Electronic Supplementary Material (ESI) for Dalton Transactions
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Supporting Information for the Manuscript:

Syntheses, Structures, Tunable Emission and White Light Emitting Eu^{3+} and Tb^{3+} Doped Lanthanide Metal–Organic Framework Materials

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Fig. S9 Emission spectra of $Eu_xTb_yLa_{1-x-y}L$ excitation under 367 nm.

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Table S1. Cell parameters of all LnL.

$C_{38}H_{38}Ln_2N_2O_{21}$ (Ln = La (**1**), Ce (**2**), Pr (**3**), Nd (**4**), Sm (**5**), Eu (**6**), Gd (**7**), Tb (**8**), Ho (**9**), Er (**10**)), Space group, $C222_1$, $\alpha = \beta = \gamma = 90^{o}$.

Ln	*a* (Å)	*b* (Å)	*c* (Å)	*V* (Å^3)
La	14.8136(16)	16.7954(18)	16.8191(13)	4184.6(7)
Ce	14.6157(7)	16.8945(8)	16.7573(7)	4137.8(3)
Pr	14.6650(12)	16.7949(10)	16.7292(9)	4120.4(5)
Nd	14.6250(3)	16.7460(2)	16.6708(17)	4083(1)
Sm	14.6026(4)	16.6301(4)	16.6617(5)	4046.17(19)
Eu	14.6077(6)	16.5568(6)	16.6303(7)	4022.2(3)
Gd	14.6484(8)	16.4358(7)	16.5923(8)	3994.7(3)
Tb	14.6702(6)	16.3686(5)	16.5747(7)	3980.1(3)
Ho	14.8589(18)	16.1115(14)	16.5249(10)	3956.0(6)
Er	14.6800(8)	16.1912(9)	16.5067(6)	3923.4(3)

Table S2. Crystal data and structure refinement for compounds **3**、**5**、**6**、**7** and **8**.

Compound	**3**	**5**	**6**	**7**	**8**
Formula	$C_{38}H_{38}N_2O_{21}Pr_2$	$C_{38}H_{38}N_2O_{21}Sm_2$	$C_{38}H_{38}N_2O_{21}Eu_2$	$C_{38}H_{38}N_2O_{21}Gd_2$	$C_{38}H_{38}N_2O_{21}Tb_2$
fw	1140.52	1159.40	1162.62	1173.20	1176.54
Crystal system	Orthorhombic	Orthorhombic	Orthorhombic	Orthorhombic	Orthorhombic
Space group	$C222_1$	$C222_1$	$C222_1$	$C222_1$	$C222_1$
a (Å)	14.6650(12)	14.6026(4)	14.6077(6)	14.6484(8)	14.6702(6)
b (Å)	16.7949(10)	16.6301(4)	16.5568(6)	16.4358(7)	16.3686(5)
c (Å)	16.7292(9)	16.6617(5)	16.6303(7)	16.5923(8)	16.5747(7)
α (°)	90	90	90	90	90
β (°)	90	90	90	90	90
γ (°)	90	90	90	90	90
V (Å^3)	4120.4(5)	4046.17(19)	4022.2(3)	3994.7(3)	3980.1(3)
Z	4	4	4	4	4
Dc (Mg·m^3)	1.839	1.903	1.920	1.951	1.963
F(000)	2264	2288	2296	2304	2312
Reflns collected	5202	5102	7635	5307	7432
Independent reflns	3464	3463	3541	3241	3497
R(int)	0.0394	0.0353	0.0329	0.0293	0.0359
GOF on F^2	1.084	1.096	1.060	1.057	1.098
$R_1{}^a$ ($I>2\sigma(I)$)	0.0659	0.0567	0.0556	0.0528	0.0528
$wR_2{}^b$ ($I>2\sigma(I)$)	0.1546	0.1326	0.1378	0.1342	0.1276

$^aR_1 = \sum||F_o|-|F_c||/\sum|F_o|$. $^bwR_2 = [\sum w(F_o^2-F_c^2)^2/\sum w(F_o^2)^2]^{1/2}$

Table S3. Selected Bond Distances and Angles for Compounds **3**、**5**、**6**、**7** and **8**.

Compound **3**[a]			
Pr(1)–O(7)#1	2.375(12)	Pr(1)–O(7)	2.375(12)
Pr(1)–O(2)	2.422(9)	Pr(1)–O(2)#1	2.422(9)
Pr(1)–O(8)#2	2.552(11)	Pr(1)–O(8)#3	2.552(11)
Pr(1)–O(9)#2	2.557(11)	Pr(1)–O(9)#3	2.557(11)
Pr(1)–C(10)#2	2.940(15)	Pr(1)–C(10)#3	2.940(15)
Pr(2)–O(1)#4	2.349(11)	Pr(2)–O(1)	2.349(11)
Pr(2)-O(6)#4	2.423(9)	Pr(2)-O(6)	2.423(9)
Pr(2)–O(4)#5	2.537(12)	Pr(2)–O(4)#6	2.537(12)
Pr(2)–O(3)#6	2.559(14)	Pr(2)–O(3)#5	2.559(14)
O(7)#1–Pr(1)–O(7)	85.4(6)	O(7)#1–Pr(1)–O(2)	83.7(3)
O(7)–Pr(1)–O(2)	82.9(3)	O(7)#1–Pr(1)–O(2)#1	82.9(3)
O(7)–Pr(1)–O(2)#1	83.7(3)	O(2)–Pr(1)–O(2)#1	161.8(4)
O(7)#1–Pr(1)–O(8)#2	155.0(3)	O(7)–Pr(1)–O(8)#2	99.4(5)
O(2)–Pr(1)–O(8)#2	72.6(3)	O(2)#1–Pr(1)–O(8)#2	121.9(3)
O(7)#1–Pr(1)–O(8)#3	99.4(5)	O(7)–Pr(1)–O(8)#3	155.0(3)
O(2)–Pr(1)–O(8)#3	121.9(3)	O(2)#1–Pr(1)–O(8)#3	72.6(3)
O(8)#2-Pr(1)-O(8)#3	86.6(8)	O(7)#1-Pr(1)-O(9)#2	154.1(3)
O(7)–Pr(1)–O(9)#2	83.3(4)	O(2)–Pr(1)–O(9)#2	117.7(3)
O(2)#1–Pr(1)–O(9)#2	72.7(3)	O(8)#2–Pr(1)–O(9)#2	50.6(3)
O(8)#3–Pr(1)–O(9)#2	82.0(5)	O(7)#1–Pr(1)–O(9)#3	83.3(4)
O(7)–Pr(1)–O(9)#3	154.1(3)	O(2)–Pr(1)–O(9)#3	72.7(3)
O(2)#1–Pr(1)–O(9)#3	117.7(3)	O(8)#2–Pr(1)–O(9)#3	82.0(5)
O(8)#3–Pr(1)–O(9)#3	50.6(3)	O(9)#2–Pr(1)–O(9)#3	115.7(5)
O(1)#4–Pr(2)–O(1)	92.4(7)	O(1)#4–Pr(2)–O(6)#4	83.6(3)
O(1)–Pr(2)–O(6)#4	81.5(3)	O(1)#4–Pr(2)–O(6)	81.5(3)
O(1)–Pr(2)–O(6)	83.6(3)	O(6)#4–Pr(2)–O(6)	158.5(5)

