2,2'-biquinolines as test pilots for tuning the colour emission of luminescent mesomorphic silver(I) complexes

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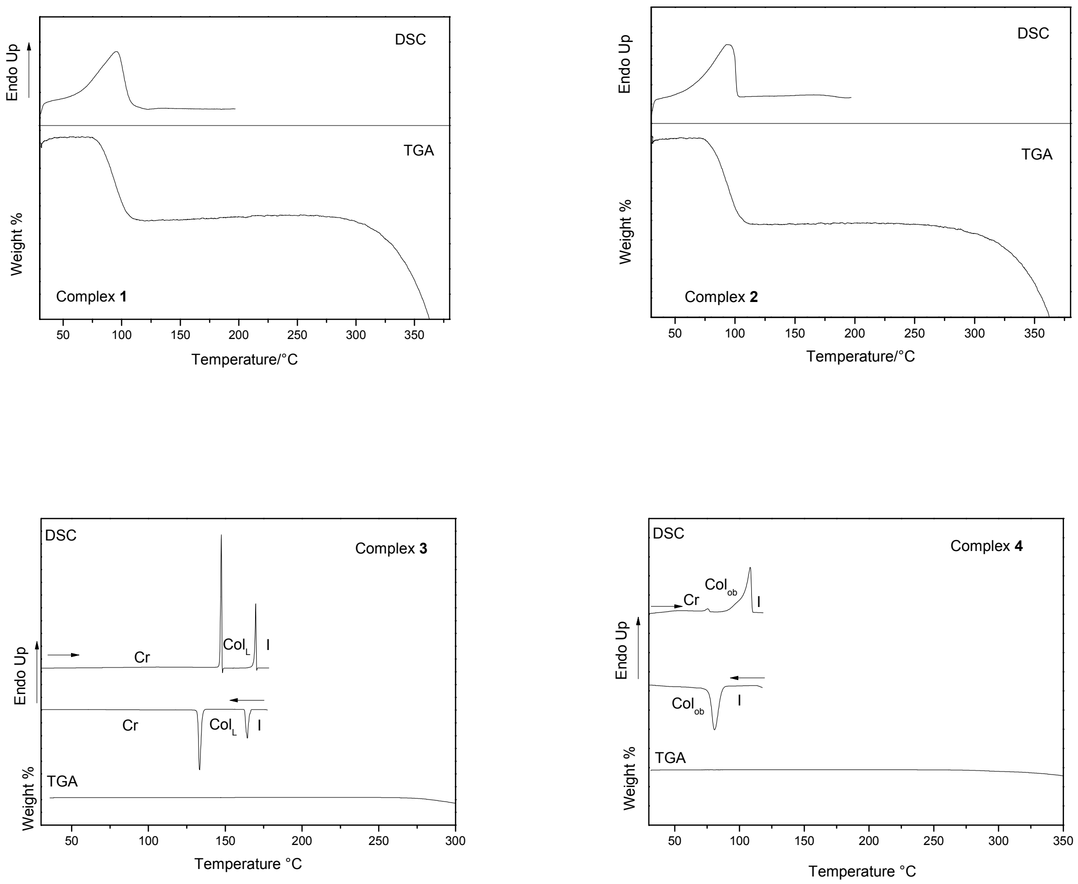
1. DSC and TGA thermograms of Complexes 1 and 2

The thermal stability of complexes **1** - **4** was tested both by thermogravimetric analysis (TGA) and differential scanning calorimetry (DSC).

The TGA scans of both complexes **1** and **2** reveal a desolvation process of one water molecule in a single narrow step (90-100°C), in correspondence with an endotherm peak (ΔH = 57.8 KJ/mol for complex **1** and ΔH = 59.4 KJ/mol for complex **2**) observed by DSC (Figure S1). Thermogravimetric data for the complex **1**: experimental mass loss (3.3%) corresponds to one water molecule (calcd. 3.4%). Thermogravimetric data for the complex **2**: experimental mass loss (2.7%) corresponds to one water molecule (calcd. 2.8%).

For the liquid crystalline complexes **3** and **4**, no thermal processes were detected on TGA scans until 250°C, where decomposition occurs.

Figure S1.



