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Supporting information for article:

Two novel two-dimensional rare earth metal coordination polymers based on biphenyl-3,3',5,5'-tetracarboxylic acid displaying luminescence

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Table S1 Selected geometric parameters for BPTC@Eu (Å, °)

Eu1—O1	2.506 (4)	C1—C2	1.496 (8)
Eu1—O2	2.431 (4)	C2—C3	1.396 (8)
Eu1—O3 ⁱ	2.376 (4)	C2—C7	1.385 (7)
Eu1—O4 ⁱⁱ	2.359 (4)	C3—C4	1.390 (8)
Eu1—O5	2.469 (7)	C4—C4 ^{iv}	1.500 (11)
Eu1—O6 ⁱⁱⁱ	2.320 (13)	C4—C5	1.390 (7)
Eu1—O6	2.577 (7)	C5—C6	1.386 (8)
Eu1—O7	2.247 (8)	C6—C7	1.375 (8)
Eu1—O5A	2.493 (9)	C6—C8	1.513 (7)
Eu1—O6A	2.540 (9)	C9—C10	1.551 (17)
Eu1—O6A ⁱⁱⁱ	2.36 (3)	C11—C12	1.481 (9)
Eu1—O7A	2.393 (19)	C15—C16	1.472 (9)
O1—C1	1.256 (7)	O5A—C9A	1.235 (9)
O2—C1	1.248 (7)	O6A—C9A	1.225 (9)
O3—C8	1.262 (7)	C9A—C10A	1.59 (3)
O4—C8	1.253 (7)	O7A—C11A	1.213 (10)
O5—C9	1.260 (9)	N1A—C11A	1.490 (9)
O6—C9	1.239 (8)	N1A—C13A	1.481 (10)
O7—C11	1.204 (8)	N1A—C14A	1.480 (10)
O8—C16	1.201 (9)	C11A—C12A	1.493 (10)
N1—C11	1.456 (9)	C18—N2	1.449 (10)
N1—C13	1.455 (9)	C16—N2	1.439 (9)
N1—C14	1.483 (9)	N2—C17	1.451 (10)
O1—Eu1—O6	117.2 (5)	C1—O1—Eu1	90.9 (3)
O1—Eu1—O6A	115.2 (11)	C1—O2—Eu1	94.7 (3)
O2—Eu1—O1	52.55 (13)	C8—O3—Eu1 ^v	133.3 (4)
O2—Eu1—O5	78.3 (3)	C8—O4—Eu1 ^{vi}	139.9 (4)

