Electronic Supplementary Material (ESI) for CrystEngComm

Syntheses, structure and near-infrared (NIR) luminescence of Er_2, Yb_2, ErYb of homodinuclear and heterodinuclear lanthanide(III) complexes based on salen ligand

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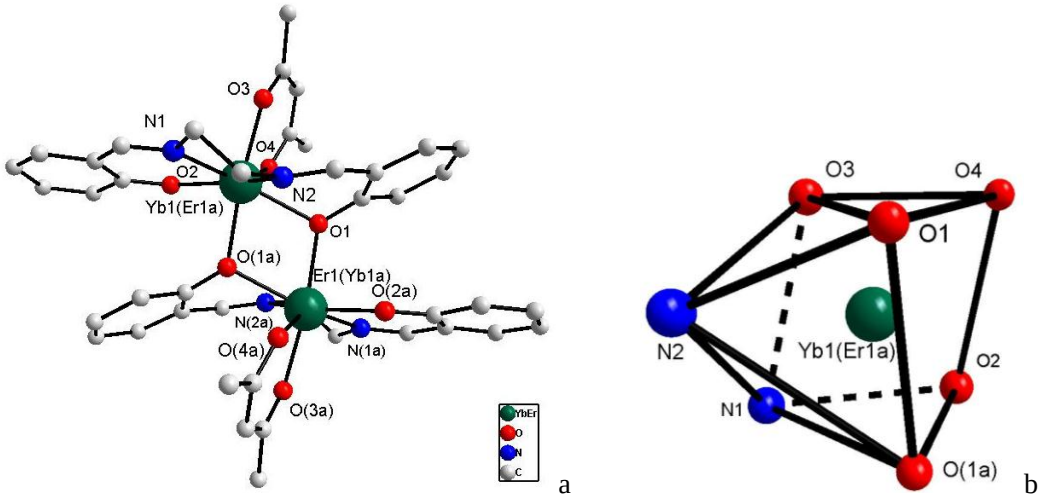
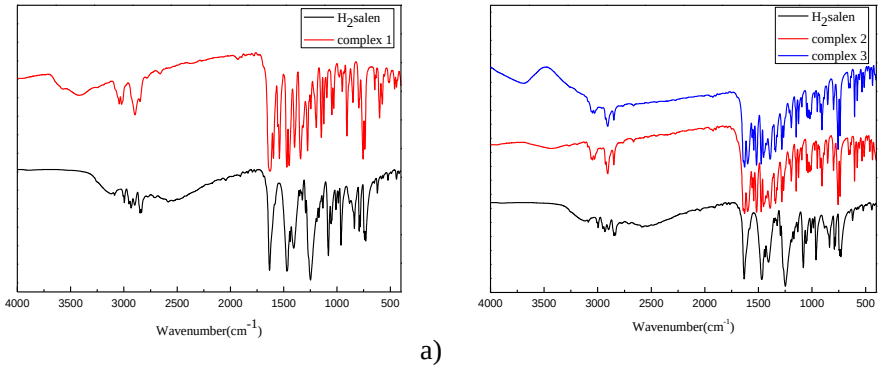


Fig. S1 a) The crystal structure of **3**, all hydrogen atoms have been omitted for clarity. Selected bond lengths (Å) and angles (°): Yb(1) –O(2a) 2.162(4), Yb(1)–O(3) 2.221(5), Yb(1)–O(1) 2.256(4), Yb(1)–O(4) 2.256(5), Yb(1)–O(1a) 2.300(4), Yb(1)–N(1a) 2.424(5), Yb(1)–N(2a) 2.452(5), Yb(1)–Er(1a) 3.6973(8), Yb(1)–Yb(1a) 3.6973(8), Er(1a)–O(1) 2.300(4), Yb(1a)–O(1) 2.300(4), Er(1a)–O(2) 2.162(4), Yb(1a)–O(2) 2.162(4), Er(1a)–N(1) 2.424(5), Yb(1a)–N(1) 2.424(5), Er(1a)–N(2) 2.452(5), Yb(1a)–N(2) 2.452(5), Yb(1)–O(1)–Er(1a) 108.50(16); b) Perspective view of coordination polyhedron for Yb(III) or Er(III) ion in **3.**



a) b)

Fig. S2 a) Infrared spectrum of complex **1**; b) Infrared spectra of complexes **2** and **3.**

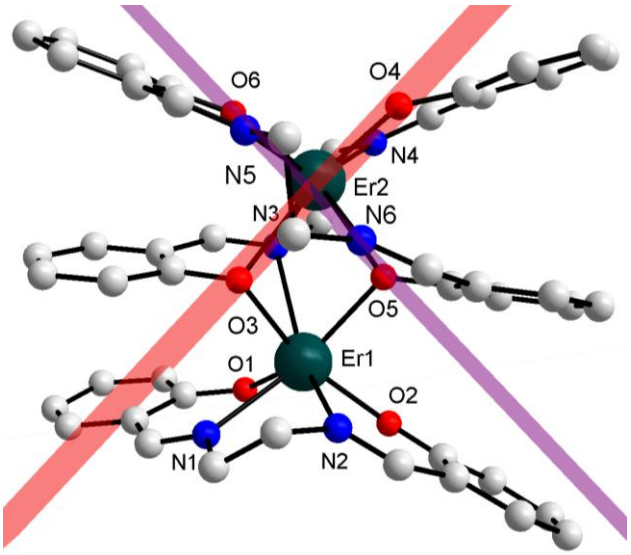


Fig. S3 Twisted butterfly style forming by two cavity N_2O_2 in complex **1.**

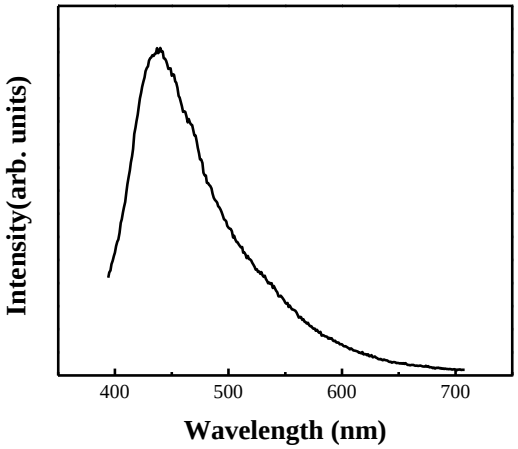


Fig. S4 Visible emission spectrum of complex **1** in dichloromethane at room temperature.

Table S1 Infrared spectra for H_2salen ligand and complexes **1-3**

Compounds	ν (cm^{-1})
	C=N
H_2salen	1633
1	1630
2	1642
3	1641