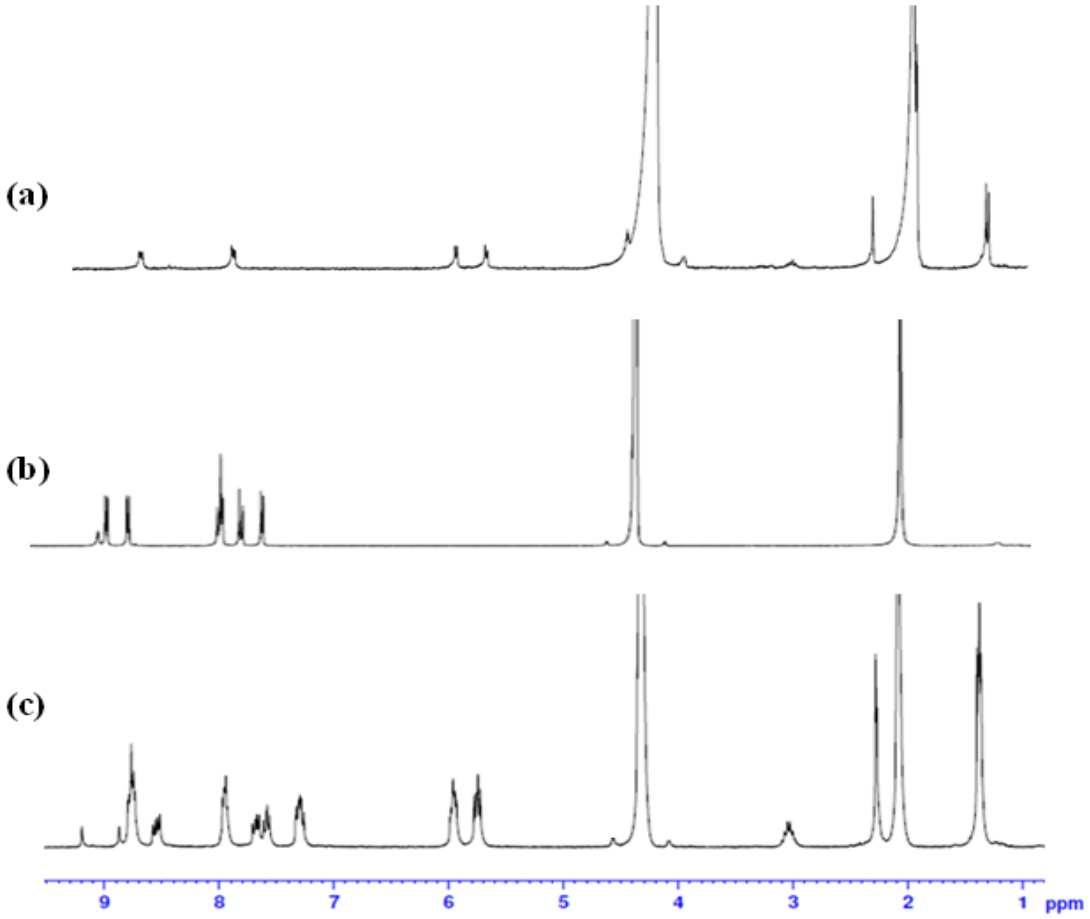

Figure S1. Comparison of the ^{1}H NMR aromatic region of (a) Ru acceptor **2**, (b) amide ligand **1**, and (c) self-assembled [2+2] rectangle **4** in Nitromethane-d_3 solvent.