O(1)#4–Pr(2)–O(4)#5	91.2(5)	O(1)–Pr(2)–O(4)#5	153.6(4)
O(6)#4–Pr(2)–O(4)#5	72.9(4)	O(6)–Pr(2)–O(4)#5	122.8(4)
O(1)#4–Pr(2)–O(4)#6	153.6(4)	O(1)–Pr(2)–O(4)#6	91.2(5)
O(6)#4–Pr(2)–O(4)#6	122.8(4)	O(6)–Pr(2)–O(4)#6	72.9(4)
O(4)#5–Pr(2)–O(4)#6	97.2(8)	O(1)#4–Pr(2)–O(3)#6	157.7(4)
O(1)–Pr(2)–O(3)#6	86.3(5)	O(6)#4–Pr(2)–O(3)#6	74.1(4)
O(6)–Pr(2)–O(3)#6	120.4(4)	O(4)#5–Pr(2)–O(3)#6	80.6(5)
O(4)#6–Pr(2)–O(3)#6	48.7(4)	O(1)#4–Pr(2)–O(3)#5	86.3(5)
O(1)–Pr(2)–O(3)#5	157.7(4)	O(6)#4–Pr(2)–O(3)#5	120.4(4)
O(6)–Pr(2)–O(3)#5	74.1(4)	O(4)#5–Pr(2)–O(3)#5	48.7(4)
O(4)#6–Pr(2)–O(3)#5	80.6(5)	O(3)#6–Pr(2)–O(3)#5	103.1(7)
Compound **5**[b]			
Sm(1)–O(2)#1	2.333(9)	Sm(1)–O(2)	2.333(9)
Sm(1)–O(7)	2.373(9)	Sm(1)–O(7)#1	2.373(9)
Sm(1)–O(4)#2	2.519(10)	Sm(1)–O(4)#3	2.519(10)
Sm(1)–O(3)#2	2.535(9)	Sm(1)–O(3)#3	2.535(9)
Sm(2)–O(6)#4	2.278(10)	Sm(2)–O(6)	2.278(10)
Sm(2)–O(1)#4	2.381(9)	Sm(2)–O(1)	2.381(9)
Sm(2)–O(8)#5	2.481(11)	Sm(2)–O(8)#6	2.481(11)
Sm(2)–O(9)#6	2.538(13)	Sm(2)–O(9)#5	2.538(13)
O(2)#1–Sm(1)–O(2)	86.3(6)	O(2)#1–Sm(1)–O(7)	83.8(3)
O(2)–Sm(1)–O(7)	82.5(3)	O(2)#1–Sm(1)–O(7)#1	82.5(3)
O(2)–Sm(1)–O(7)#1	83.8(3)	O(7)–Sm(1)–O(7)#1	161.1(4)
O(2)#1–Sm(1)–O(4)#2	154.5(3)	O(2)–Sm(1)–O(4)#2	100.1(5)
O(7)–Sm(1)–O(4)#2	72.8(3)	O(7)#1–Sm(1)–O(4)#2	122.5(3)
O(2)#1–Sm(1)–O(4)#3	100.1(5)	O(2)–Sm(1)–O(4)#3	154.5(3)
O(7)–Sm(1)–O(4)#3	122.5(3)	O(7)#1–Sm(1)–O(4)#3	72.8(3)
O(4)#2–Sm(1)–O(4)#3	84.7(7)	O(2)#1–Sm(1)–O(3)#2	153.9(3)
O(2)–Sm(1)–O(3)#2	82.8(4)	O(7)–Sm(1)–O(3)#2	118.0(3)

O(7)#1–Sm(1)–O(3)#2	72.8(3)	O(4)#2–Sm(1)–O(3)#2	51.5(3)
O(4)#3–Sm(1)–O(3)#2	80.8(4)	O(2)#1–Sm(1)–O(3)#3	82.8(4)
O(2)–Sm(1)–O(3)#3	153.9(3)	O(7)–Sm(1)–O(3)#3	72.8(3)
O(7)#1–Sm(1)–O(3)#3	118.0(3)	O(4)#2–Sm(1)–O(3)#3	80.8(4)
O(4)#3–Sm(1)–O(3)#3	51.5(3)	O(3)#2–Sm(1)–O(3)#3	116.1(5)
O(6)#4–Sm(2)–O(6)	92.4(7)	O(6)#4–Sm(2)–O(1)#4	82.8(3)
O(6)–Sm(2)–O(1)#4	82.3(3)	O(6)#4–Sm(2)–O(1)	82.3(3)
O(6)–Sm(2)–O(1)	82.8(3)	O(1)#4–Sm(2)–O(1)	158.4(4)
O(6)#4–Sm(2)–O(8)#5	90.8(5)	O(6)–Sm(2)–O(8)#5	154.1(3)
O(1)#4–Sm(2)–O(8)#5	72.6(3)	O(1)–Sm(2)–O(8)#5	123.1(3)
O(6)#4–Sm(2)–O(8)#6	154.1(3)	O(6)–Sm(2)–O(8)#6	90.8(5)
O(1)#4–Sm(2)–O(8)#6	123.1(3)	O(1)–Sm(2)–O(8)#6	72.6(3)
O(8)#5–Sm(2)–O(8)#6	97.4(8)	O(6)#4–Sm(2)–O(9)#6	155.9(4)
O(6)–Sm(2)–O(9)#6	86.3(5)	O(1)#4–Sm(2)–O(9)#6	73.2(4)
O(1)–Sm(2)–O(9)#6	121.3(4)	O(8)#5–Sm(2)–O(9)#6	80.5(5)
O(8)#6–Sm(2)–O(9)#6	50.0(4)	O(6)#4–Sm(2)–O(9)#5	86.3(5)
O(6)–Sm(2)–O(9)#5	155.9(4)	O(1)#4–Sm(2)–O(9)#5	121.3(4)
O(1)–Sm(2)–O(9)#5	73.2(4)	O(8)#5–Sm(2)–O(9)#5	50.0(4)
O(8)#6–Sm(2)–O(9)#5	80.5(5)	O(9)#6–Sm(2)–O(9)#5	104.5(6)
Compound **6**[c]			
Eu(1)–O(1)#1	2.286(10)	Eu(1)–O(1)	2.286(10)
Eu(1)–O(8)#2	2.366(9)	Eu(1)–O(8)#3	2.366(9)
Eu(1)–O(4)#2	2.475(12)	Eu(1)–O(4)#3	2.475(12)
Eu(1)–O(3)#2	2.517(13)	Eu(1)–O(3)#3	2.517(13)
Eu(2)–O(9)#4	2.309(11)	Eu(2)–O(9)#3	2.309(11)
Eu(2)–O(2)	2.371(8)	Eu(2)–O(2)#5	2.371(8)
Eu(2)–O(7)	2.495(10)	Eu(2)–O(7)#5	2.495(10)
Eu(2)–O(6)#5	2.509(9)	Eu(2)–O(6)	2.509(9)
O(1)#1–Eu(1)–O(1)	92.6(5)	O(1)#1–Eu(1)–O(8)#2	82.7(3)

