Supporting Information

Ultrasound-Induced Emission Enhancement Based on Structure-Dependent Homo- and Heterochiral Aggregations of Chiral Binuclear Platinum Complexes

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Table S1. Crystallographic data for (±)-*anti*-**1a**, (+)-*anti*-**1a**, (±)-*anti*-**1c** and (+)-*anti*-**1c**.

	(±)-*anti*-**1a**	(+)-*anti*-**1a**•C_6H_{12}	(±)-*anti*-**1c**	(+)-*anti*-**1c**•2.5C_6H_{12}
Formula	$C_{38}H_{40}N_4O_4Pt_2$	$C_{38}H_{40}N_4O_4Pt_2$• C_6H_{12}	$C_{42}H_{48}N_4O_4Pt_2$	$C_{42}H_{48}N_4O_4Pt_2$• 2.5C_6H_{12}
Formula weight	1006.94	1091.10	1063.05	1273.45
Temperature (K)	114	114	113	113
Crystal color, habit	orange, platelet	orange, block	orange, block	orange, needle
Crystal size, mm	0.80×0.80×0.10	0.10×0.05× 0.05	0.20×0.20×0.10	0.40×0.05×0.05
Crystal system	monoclinic	monoclinic	monoclinic	orthorhombic
Space group	*P*2/n (#13)	*C*2 (#5)	$P2_1/c$ (#14)	$P2_12_12$ (#18)
a, Å	16.539(6)	38.64(3)	9.796(3)	18.1342(3)
b, Å	9.781(3)	9.835(6)	19.219(5)	21.0565(3)
c, Å	22.109(8)	10.795(7)	20.060(6)	14.0388(2)
α, deg	90	90	90	90
β, deg	108.690(5)	94.461(12)	99.104(8)	90
γ, deg	90	90	90	90
V, Å^3	3388(2)	4090(5)	3729.0(17)	5360.6(2)
Z value	4	4	4	4
D_{calcd}, gcm^{-3}	1.974	1.772	1.893	1.578
μ(MoKα), cm^{-1}	82.632	68.526	75.131	52.407
F(000)	1936.00	2128.00	2064.00	2544.00
$2\theta_{max}$, deg	55.0	54.9	55.0	54.9
No. of reflns measd	24510	19102	47624	107204
No. obsd reflns	7707	9017	8515	12197
No. variables	433	363	470	604
R_1 (I > 2σ(I))	0.078	0.10	0.078	0.031
wR_2 (all reflns)	0.22	0.24	0.25	0.062
goodness of fit	1.09	1.04	1.22	1.07
Flack parameter		0.01(3)		0.002(6)

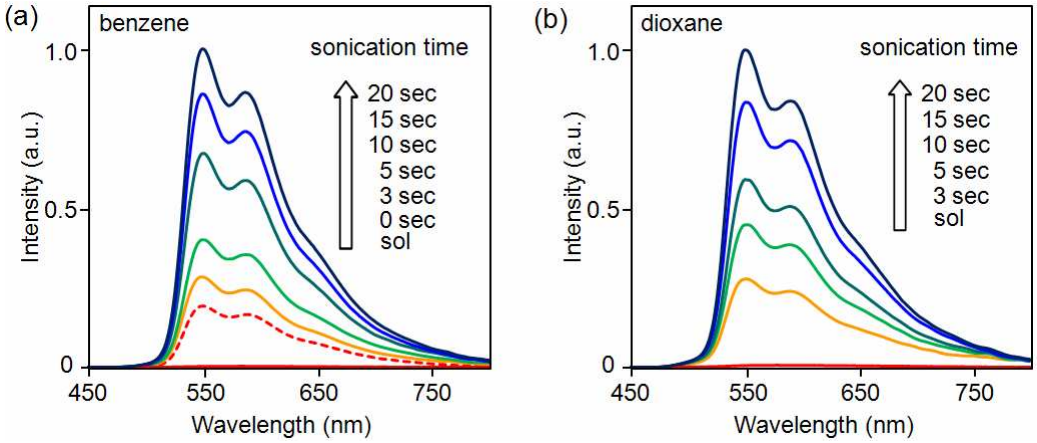

Figure S1. Emission spectra of gels of (±)-*anti*-**1a** in (a) benzene (1.20×10^{-2} M) and (b) 1,4-dioxane (2.00×10^{-2} M) generated by sonication (44 kHz, 0.31 W/cm^2) for various irradiation times (λ_{ex} = 420 nm, 293 K). Dashed line: a spontaneous gel formed by standing at room temperature for 1 h without sonication.