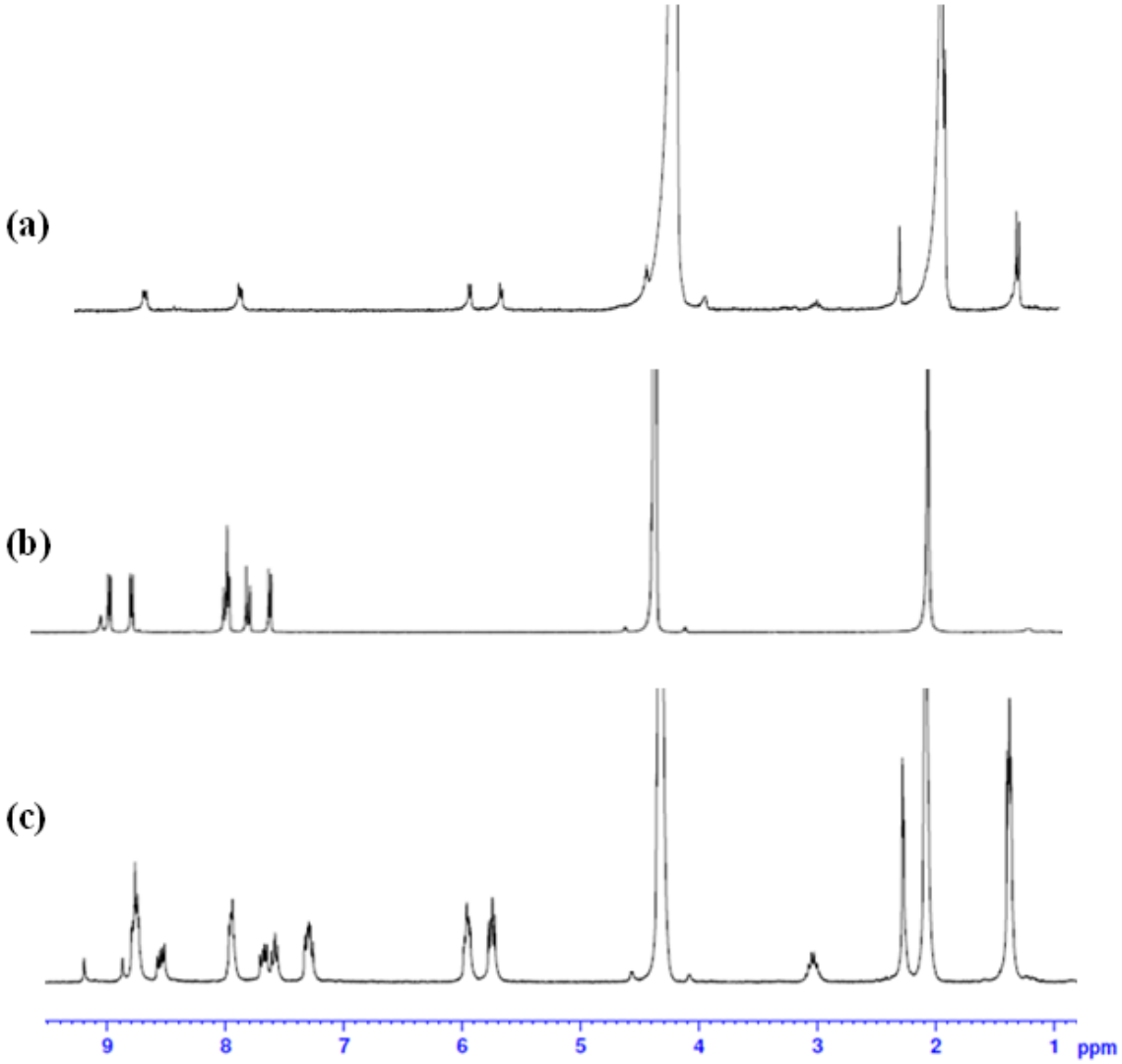

Figure S2. Comparison of the ^{1}H NMR aromatic region of (a) Ru acceptor **3**, (b) amide ligand **1**, and (c) self-assembled [2+2] rectangle **5** in Nitromethane-d_3 solvent.

