

Supplementary material

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1.

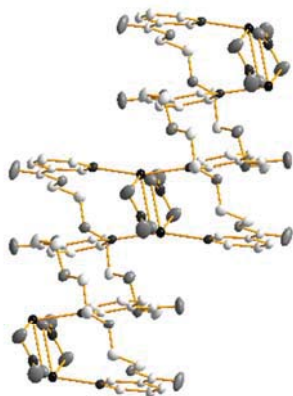


Fig. S1: Image of the double helix $\text{Ag}(\text{L3n})\text{NO}_3$, compound **5**

2.

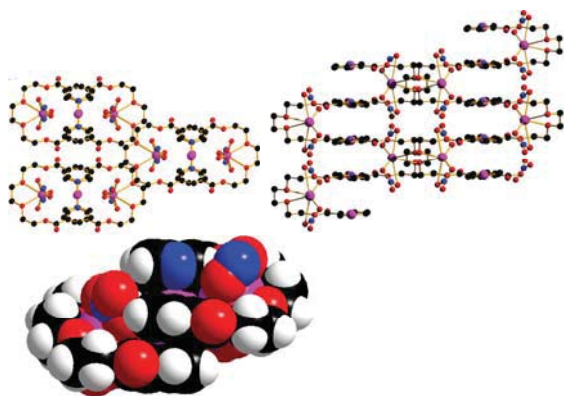
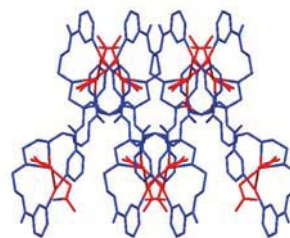


Fig. S2: Images of the planar view and space filled view of the compound **6**, $\text{Ag}_2(\text{L3n})(\text{NO}_3)_2$



3.

Fig S3: Image of the packing of compound **9**, $[\text{Ag}_2(\text{L4n})(\text{NO}_3)_2]$

4.

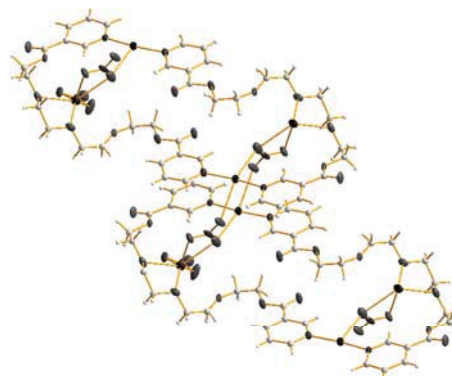


Fig S4: Image of the π - π interactions of two metallacycles of compound **9**, $[\text{Ag}_2(\text{L4n})(\text{NO}_3)_2]$ and their inorganic ring

5.

Table 3: Details of the crystal data of the ligands

	L3i	L4i
Formula sum	C ₁₈ H ₂₀ N ₂ O ₆	C ₂₀ H ₂₄ N ₂ O ₇
Formula weight	360.13	404.16
Space group	<i>P</i> -1	<i>P</i> bcn
<i>T</i> /°K	293.00	293.00
<i>a</i> /Å	5.9080(12)	10.163(2)
<i>b</i> /Å	7.1320(14)	8.7541(18)
<i>c</i> /Å	10.8070(2)	22.081(4)
<i>α</i> /°	72.98(3)	90.00
<i>β</i> /°	88.24(3)	90.00
<i>γ</i> /°	78.97(3)	90.00
<i>V</i> /Å ³	427.22(14)	1964.6(7)
ρ_{calc} /g cm ⁻³	1.401	1.367
μ /cm ⁻¹	10.6	10.4
<i>Z</i>	1	4
Final <i>R</i> ₁ values (<i>I</i> >2σ(<i>I</i>))	0.1263	0.0698
Final <i>wR</i> ₂ values (<i>I</i> >2σ(<i>I</i>))	0.2827	0.1764
Final <i>R</i> ₁ values (all data)	0.3172	0.0769
Final <i>wR</i> ₂ values (all data)	0.4414	0.1819
Completeness θ	96.3	98.7
G.O.F.	1.051	1.522
Reflections collected/unique F(000)	1112/1112 190	17966/2717 856

