

SUPPLEMENTARY INFORMATION

Controlled assembly of luminescent racks based on heteroleptic dinuclear lanthanide complexes

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Further characterisation data:

[EuL^a]

LC-MS (ES+) {M⁺} 652/654; FAB-MS: {M+1}⁺ 652 D.

Elemental analysis: Calculated for [EuC₂₂H₃₈N₅O₈·0.5H₂O]: 38.9% C; 6.1% H; 10.4% N. Found: 38.9% C; 6.2% H; 10.4% N.

[YL^a]

FAB-MS {M+1}⁺ 590 D. ¹H NMR (250MHz, D₂O, pD ~ 6): δ (ppm) 3.52-3.14 (14H, m, NCH₂CO₂⁻, NCH₂CONHCH₂CH₂CH₂CH₃); 2.91 (4H, broad, s, NCH₂CH₂N); 2.73, 2.70 (2H, broad, d NCH₂CH₂N); 2.49 (broad, s NCH₂CH₂N); 1.49-1.40 (4H, m, NCH₂CH₂CH₂CH₃); 1.32-1.23 (NCH₂CH₂CH₂CH₃); 0.88-0.80 (NCH₂CH₂CH₂CH₃). ¹³C NMR (63 MHz) 180.9, 180.4, 179.8, 179.6 (CO₂⁻); 175.7, 175.5, 174.5, 174.4 (CONH); 66.1, 62.9, 61.2 (NCH₂CONH; NCH₂CO₂); 58.1, 55.9 (NCH₂CH₂NCH₂CH₂N); 40.0, 39.5, 39.8 (NCH₂CH₂CH₂CH₃); 30.1 (NCH₂CH₂CH₂CH₃); 19.5, 19.3, 19.2 (NCH₂CH₂CH₂CH₃); 12.9 (-CH₃).

Elemental analysis: Calculated for [YC₂₂H₃₈N₅O₈·H₂O]: 43.5% C; 6.6% H; 11.5% N. Found: 43.3% C; 6.3 % H; 11.3 % N.

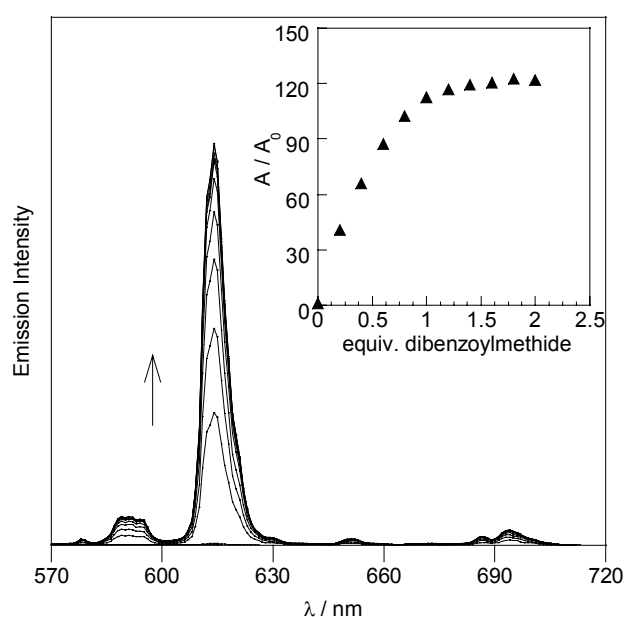


Figure S1. Emission spectra recorded upon titration of 5 μ l increments dibenzoylmethide to a solution of EuL^a 1.5×10^{-5} mol \cdot dm⁻³ in DMF with 1 % H₂O. Inset: a plot of relative area increase of the band at 615 nm vs. equivalents of dibenzoylmethide.

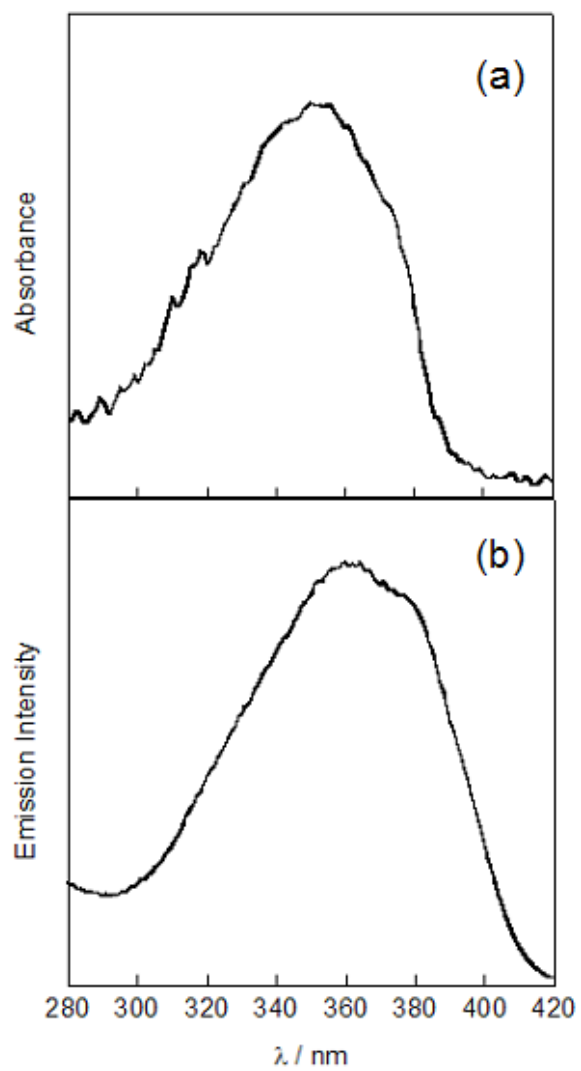


Figure S2. Absorption (a) and excitation (b) spectra of $(\text{HNEt}_3)[\text{Eu}_2\text{L}^{\text{a}}\text{L}^{\text{b}}]$ in DMF, 1% H_2O . The excitation spectrum was corrected for lamp and instrument response; the luminescence signal was monitored at $\lambda_{\text{em}} = 615$ nm.