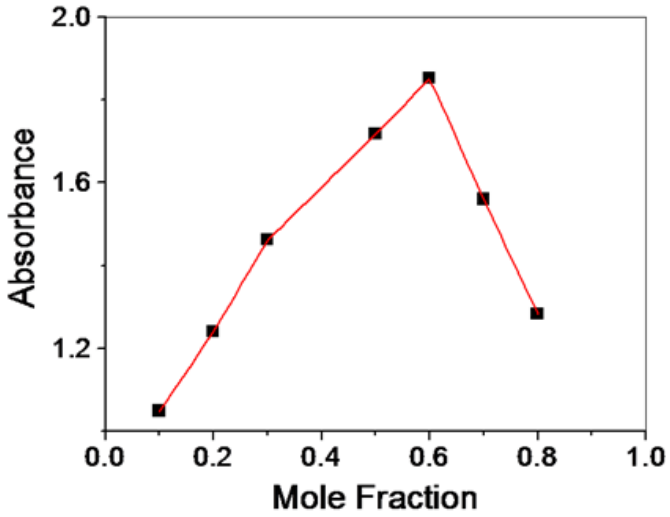

Figure S3. Job plot of tartrate anion titrations with **5.**

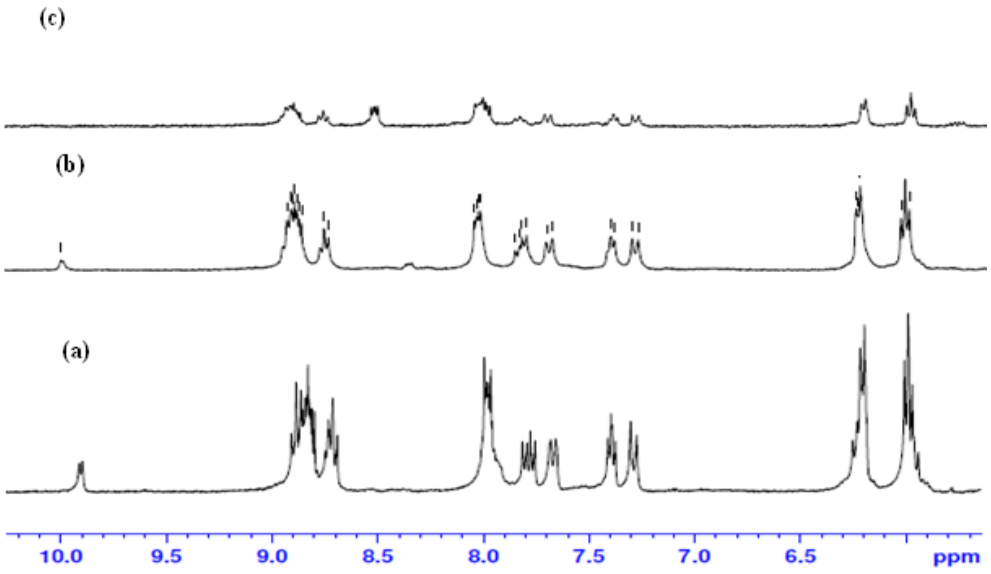

Figure S4. ^{1}H NMR spectra of **5** in acetone with increasing amounts of $[Bu_4N]_2$ oxalate. (a) 0, (b) 0.5, and (c) 1.0 equiv of $[Bu_4N]_2$ oxalate.

Table S1. Crystal data and structure refinement for **5**.

Empirical formula	C130 H132 F12 N8 O30 Ru4 S4	
Formula weight	3046.96	
Temperature	100(2) K	
Wavelength	0.80000 Å	
Crystal system	Monoclinic	
Space group	*P*21/*c*	
Unit cell dimensions	*a* = 18.232(4) Å	α = 90°
	b = 20.125(4) Å	β = 106.85(3)°
	c = 18.433(4) Å	γ = 90°
Volume	6473(2) $Å^3$	
Z	2	
Density (calculated)	1.563 g/cm^3	
Absorption coefficient	0.838 mm^{-1}	
F(000)	3112	
Crystal size	0.20 x 0.10 x 0.10 mm^3	
Theta range for data collection	1.74 to 24.90°	
Index ranges	-19≤h≤19, -21≤k≤21, -19≤l≤18	
Reflections collected	28671	
Independent reflections	7714 [R(int) = 0.0325]	
Completeness to theta = 24.90°	97.5 %	
Absorption correction	Semi-empirical from equivalents	
Max. and min. transmission	0.9209 and 0.8504	
Refinement method	Full-matrix least-squares on F^2	
Data / restraints / parameters	7714 / 154 / 853	
Goodness-of-fit on F^2	1.686	
Final R indices [I>2sigma(I)]	R1 = 0.1153, wR2 = 0.3480	
R indices (all data)	R1 = 0.1228, wR2 = 0.3574	
Extinction coefficient	0.016(2)	
Largest diff. peak and hole	1.654 and -0.814 $e.Å^{-3}$	