

Wheel-like $\{\text{Ln}_6\}$ luminescent lanthanide complexes covering visible and near-infrared domains

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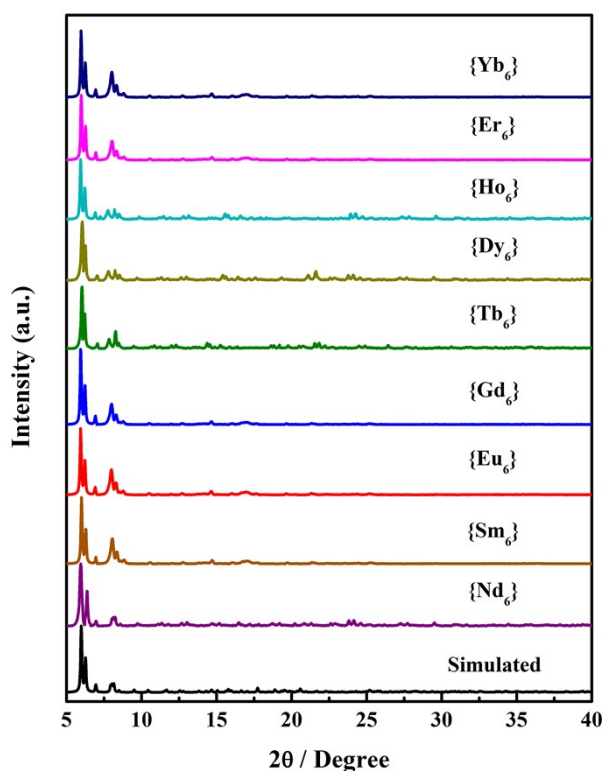


Fig. S1 Powder X-ray diffraction patterns of $\{\text{Ln}_6\}$ in the range from 5 to 40 degrees.

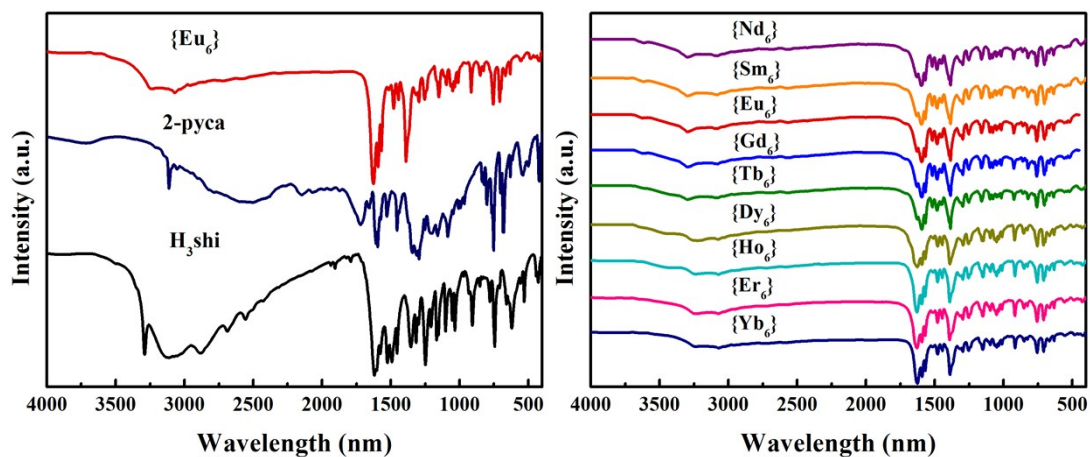


Fig. S2 IR spectra of H₃shi, 2-pyca and {Eu₆} in the solid state (KBr disk) at room temperature (left); IR spectra of complexes {Ln₆} (right).

Table S1. Selected bond distances (Å) for {Eu₆}.