O(1)–Eu(1)–O(8)#2	82.2(3)	O(1)#1–Eu(1)–O(8)#3	82.2(3)
O(1)–Eu(1)–O(8)#3	82.7(3)	O(8)#2–Eu(1)–O(8)#3	158.0(4)
O(1)#1–Eu(1)–O(4)#2	153.7(4)	O(1)–Eu(1)–O(4)#2	90.1(4)
O(8)#2–Eu(1) –O(4)#2	123.6(4)	O(8)#3–Eu(1)–O(4)#2	72.2(4)
O(1)#1–Eu(1)–O(4)#3	90.1(4)	O(1)–Eu(1)–O(4)#3	153.7(4)
O(8)#2–Eu(1)–O(4)#3	72.2(4)	O(8)#3–Eu(1)–O(4)#3	123.6(4)
O(4)#2–Eu(1)–O(4)#3	99.0(6)	O(1)#1–Eu(1)–O(3)#2	155.4(4)
O(1)–Eu(1)–O(3)#2	85.9(4)	O(8)#2–Eu(1)–O(3)#2	72.8(4)
O(8)#3–Eu(1)–O(3)#2	121.8(4)	O(4)#2–Eu(1)–O(3)#2	50.9(4)
O(4)#3–Eu(1)–O(3)#2	81.0(4)	O(1)#1–Eu(1)–O(3)#3	85.9(4)
O(1)–Eu(1)–O(3)#3	155.4(4)	O(8)#2–Eu(1)–O(3)#3	121.8(4)
O(8)#3–Eu(1)–O(3)#3	72.8(4)	O(4)#2–Eu(1)–O(3)#3	81.0(4)
O(4)#3–Eu(1)–O(3)#3	50.9(4)	O(3)#2–Eu(1)–O(3)#3	105.3(6)
O(9)#4–Eu(2)–O(9)#3	85.2(6)	O(9)#4–Eu(2)–O(2)	83.9(3)
O(9)#3–Eu(2)–O(2)	81.7(3)	O(9)#4–Eu(2)–O(2)#5	81.7(3)
O(9)#3–Eu(2)–O(2)#5	83.9(3)	O(2)–Eu(2)–O(2)#5	160.4(4)
O(9)#4–Eu(2)–O(7)	101.1(4)	O(9)#3–Eu(2)–O(7)	154.8(3)
O(2)–Eu(2)–O(7)	123.1(3)	O(2)#5–Eu(2)–O(7)	73.0(3)
O(9)#4–Eu(2)–O(7)#5	154.8(3)	O(9)#3–Eu(2)–O(7)#5	101.1(4)
O(2)–Eu(2)–O(7)#5	73.0(3)	O(2)#5–Eu(2)–O(7)#5	123.1(3)
O(7)–Eu(2)–O(7)#5	83.6(5)	O(9)#4–Eu(2)–O(6)#5	153.3(3)
O(9)#3–Eu(2)–O(6)#5	83.3(4)	O(2)–Eu(2)–O(6)#5	118.0(3)
O(2)#5–Eu(2)–O(6)#5	73.2(3)	O(7)–Eu(2)–O(6)#5	80.3(4)
O(7)#5–Eu(2)–O(6)#5	51.8(3)	O(9)#4–Eu(2)–O(6)	83.3(4)
O(9)#3–Eu(2)–O(6)	153.3(3)	O(2)–Eu(2)–O(6)	73.2(3)
O(2)#5–Eu(2)–O(6)	118.0(3)	O(7)–Eu(2)–O(6)	51.8(3)
O(7)#5–Eu(2)–O(6)	80.3(4)	O(6)#5–Eu(2)–O(6)	116.3(5)
Compound **7**[d]			
Gd(1)–O(6)#1	2.287(8)	Gd(1)–O(6)#2	2.287(8)

Gd(1)–O(1)	2.360(7)	Gd(1)–O(1)#3	2.360(7)
Gd(1)–O(9)#4	2.452(9)	Gd(1)–O(9)#5	2.452(9)
Gd(1)–O(8)#4	2.497(9)	Gd(1)–O(8)#5	2.497(9)
Gd(2)–O(2)#2	2.286(7)	Gd(2)–O(2)	2.286(7)
Gd(2)–O(7)	2.353(7)	Gd(2)–O(7)#2	2.353(7)
Gd(2)–O(4)#6	2.480(8)	Gd(2)–O(4)#7	2.480(8)
Gd(2)–O(3)#7	2.501(8)	Gd(2)–O(3)#6	2.501(8)
O(6)#1–Gd(1)–O(6)#2	93.3(6)	O(6)#1–Gd(1)–O(1)	82.6(3)
O(6)#2–Gd(1)–O(1)	81.7(2)	O(6)#1–Gd(1)–O(1)#3	81.7(2)
O(6)#2–Gd(1)–O(1)#3	82.6(2)	O(1)–Gd(1)–O(1)#3	157.1(3)
O(6)#1–Gd(1)–O(9)#4	90.3(4)	O(6)#2–Gd(1)–O(9)#4	154.1(3)
O(1)–Gd(1)–O(9)#4	124.2(3)	O(1)#3–Gd(1)–O(9)#4	72.5(3)
O(6)#1–Gd(1)–O(9)#5	154.1(3)	O(6)#2–Gd(1)–O(9)#5	90.3(4)
O(1)–Gd(1)–O(9)#5	72.5(3)	O(1)#3–Gd(1)–O(9)#5	124.2(3)
O(9)#4–Gd(1)–O(9)#5	97.5(7)	O(6)#1–Gd(1)–O(8)#4	85.2(5)
O(6)#2–Gd(1)–O(8)#4	155.8(3)	O(1)–Gd(1)–O(8)#4	74.1(3)
O(1)#3–Gd(1)–O(8)#4	120.9(3)	O(9)#4–Gd(1)–O(8)#4	50.1(3)
O(9)#5–Gd(1)–O(8)#4	81.1(5)	O(6)#1–Gd(1)–O(8)#5	155.8(3)
O(6)#2–Gd(1)–O(8)#5	85.2(5)	O(1)–Gd(1)–O(8)#5	120.9(3)
O(1)#3–Gd(1)–O(8)#5	74.1(3)	O(9)#4–Gd(1)–O(8)#5	81.1(5)
O(9)#5–Gd(1)–O(8)#5	50.1(3)	O(8)#4–Gd(1)–O(8)#5	105.8(8)
O(2)#2–Gd(2)–O(2)	85.8(5)	O(2)#2–Gd(2)–O(7)	81.9(3)
O(2)–Gd(2)–O(7)	83.8(2)	O(2)#2–Gd(2)–O(7)#2	83.8(2)
O(2)–Gd(2)–O(7)#2	81.9(3)	O(7)–Gd(2)–O(7)#2	160.5(3)
O(2)#2–Gd(2)–O(4)#6	99.6(4)	O(2)–Gd(2)–O(4)#6	154.8(3)
O(7)–Gd(2)–O(4)#6	72.8(3)	O(7)#2–Gd(2)–O(4)#6	123.0(3)
O(2)#2–Gd(2)–O(4)#7	154.8(3)	O(2)–Gd(2)–O(4)#7	99.6(4)
O(7)–Gd(2)–O(4)#7	123.0(3)	O(7)#2–Gd(2)–O(4)#7	72.8(3)
O(4)#6–Gd(2)–O(4)#7	85.9(6)	O(2)#2–Gd(2)–O(3)#7	153.4(3)