2. PXRD data for complexes 3 and 4.

Table S1

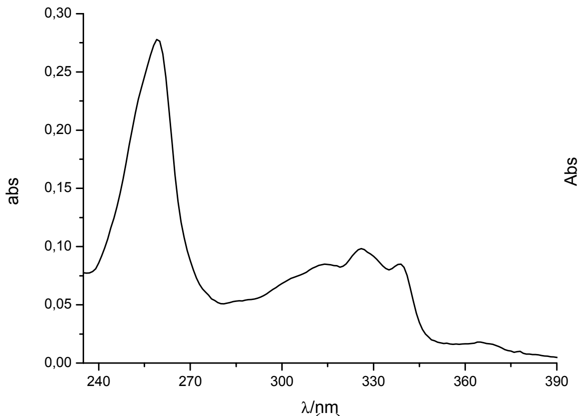
Complex	Mesophase lattice constants/Å	d_{meas}/ Å (d_{calcd}/ Å)	Miller indice] *hk*
3	Col_L at 155°C	31.5 (31.9)	001
	(on heating)	15.8 (15.9)	002
	a = 9.79 Å	10.6(10.6)	003
	b = 8.96 Å	9.7 (9.8)	100
	c = 31.9 Å	8.9 (8.9)	010
	γ= 85.6°	8.4 (8.3)	102
		7.8 (7.8)	012
		7.2 (7.2)	103
		6.7 (6.7)	111
		6.2 (6.2)	104
		4.9 (4.9)	200
		4.3	h_{CH}
		3.4	h
4	Col_{obp} at 30°C	39.0 (39.0)	100
	(on cooling)	33.3 (33.3)	010
	a = 42.01 Å	21.7 (21.7)	110
	b = 35.78 Å	13.9 (14.0)	$3\bar{1}0$
	γ= 112.3°	13.0 (13.0)	300
		11.9 (11.9)	$1\bar{3}0$
		10.5 (10.5)	$4\bar{1}0$
		8.8 (8.8)	$1\bar{4}0$
		6.6 (6.6)	050
		6.0 (6.0)	340
		4.4	001, h_{ch}
		3.4	h_0

3. Absorption data and spectra of L^1, L^3, 1 and 3

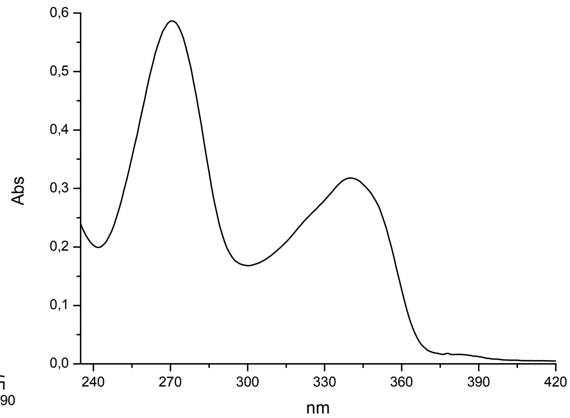
Table S2. Absorption maxima recorded in dichloromethane solution at room temperature

compound	*Abs, λ/nm(ε/M^{-1}cm^{-1})*
L^1	365(5000), 338 (21200), 326(25000),315 (21200), 300(sh), 290(sh), 260(69200)
L^2	360(sh), 350 (sh) ,340 (24900), 325(sh), 270(43800)
L^3	380(1270),350(sh), 340 (25160), 320(sh), 270(46500)
L^4	366(1180), 340(sh), 330(25800), 310(sh), 300(sh), 280(sh), 262(83300)
1	380(sh), 356(26200), 340(21950), 330(sh), 295(10260), 284(13080), 265(73400)
2	390(sh), 370 (24200), 360(sh), 312 (10600), 300(sh), 274(60200)
3	400(sh), 367(24150), 360(sh), 312(10920), 305(sh), 274(61300)
4	380(sh), 358 (16400), 330(sh), 310(sh), 300(31200), 280(sh), 265(92600)

Figure S2. Absorption spectra of **L^1** (a), **L^3** (b), **1** (c) and **3** (d) in dichloromethane solution



(a)



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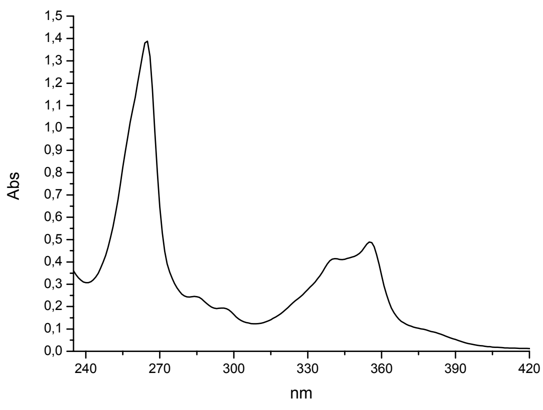

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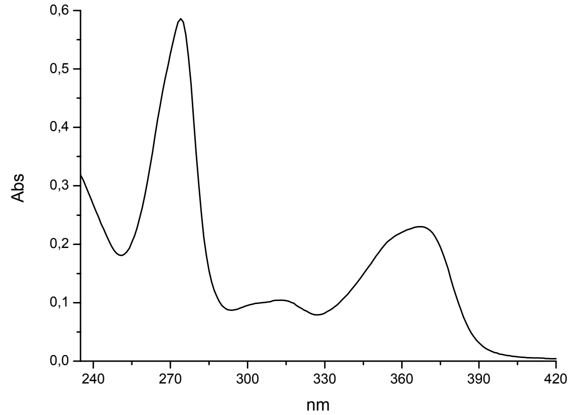

(d)