A series of lanthanide(III) complexes constructed from Schiff base and β-diketonate ligands

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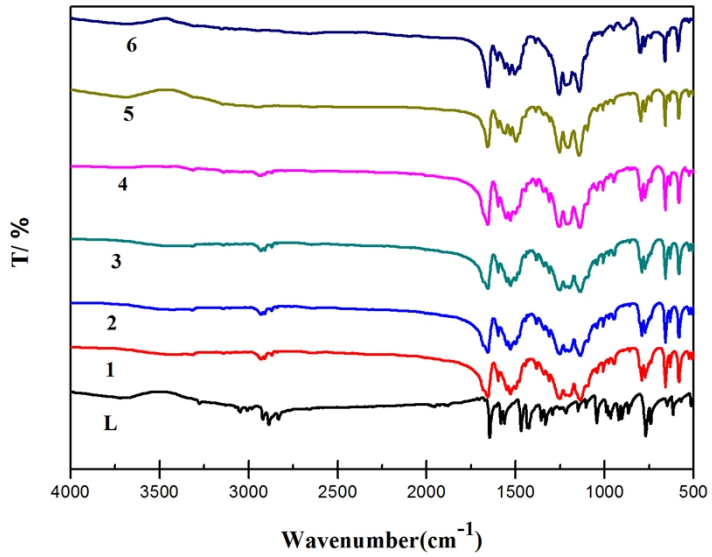

Fig. S1 Infrared spectra of complexes **1-6**

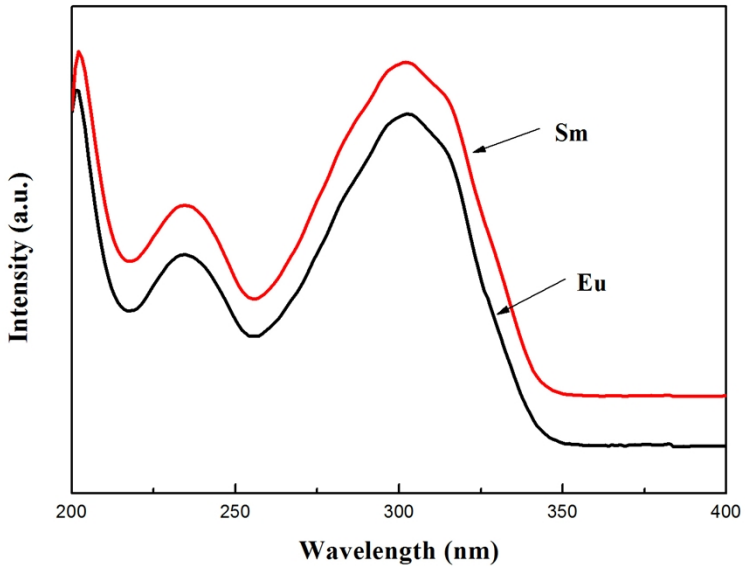

Fig. S2 UV spectra of complexes **2** and **3**

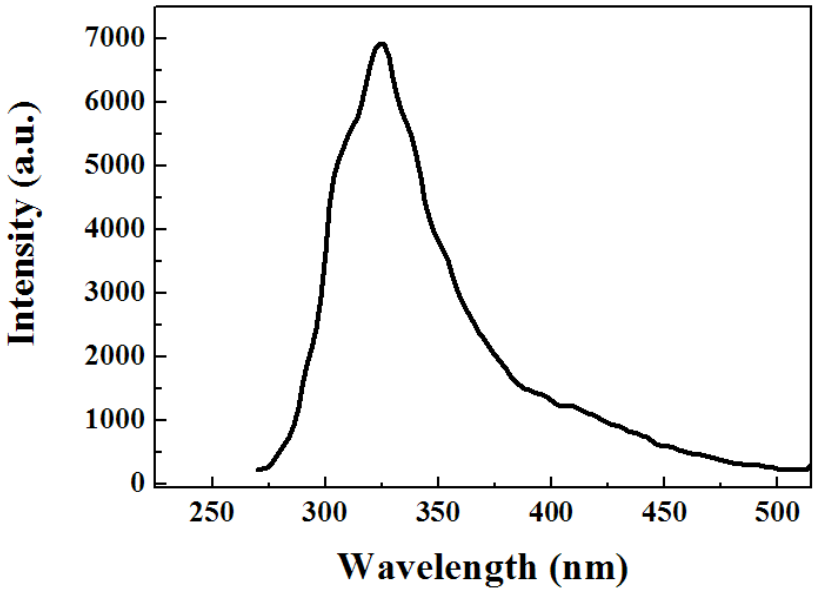

Fig. S3 luminescence spectrum of the Schiff base ligand L in in MeOH solution at room temperature.