O(2)–Gd(2)–O(3)#7	82.9(3)	O(7)–Gd(2)–O(3)#7	73.0(2)
O(7)#2–Gd(2)–O(3)#7	118.1(3)	O(4)#6–Gd(2)–O(3)#7	81.4(4)
O(4)#7–Gd(2)–O(3)#7	51.6(3)	O(2)#2–Gd(2)–O(3)#6	82.9(3)
O(2)–Gd(2)–O(3)#6	153.4(3)	O(7)–Gd(2)–O(3)#6	118.1(3)
O(7)#2–Gd(2)–O(3)#6	73.0(2)	O(4)#6–Gd(2)–O(3)#6	51.6(3)
O(4)#7–Gd(2)–O(3)#6	81.4(4)	O(3)#7–Gd(2)–O(3)#6	116.5(4)
Compound **8**[e]			
Tb(1)–O(4)#1	2.261(10)	Tb(1)–O(4)#2	2.261(10)
Tb(1)–O(6)#3	2.342(8)	Tb(1)–O(6)	2.342(8)
Tb(1)–O(2)	2.448(10)	Tb(1)–O(2)#3	2.448(10)
Tb(1)–O(1)	2.481(10)	Tb(1)–O(1)#3	2.481(10)
Tb(2)–O(5)	2.259(10)	Tb(2)–O(5)#4	2.259(10)
Tb(2)–O(3)#5	2.353(8)	Tb(2)–O(3)#2	2.353(8)
Tb(2)–O(8)#5	2.463(10)	Tb(2)–O(8)#2	2.463(10)
Tb(2)–O(7)#5	2.479(10)	Tb(2)–O(7)#2	2.479(10)
O(4)#1–Tb(1)–O(4)#2	92.7(7)	O(4)#1–Tb(1)–O(6)#3	82.5(3)
O(4)#2–Tb(1)–O(6)#3	82.3(3)	O(4)#1–Tb(1)–O(6)	82.3(3)
O(4)#2–Tb(1)–O(6)	82.5(3)	O(6)#3–Tb(1)–O(6)	157.9(5)
O(4)#1–Tb(1)–O(2)	91.5(4)	O(4)#2–Tb(1)–O(2)	154.0(3)
O(6)#3–Tb(1)–O(2)	72.8(3)	O(6)–Tb(1)–O(2)	123.5(3)
O(4)#1–Tb(1)–O(2)#3	154.0(3)	O(4)#2–Tb(1)–O(2)#3	91.5(4)
O(6)#3–Tb(1)–O(2)#3	123.5(3)	O(6)–Tb(1)–O(2)#3	72.8(3)
O(2)–Tb(1)–O(2)#3	95.8(6)	O(4)#1–Tb(1)–O(1)	84.9(4)
O(4)#2–Tb(1)–O(1)	155.4(3)	O(6)#3–Tb(1)–O(1)	121.4(3)
O(6)–Tb(1)–O(1)	72.9(3)	O(2)–Tb(1)–O(1)	50.6(4)
O(2)#3–Tb(1)–O(1)	80.7(4)	O(4)#1–Tb(1)–O(1)#3	155.4(3)
O(4)#2–Tb(1)–O(1)#3	84.9(4)	O(6)#3–Tb(1)–O(1)#3	72.9(3)
O(6)–Tb(1)–O(1)#3	121.4(3)	O(2)–Tb(1)–O(1)#3	80.7(4)
O(2)#3–Tb(1)–O(1)#3	50.6(4)	O(1)–Tb(1)–O(1)#3	107.0(6)

O(5)–Tb(2)–O(5)#4	87.3(7)	O(5)–Tb(2)–O(3)#5	83.8(3)
O(5)#4–Tb(2)–O(3)#5	81.9(3)	O(5)–Tb(2)–O(3)#2	81.9(3)
O(5)#4–Tb(2)–O(3)#2	83.8(3)	O(3)#5–Tb(2)–O(3)#2	160.1(4)
O(5)–Tb(2)–O(8)#5	99.7(5)	O(5)#4–Tb(2)–O(8)#5	155.0(4)
O(3)#5–Tb(2)–O(8)#5	122.6(3)	O(3)#2–Tb(2)–O(8)#5	73.6(3)
O(5)–Tb(2)–O(8)#2	155.0(4)	O(5)#4–Tb(2)–O(8)#2	99.7(5)
O(3)#5–Tb(2)–O(8)#2	73.6(3)	O(3)#2–Tb(2)–O(8)#2	122.6(3)
O(8)#5–Tb(2)–O(8)#2	84.2(7)	O(5)–Tb(2)–O(7)#5	82.1(4)
O(5)#4–Tb(2)–O(7)#5	153.2(3)	O(3)#5–Tb(2)–O(7)#5	72.5(3)
O(3)#2–Tb(2)–O(7)#5	118.7(3)	O(8)#5–Tb(2)–O(7)#5	51.8(3)
O(8)#2–Tb(2)–O(7)#5	81.1(5)	O(5)–Tb(2)–O(7)#2	153.2(3)
O(5)#4–Tb(2)–O(7)#2	82.1(4)	O(3)#5–Tb(2)–O(7)#2	118.7(3)
O(3)#2–Tb(2)–O(7)#2	72.5(3)	O(8)#5–Tb(2)–O(7)#2	81.1(5)
O(8)#2–Tb(2)–O(7)#2	51.8(3)	O(7)#5–Tb(2)–O(7)#2	117.1(6)