{Eu ₆ }					
Eu(1)–O(8)	2.354(4)	Eu(2)–O(10)	2.356(4)	Eu(3)–O(18)	2.366(4)
Eu(1)–O(21)	2.366(4)	Eu(2)–O(19)	2.368(4)	Eu(3)–O(17)	2.379(4)
Eu(1)–O(20)	2.434(4)	Eu(2)–O(6)	2.401(4)	Eu(3)–O(2)	2.386(4)
Eu(1)–O(4)	2.443(4)	Eu(2)–O(2)	2.434(4)	Eu(3)–O(16)	2.432(4)
Eu(1)–O(6)	2.443(4)	Eu(2)–O(3)	2.437(4)	Eu(3)–O(8)#1	2.455(4)
Eu(1)–O(7)#1	2.432(6)	Eu(2)–O(9)#1	2.446(4)	Eu(3)–O(5)	2.456(4)
Eu(1)–O(9)#1	2.529(4)	Eu(2)–O(5)	2.534(4)	Eu(3)–O(7)	2.495(4)
Eu(1)–N(9)#1	2.647(5)	Eu(2)–N(6)	2.631(5)	Eu(3)–N(8)	2.625(5)
Eu(1)–N(7)	2.687(5)	Eu(2)–N(2)#1	2.704(5)	Eu(3)–N(5)	2.663(5)

Symmetry transformations used to generate equivalent atoms: #1 -x+1, -y+1, -z+1

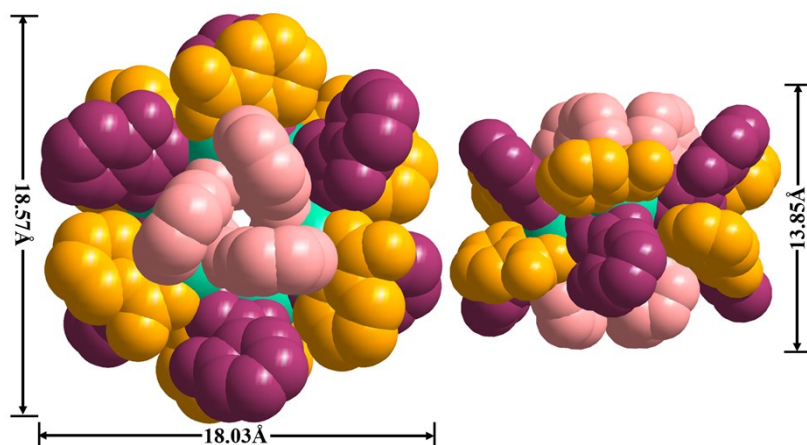


Fig. S3 Molecular structure of the top view (left) and side view (right), with the ligands colored differently to highlight the alternate pattern.

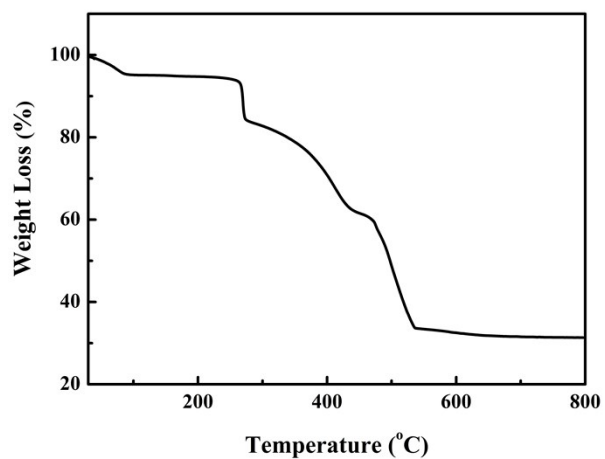


Fig. S4 Thermogravimetric curve of $\{Eu_6\}$.

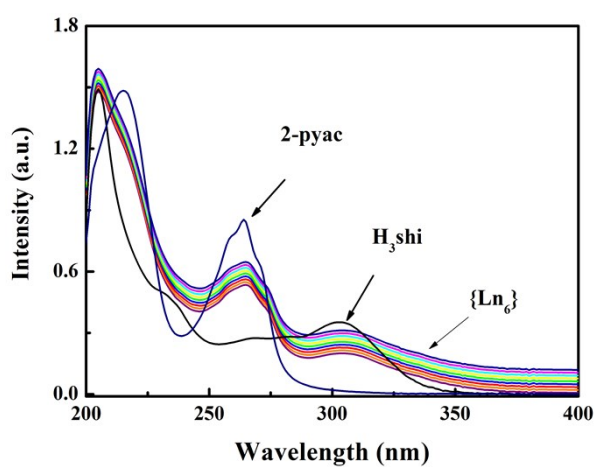


Fig. S5 UV-vis absorption spectra of H_3shi , 2-pyca and $\{Ln_6\}$ in methanol solution at 1.0×10^{-5} M at room temperature.