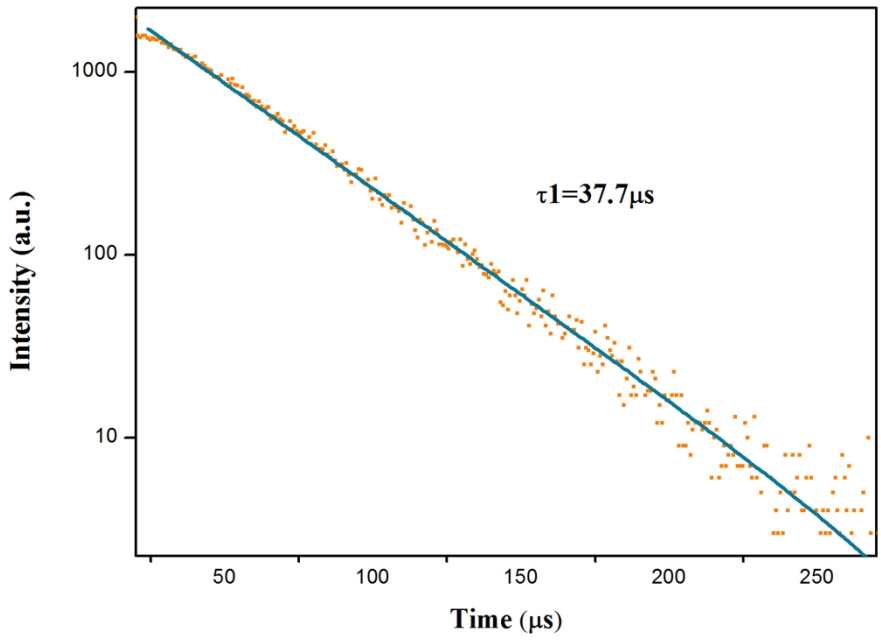

Fig. S4 Luminescence decay profiles for complex **2** in MeOH solution

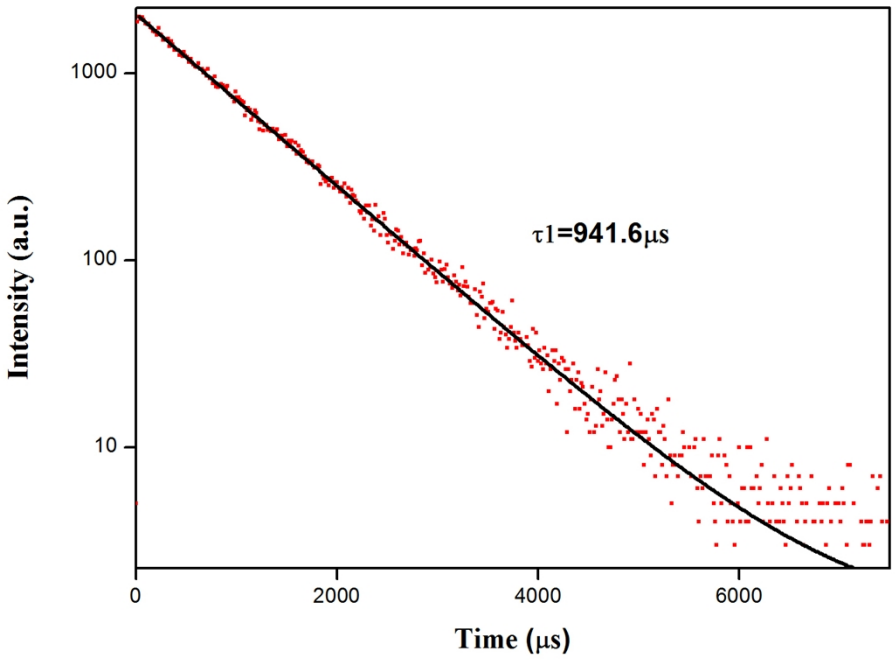

Fig. S5 Luminescence decay profiles for complex **3** in MeOH solution

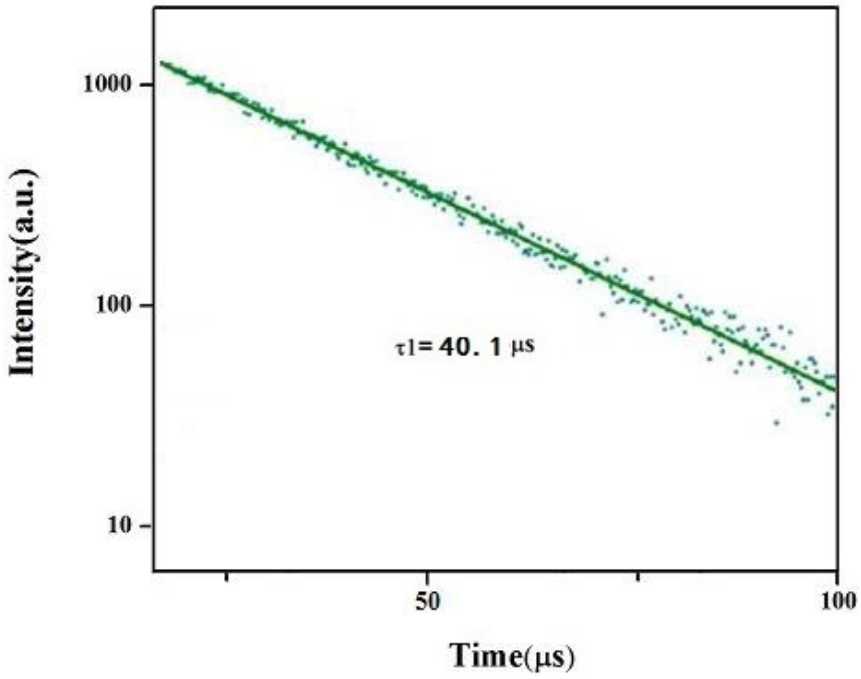

Fig. S6 Luminescence decay profiles for complex **2** in solid state

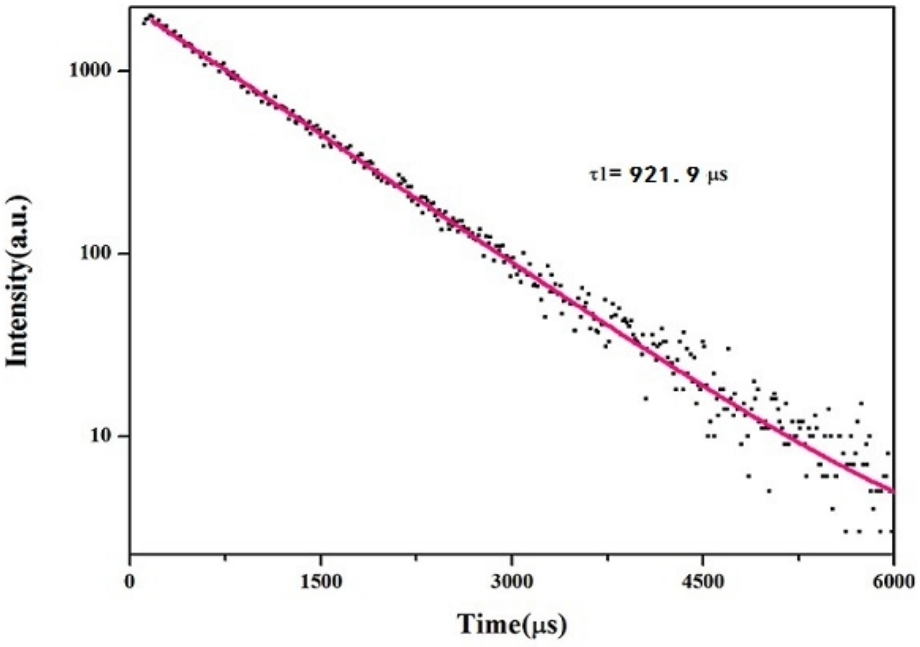

Fig. S7 Luminescence decay profiles for complex **3** in solid state