Table 4: Details of the crystal data of the new silver compounds

Compounds	1 [[Ag(L3i) NO ₃](H ₂ O) ₂]	2 [[Ag(L3i) NO ₃](H ₂ O)]	3 [Ag(L3i)OSC F ₃]	4 [Ag(L3i) PF ₆] ₂	5 [Ag(L3n)NO ₃]	6 [Ag ₂ (L3n) (NO ₃) ₂]	7 [Ag(L4i) O ₃ SCF ₃] ₂	8 [Ag(L4n) NO ₃ (CH ₃ OH) ₂]	9 [Ag ₂ (L4n) (NO ₃) ₂] ₂
Formula sum	C ₁₈ H ₂₄ Ag ₁ N ₃ O ₁₁	C ₁₈ H ₂₂ Ag ₁ N ₃ O ₁₀	C ₁₉ H ₂₀ Ag ₁ F ₃ N ₂ O ₆ S ₁	C ₃₆ H ₄₀ Ag ₂ F ₁₂ N ₄ O ₁₂ P ₂	C ₁₈ H ₂₀ Ag ₁ N ₃ O ₉	C ₁₈ H ₂₀ Ag ₂ N ₄ O ₁₂	C ₄₂ H ₄₈ Ag ₂ F ₆ N ₄ O ₃₀ S ₂	C ₄₂ H ₅₆ Ag ₂ N ₆ O ₂₂	C ₄₀ H ₄₈ Ag ₄ N ₈ O ₃₆
Formula weight	566.27	548.26	617.30	1226.40	530.24	700.12	1322.70	1212.67	1488.34
Space group	<i>P</i> -1	<i>P</i> -1	<i>P</i> 2 ₁ / <i>c</i>	<i>P</i> -1	<i>P</i> 2 ₁ / <i>c</i>	<i>C</i> 2/ <i>c</i>	<i>P</i> -1	<i>P</i> 2 ₁ / <i>c</i>	<i>P</i> 2 ₁ / <i>c</i>
<i>T</i> /°K	200.00	293.00	293.00	293	200.00	200.00	200.00	200.00	200.00
<i>a</i> / Å	9.1377(18)	9.2026(18)	8.930(5)	8.7123(17)	8.0308(16)	8.5066(17)	10.0591(14)	9.5480(5)	9.9254(16)
<i>b</i> / Å	10.794(2)	9.2967(19)	14.200(5)	9.806(2)	13.192(2)	23.887(5)	10.3383(14)	8.1661(3)	7.9338(10)
<i>c</i> / Å	11.988(2)	14.494(3)	20.264(5)	14.257(3)	20.531(4)	10.917(2)	14.054(2)	31.3729(15)	31.910(5)
<i>α</i> / °	100.062(15)	78.32(3)	90.00	75.58(3)	90.00	90.00	76.820(12)	90.00	90.00
<i>β</i> / °	107.033(15)	80.75(3)	116.134(15)	79.75(3)	101.866(16)	90.47(3)	83.149(12)	91.197(4)	91.243(13)
<i>γ</i> / °	99.711(15)	67.82(3)	90.00	72.74(3)	90.00	90.00	64.790(10)	90.00	90.00
<i>V</i> / Å ³	1082.4(4)	1119.7(4)	2306.9(16)	1119.4(4)	2128.6(7)	2218.2(8)	1287.1(3)	2445.6(2)	2512.2(6)
<i>ρ</i> _{calc} / g cm ⁻³	1.737	1.626	1.777	1.819	1.655	2.096	1.707	1.647	1.968
<i>μ</i> /cm ⁻¹	9.85	9.58	10.42	10.60	10.02	18.41	9.43	8.89	16.35
<i>Z</i>	2	2	4	1	4	4	1	2	2
Final <i>R</i> ₁ values (<i>I</i> >2σ(<i>I</i>))	0.0596	0.1166	0.0810	0.1096	0.0591	0.0254	0.0834	0.0279	0.0961
Final <i>wR</i> ₂ values (<i>I</i> >2σ(<i>I</i>))	0.1517	0.1990	0.1033	0.2360	0.1137	0.0518	0.2006	0.0684	0.1530
Final <i>R</i> ₁ values (all data)	0.0653	0.4348	0.1910	0.2747	0.1004	0.0310	0.2093	0.0382	0.1907
Final <i>wR</i> ₂ values (all data)	0.1561	0.3436	0.1354	0.3211	0.1272	0.0534	0.2328	0.0717	0.1782
Completeness θ %	99.8	99.3	94.7	92.0	99.2	99.2	98.9	99.2	99.4
G.O.F.	1.022	0.688	1.104	0.829	0.939	1.139	0.754	0.952	1.126
Reflections collected/unique	22829/4584	3942/3942	5859/3017	3709/3709	20319/4788	18136/2657	23195/6167	67015/6585	17935/5298
<i>F</i> (000)	576	556	1240	620	1072	1384	668	1220	1480