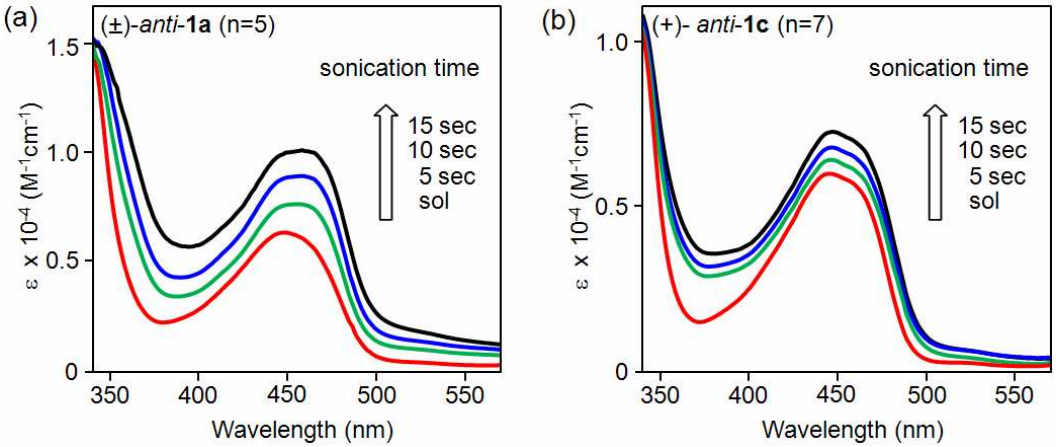

Figure S2. UV-vis spectra of (a) (±)-*anti*-**1a** and (b) (+)-*anti*-**1c** gels in cyclohexane (1.50×10^{-3} M) generated by sonication (44 kHz, 0.31 W/cm^2) for various times.

Table S2. Excitation energy, oscillator strength and major electronic configuration of *anti*-**1a**.[a]

state	excitation energy (eV)	oscillator strength	major configuration[b]	coefficient
Singlet state				
1	2.6321	f = 0.0224	182→183	0.61052
2	2.7426	0.0283	181→184	-0.44011
			182→184	0.49642
3	2.8775	0.0001	181→183	0.55377
4	2.8893	0.0019	182→185	0.41429
Triplet state				
1	2.1618		182→183	0.52554
2	2.2820		181→184	0.49384
			182→184	-0.40389
3	2.3934		182→185	0.49460
4	2.5085		181→186	-0.37756
			182→186	0.38037

[a] Estimated by TD-DFT (B3LYP/6-31G*, LanL2DZ) calculations based on the X-ray structure of (±)-*anti*-**1a**. [b] HOMO is MO182.

Table S3. Excitation energy, oscillator strength and major electronic configuration of *anti*-**1c**.[a]

state	excitation energy (eV)	oscillator strength	major configuration[b]	coefficient
Singlet state				
1	2.6742	f = 0.0250	198→199	0.63808
2	2.7402	0.0357	197→200	0.61234
3	2.9638	0.0009	197→199	0.60422
4	2.9657	0.0006	198→200	0.57951
Triplet state				
1	2.2039		198→199	0.60527
2	2.2750		197→200	0.59301
3	2.4803		198→201	0.48859
4	2.5056		197→202	0.46855

[a] Estimated by TD-DFT (B3LYP/6-31G*, LanL2DZ) calculations based on the X-ray structure of (+)-*anti*-**1c**. [b] HOMO is MO198.

Complete reference 20.

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