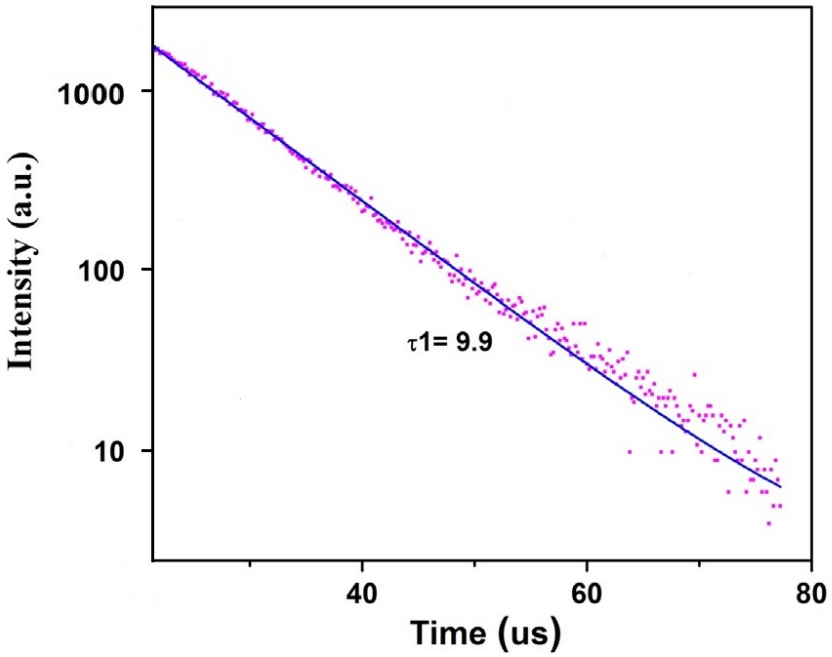

Fig. S8 Luminescence decay profiles for complex **6** in MeOH solution

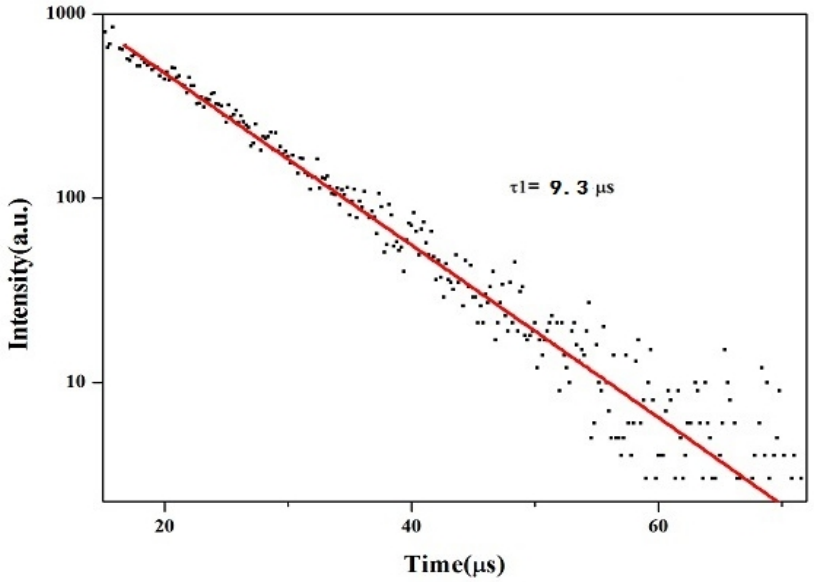

Fig. S9 Luminescence decay profiles for complex **6** in solid state

Table S1 Selected bond distances (Å) for **1**–**3**

Complex **1**			
Nd(1)–O(2)	2.461(7)	Nd(1)–O(5)	2.490(6)
Nd(1)–O(4)	2.495(6)	Nd(1)–O(3)	2.503(6)
Nd(1)–O(1)	2.526(6)	Nd(1)–O(6)	2.548(8)
Nd(1)–N(3)	2.621(8)	Nd(1)–N(1)	2.696(8)
Nd(1)–N(4)	2.705(9)	Nd(1)–N(2)	2.714(9)
Complex **2**			
Sm(1)-O(4)	2.423(7)	Sm(1)-O(1)	2.460(6)
Sm(1)-O(6)	2.467(6)	Sm(1)-O(5)	2.480(7)
Sm(1)-O(3)	2.500(6)	Sm(1)-O(2)	2.512(7)
Sm(1)-N(2)	2.617(8)	Sm(1)-N(1)	2.689(8)
Sm(1)-N(3)	2.692(8)	Sm(1)-N(4)	2.709(8)
Complex **3**			
Eu(1)-O(4)	2.395(7)	Eu(1)-O(6)	2.436(7)
Eu(1)-O(2)	2.461(7)	Eu(1)-O(3)	2.472(7)
Eu(1)-O(1)	2.473(7)	Eu(1)-O(5)	2.519(8)
Eu(1)-N(2)	2.616(9)	Eu(1)-N(3)	2.670(10)
Eu(1)-N(4)	2.698(10)	Eu(1)-N(1)	2.708(9)