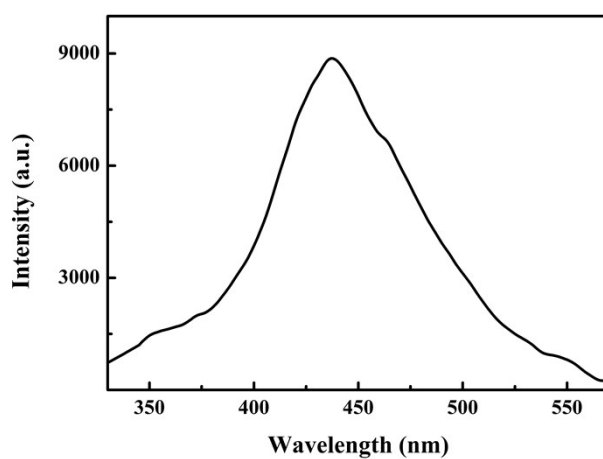


Fig. S6 Phosphorescence spectra of $\{Gd_6\}$ in the solid-state at low-temperature (77 K).

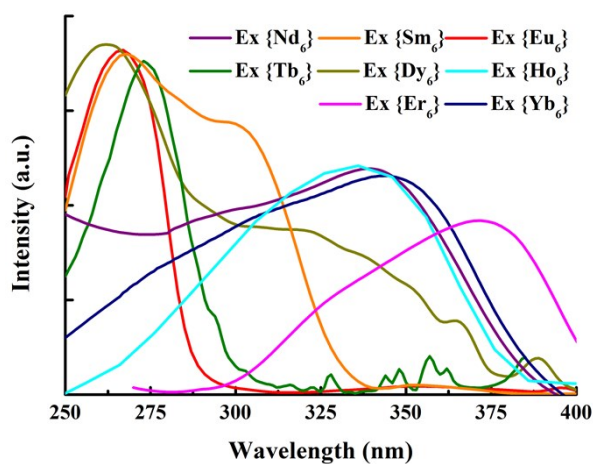


Fig. S7 Excitation spectra of the $\{\text{Ln}_6\}$ in the solid state.

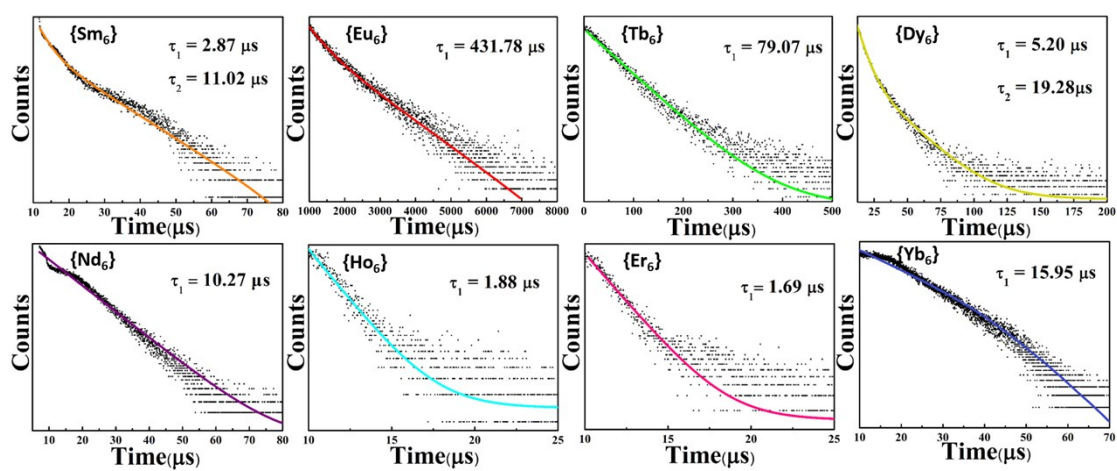


Fig. S8 Emission lifetimes for complexes $\{\text{Ln}_6\}$.