Symmetry codes: [a] #1 $-x+2, y, -z+1/2$; #2 $-x+3/2, y-1/2, -z+1/2$; #3 $x+1/2, y-1/2, z$; #4 $x, -y+1, -z$; #5 $x-1/2, y+1/2, z$; #6 $x-1/2, -y+1/2, -z$. [b] #1 $-x+1, y, -z+3/2$; #2 $-x+3/2, y+1/2, -z+3/2$; #3 $x-1/2, y+1/2, z$; #4 $x, -y, -z+1$; #5 $x+1/2, y-1/2, z$; #6 $x+1/2, -y+1/2, -z+1$. [c] #1 $x, -y, -z+1$; #2 $x+1/2, -y+1/2, -z+1$; #3 $x+1/2, y-1/2, z$; #4 $-x+1/2, y-1/2, -z+3/2$; #5 $-x+1, y, -z+3/2$; #6 $x-1/2, y+1/2, z$. [d] #1 $-x, -y, z+1/2$; #2 $-x, y, -z+1/2$; #3 $x, -y, -z+1$; #4 $-x+1/2, y-1/2, -z+1/2$; #5 $-x+1/2, -y+1/2, z+1/2$; #6 $x-1/2, y+1/2, z$; #7 $-x+1/2, y+1/2, -z+1/2$. [e] #1 $x-1/2, -y+1/2, -z+1$; #2 $x-1/2, y-1/2, z$; #3 $x, -y, -z+1$; #4 $-x+1, y, -z+3/2$; #5 $-x+3/2, y-1/2, -z+3/2$.

Table S4 Elemental analysis for the codoped copounds.

LnL	Wt% C Calcd (Found)	Wt% H Calcd (Found)	Wt% N Calcd (Found)
$Eu_{0.19}Tb_{0.81}L$	38.87 (38.75)	3.26 (3.34)	2.39 (2.26)
$Eu_{0.49}Tb_{0.51}L$	39.01 (38.89)	3.34 (3.34)	2.44(2.31)
$Eu_{0.17}Tb_{0.18}La_{0.65}L$	39.75(39.21)	3.46(3.58)	2.40(2.33)
$Eu_{0.16}Tb_{0.19}La_{0.65}L$	39.75(39.54)	3.34(3.46)	2.44(2.38)

Table S5. The Life Time τ for the Luminescence of Eu^{3+} in the TbL: xEu^{3+} samples upon excitation at 324 nm (except x=0 where tau = Tb^{3+}).

	x							
	0	0.1%	0.3%	0.6%	1.6%	4.5%	8.2%	100%
τ (μs)	1453.32	60.94	63.26	66.16	74.71	100.07	81.44	1069.65

Table S6. The corresponding CIE coordinates of the $Eu_xTb_yLa_{1-x-y}L$ excited at 363, 365, 367 and 369 nm.

Excitation wavelength(nm)	**363**	**365**	**367**	**369**
CIE / Sample(La:Eu:Tb)	**X, Y**	**X, Y**	**X, Y**	**X, Y**
0.76:0.12:0.12	0.289, 0.299	0.283, 0.290	0.301, 0.305	0.309, 0.308
0.71:0.15:0.14	0.306, 0.309	0.313, 0.312	0.317, 0.313	0.324, 0.314
0.65:0.17:0.18	0.321, 0.331	0.328, 0.336	**0.330, 0.334**	0.335, 0.335
0.65:0.16:0.19	0.323, 0.336	0.330, 0.342	**0.332, 0.338**	0.337, 0.340

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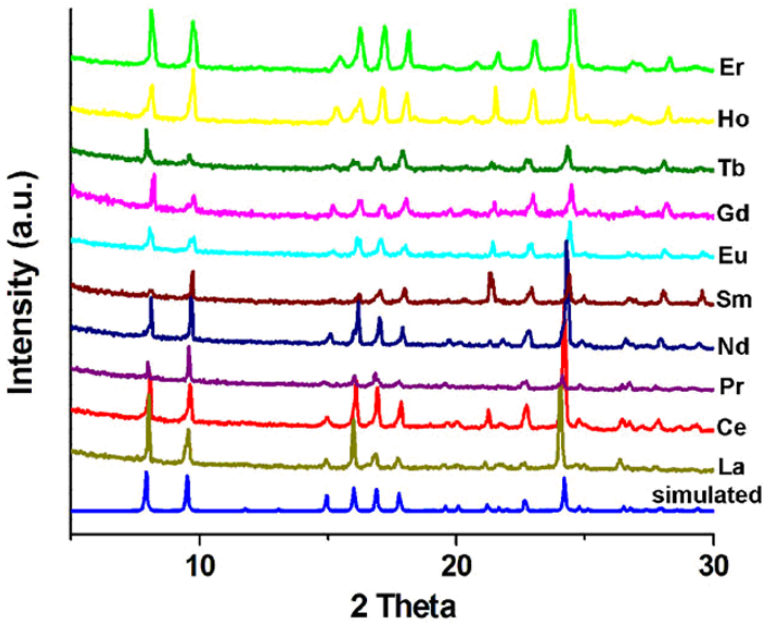
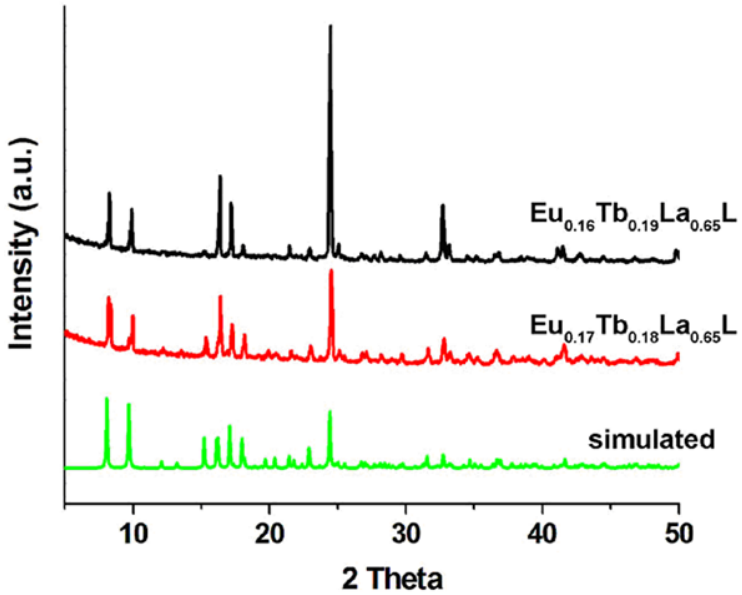


(a)