Table S2 Selected bond distances (Å) for 4

Gd(1)–O(6)	2.345(15)	Gd(1)–O(10)	2.359(17)
Gd(1)–O(7)	2.366(16)	Gd(1)–O(9)	2.404(18)
Gd(1)–O(11)	2.456(15)	Gd(1)–O(8)	2.503(14)
Gd(1)–O(12)	2.520(17)	Gd(1)–N(1)	2.626(18)
Gd(1)–N(2)	2.658(15)	Gd(2)–O(14)	2.343(14)
Gd(2)–O(20)	2.380(16)	Gd(2)–O(15)	2.395(17)
Gd(2)–O(17)	2.399(19)	Gd(2)–O(18)	2.455(15)
Gd(2)–O(19)	2.466(17)	Gd(2)–O(16)	2.497(16)
Gd(2)–N(4)	2.617(19)	Gd(2)–N(3)	2.651(15)
Gd(3)–O(5)	2.353(14)	Gd(3)–O(2)	2.390(17)
Gd(3)–O(3)	2.394(16)	Gd(3)–O(1)	2.419(16)
Gd(3)–O(4)	2.467(15)	Gd(3)–N(7)	2.53(2)
Gd(3)–N(6)	2.572(19)	Gd(3)–N(5)	2.635(19)
Gd(3)–N(8)	2.650(19)	Gd(4)–O(13)	2.322(15)
Gd(4)–O(22)	2.395(16)	Gd(4)–O(24)	2.40(2)
Gd(4)–O(23)	2.416(18)	Gd(4)–O(21)	2.448(18)
Gd(4)–N(11)	2.54(2)	Gd(4)–N(10)	2.58(2)
Gd(4)–N(9)	2.60(2)	Gd(4)–N(12)	2.68(2)

Table S3 Selected bond distances (Å) for 5

Dy(1)–O(17)	2.285(5)	Dy(1)–O(8)	2.384(6)
Dy(1)–O(5)	2.399(5)	Dy(1)–O(7)	2.400(6)
Dy(1)–O(6)	2.413(5)	Dy(1)–N(3)	2.501(7)
Dy(1)–N(4)	2.545(7)	Dy(1)–N(1)	2.586(6)
Dy(1)–N(2)	2.612(7)	Dy(2)–O(13)	2.267(5)
Dy(2)–O(4)	2.369(5)	Dy(2)–O(2)	2.388(5)
Dy(2)–O(1)	2.399(5)	Dy(2)–O(3)	2.419(5)
Dy(2)–N(8)	2.506(7)	Dy(2)–N(7)	2.571(7)
Dy(2)–N(6)	2.574(6)	Dy(2)–N(5)	2.621(8)
Dy(3)–O(32)	2.311(6)	Dy(3)–O(15)	2.337(6)
Dy(3)–O(16)	2.339(6)	Dy(3)–O(9)	2.349(7)
Dy(3)–O(14)	2.350(6)	Dy(3)–O(12)	2.360(7)
Dy(3)–O(11)	2.361(6)	Dy(3)–O(33)	2.415(7)

Table S4 Selected bond distances (Å) for 6

Yb(1)–O(3a)	2.290(5)	Yb(1)–O(3)	2.290(5)
Yb(1)–O(2)	2.311(6)	Yb(1)–O(2a)	2.311(6)
Yb(1)–O(1a)	2.324(6)	Yb(1a)–O(1)	2.324(6)
Yb(1)–O(4)	2.349(6)	Yb(1)–O(4a)	2.349(6)
Yb(2)–O(5)	2.272(7)	Yb(2)–O(5a)	2.272(7)
Yb(2)–O(6a)	2.286(6)	Yb(2)–O(6)	2.286(6)
Yb(2)–N(2)	2.401(7)	Yb(2)–N(2a)	2.401(7)
Yb(2)–N(1a)	2.459(7)	Yb(2)–N(1)	2.459(7)