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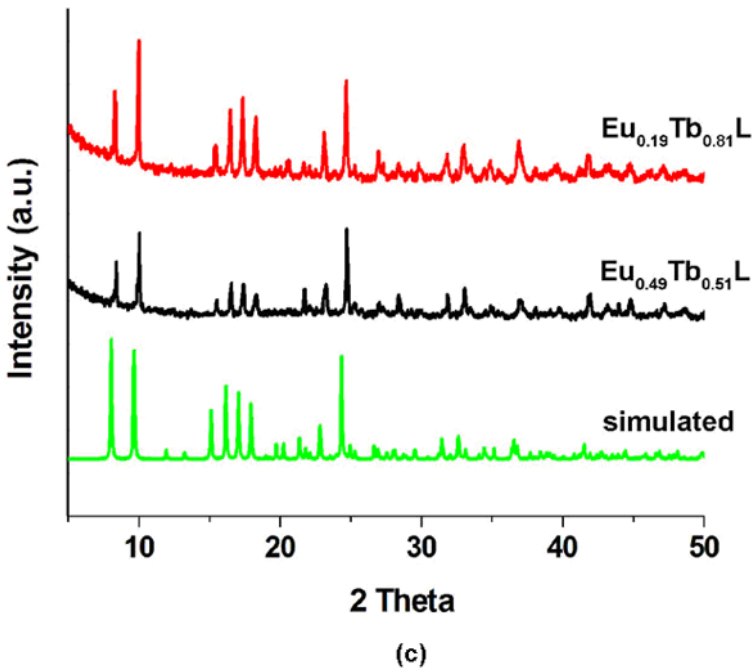

Fig. S1: (a) Powder XRD patterns of compounds in the range from 5 to 30 degrees. (b) PXRD patterns of the Eu^{3+} doped Tb^{3+} compounds. (c) PXRD patterns of the Eu^{3+} and Tb^{3+} codoped La compounds.

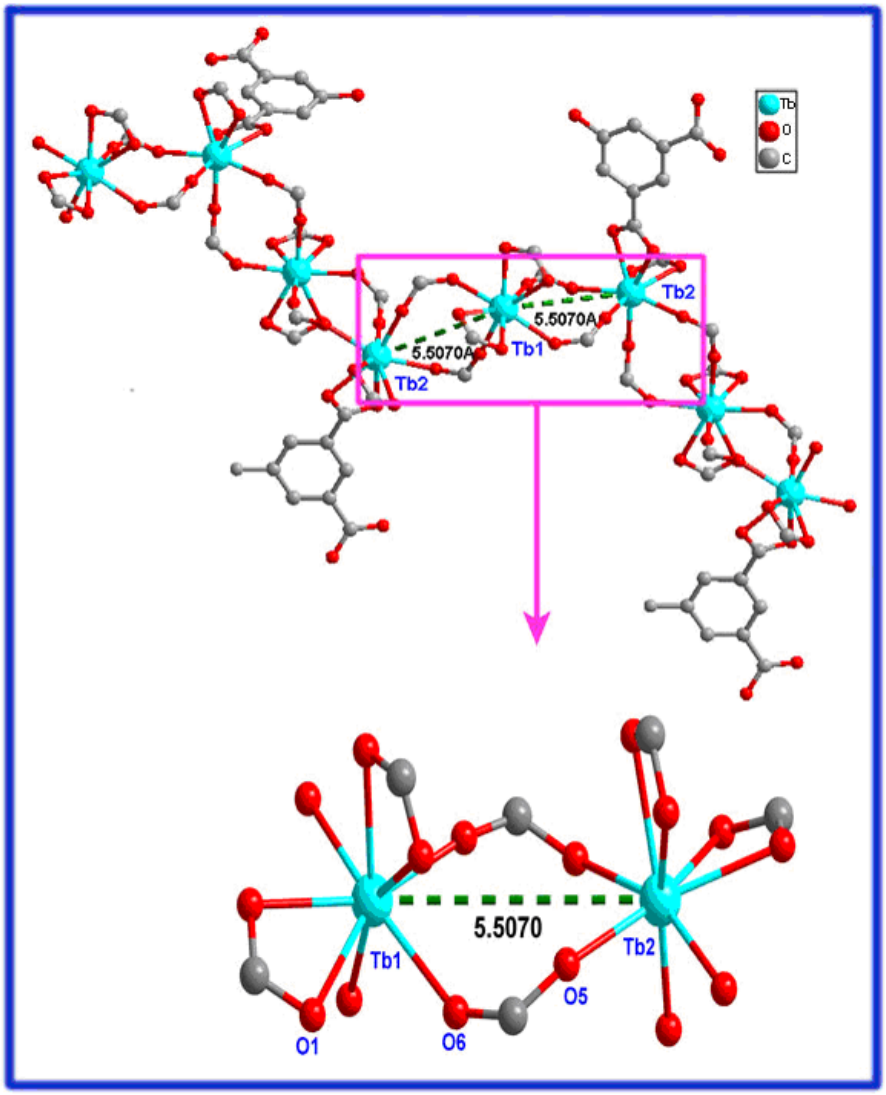

Fig. S2 Metal helical chain generated by carboxylate units in **8**.

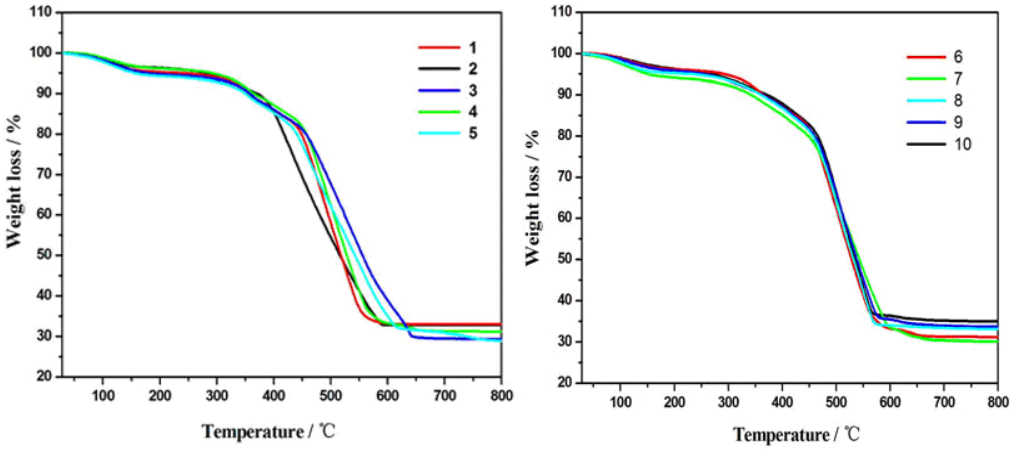

Fig. S3 Thermogravimetric analyses (TGA) curve of compounds **1**−**10**.

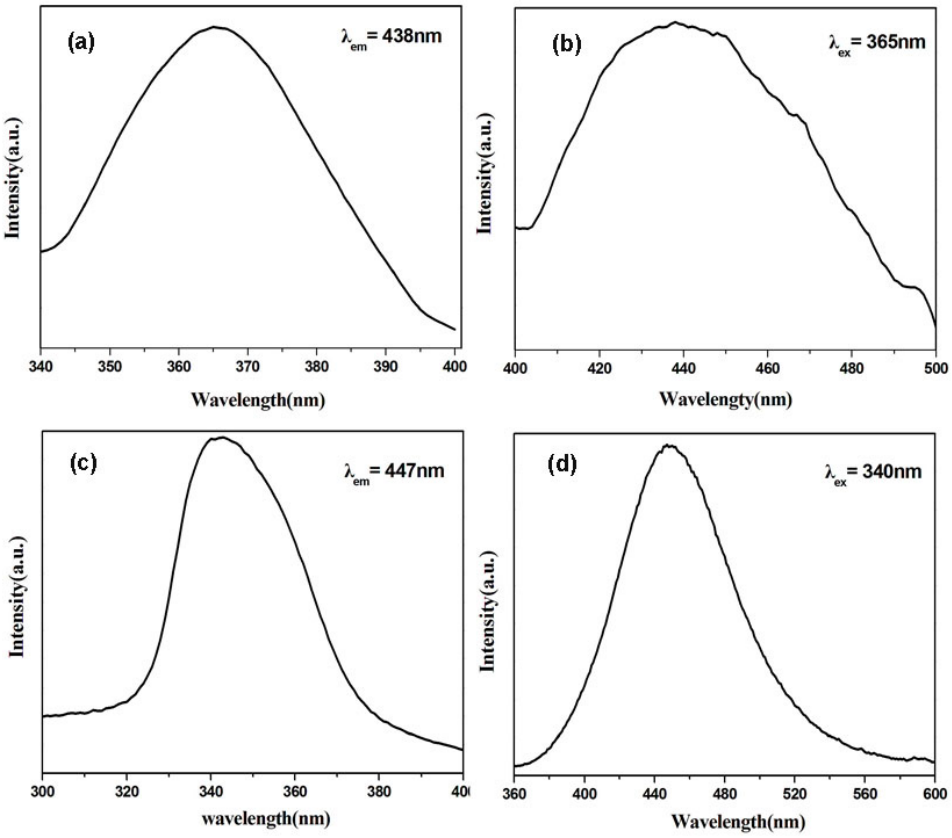

Fig. S4 Excitation spectra (a, c) and emission spectra (b, d) for the ligand H_4L and compound **1**, respectively.

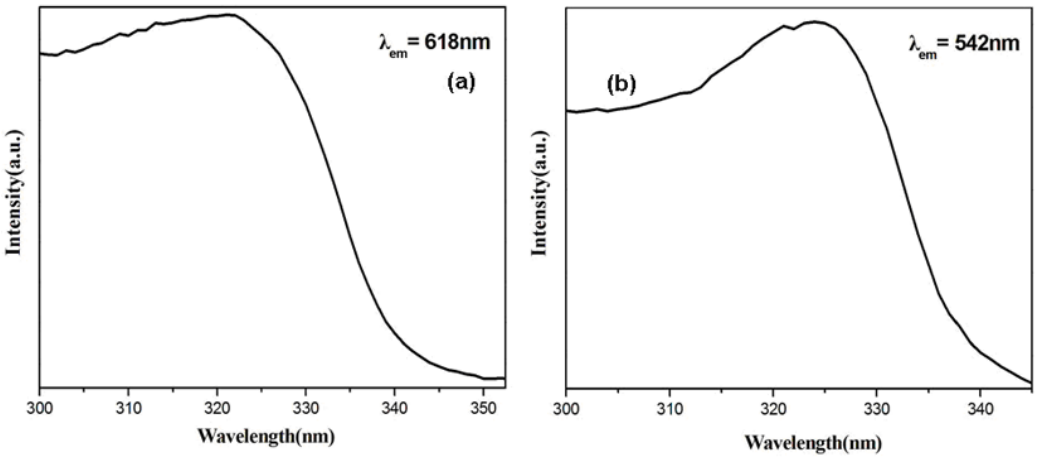

Fig. S5 Excitation spectra (a, b) for the compounds **6** and **8**, respectively.

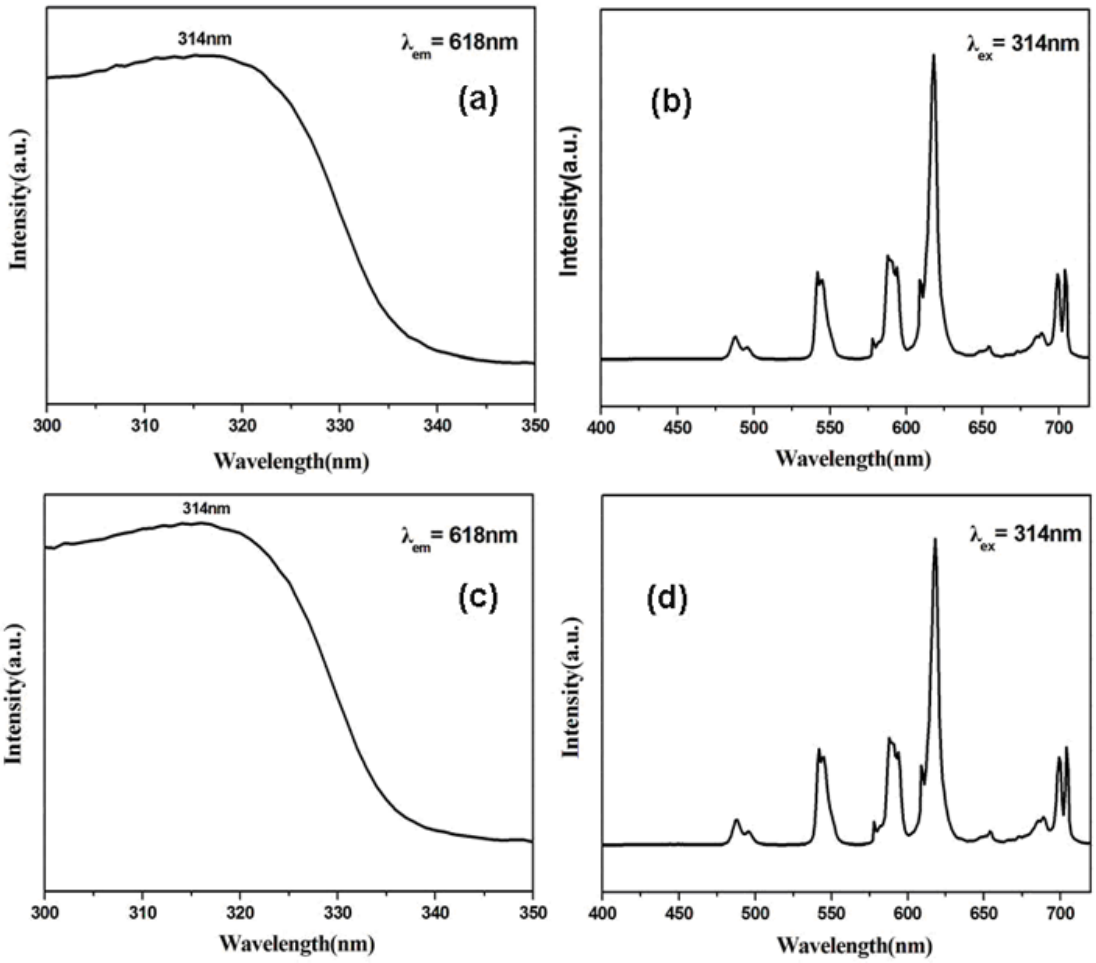

Fig. S6 Excitation spectra (a, c) and emission spectra (b, d) for the compounds $Eu_{0.17}Tb_{0.18}La_{0.65}L$ and $Eu_{0.16}Tb_{0.19}La_{0.65}L$, respectively.

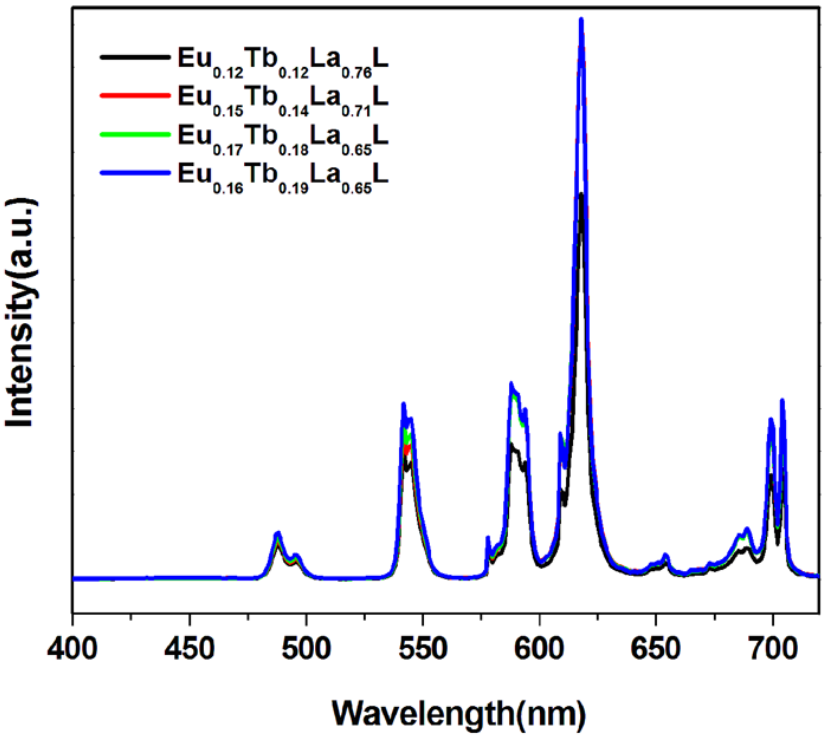

Fig. S7 Emission spectra of $Eu_xTb_yLa_{1-x-y}L$ excitation under 314 nm.

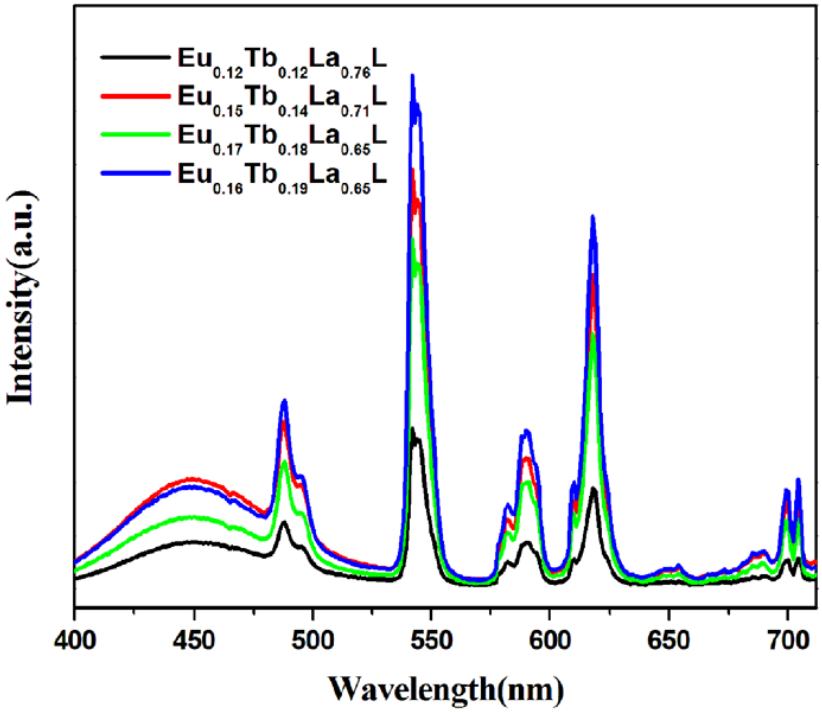

Fig. S8 Emission spectra of $Eu_xTb_yLa_{1-x-y}L$ excitation under 363 nm.

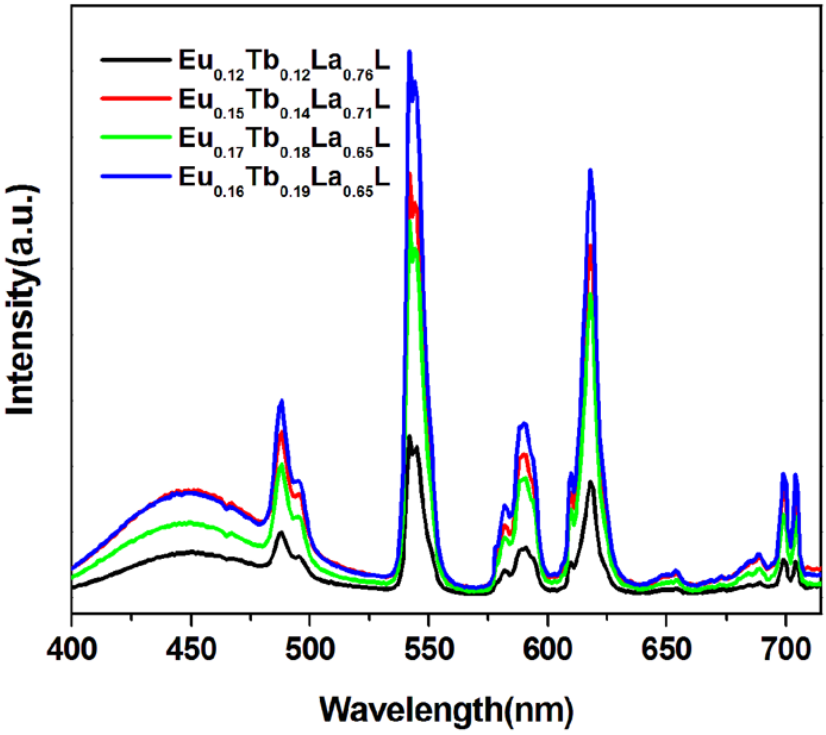

Fig. S9 Emission spectra of $Eu_xTb_yLa_{1-x-y}L$ excitation under 367 nm.