O2—Eu1—O6	124.5 (4)	C9—O5—Eu1	96.5 (6)
O2—Eu1—O5A	74.7 (6)	Eu1 ⁱⁱⁱ —O6—Eu1	106.4 (4)
O2—Eu1—O6A	125.1 (7)	C9—O6—Eu1	91.9 (5)
O3 ⁱ —Eu1—O1	134.63 (15)	C9—O6—Eu1 ⁱⁱⁱ	160.7 (10)
O3 ⁱ —Eu1—O2	85.15 (14)	C11—O7—Eu1	151.7 (7)
O3 ⁱ —Eu1—O5	83.4 (4)	C11—N1—C14	108.0 (11)
O3 ⁱ —Eu1—O6	70.7 (7)	C13—N1—C11	129.2 (11)
O3 ⁱ —Eu1—O5A	74.7 (6)	C13—N1—C14	122.8 (13)
O3 ⁱ —Eu1—O6A	73.3 (15)	O1—C1—C2	119.2 (5)
O3 ⁱ —Eu1—O7A	134.7 (6)	O2—C1—O1	121.7 (5)
O4 ⁱⁱ —Eu1—O1	80.04 (14)	O2—C1—C2	119.1 (5)
O4 ⁱⁱ —Eu1—O2	132.41 (14)	C3—C2—C1	121.3 (5)
O4 ⁱⁱ —Eu1—O3 ⁱ	137.08 (15)	C7—C2—C1	119.7 (5)
O4 ⁱⁱ —Eu1—O5	85.3 (3)	C7—C2—C3	119.1 (5)
O4 ⁱⁱ —Eu1—O6	70.2 (7)	C2—C3—H3	119.1
O4 ⁱⁱ —Eu1—O5A	93.9 (6)	C4—C3—C2	121.8 (5)
O4 ⁱⁱ —Eu1—O6A ⁱⁱⁱ	76.7 (15)	C4—C3—H3	119.1
O4 ⁱⁱ —Eu1—O6A	67.8 (14)	C3—C4—C4 ^{iv}	120.8 (6)
O4 ⁱⁱ —Eu1—O7A	73.2 (6)	C5—C4—C3	117.5 (5)
O5—Eu1—O1	73.5 (3)	C5—C4—C4 ^{iv}	121.6 (7)
O5—Eu1—O6	50.6 (2)	C4—C5—H5	119.3
O6 ⁱⁱⁱ —Eu1—O1	146.6 (7)	C6—C5—C4	121.3 (5)
O6 ⁱⁱⁱ —Eu1—O2	149.6 (6)	C6—C5—H5	119.3
O6 ⁱⁱⁱ —Eu1—O3 ⁱ	78.4 (8)	C5—C6—C8	121.0 (5)
O6 ⁱⁱⁱ —Eu1—O4 ⁱⁱ	74.3 (8)	C7—C6—C5	120.2 (5)
O6 ⁱⁱⁱ —Eu1—O5	124.2 (4)	C7—C6—C8	118.8 (5)
O6 ⁱⁱⁱ —Eu1—O6	73.6 (4)	C2—C7—H7	119.9
O6 ⁱⁱⁱ —Eu1—O6A ⁱⁱⁱ	3 (2)	C6—C7—C2	120.1 (5)
O7—Eu1—O1	79.8 (3)	C6—C7—H7	119.9
O7—Eu1—O2	84.9 (3)	O3—C8—C6	117.2 (5)
O7—Eu1—O3 ⁱ	115.9 (3)	O4—C8—O3	126.6 (5)

O7—Eu1—O4 ⁱⁱ	91.1 (3)	O4—C8—C6	116.3 (5)
O7—Eu1—O5	153.3 (4)	O5—C9—C10	122.7 (13)
O7—Eu1—O6 ⁱⁱⁱ	79.7 (4)	O6—C9—O5	119.5 (9)
O7—Eu1—O6	150.6 (5)	O6—C9—C10	117.8 (12)
O7—Eu1—O6A ⁱⁱⁱ	81.0 (5)	C9—C10—H10A	109.6
O5A—Eu1—O1	78.4 (7)	C9—C10—H10B	109.7
O5A—Eu1—O6A	51.2 (3)	C9—C10—H10C	109.1
O6A ⁱⁱⁱ —Eu1—O1	149.4 (15)	H10A—C10—H10B	109.5
O6A ⁱⁱⁱ —Eu1—O2	147.9 (13)	H10A—C10—H10C	109.5
O6A ⁱⁱⁱ —Eu1—O5A	122.6 (9)	H10B—C10—H10C	109.5
O6A ⁱⁱⁱ —Eu1—O6A	73.7 (9)	O7—C11—N1	117.9 (9)
O6A ⁱⁱⁱ —Eu1—O7A	84.3 (11)	O7—C11—C12	127.5 (11)
O7A—Eu1—O1	70.0 (6)	N1—C11—C12	114.7 (8)
O7A—Eu1—O2	91.8 (6)	C11—C12—H12A	109.6
O7A—Eu1—O5A	147.3 (9)	C11—C12—H12B	109.4
O7A—Eu1—O6A	138.5 (13)	C11—C12—H12C	109.4

Symmetry code(s): (i) $-x+3/2, y-1/2, -z+1/2$; (ii) $x-1/2, -y+1/2, z-1/2$; (iii) $-x+1, -y, -z$; (iv) $-x+1, -y+1, -z$; (v) $-x+3/2, y+1/2, -z+1/2$; (vi) $x+1/2, -y+1/2, z+1/2$.

Table S2 Selected geometric parameters for BPTC@Ho (Å, °)

C1—C2	1.509 (6)	C14A—H14E	0.9601
C2—C3	1.386 (7)	C14A—H14F	0.9600
C2—C7	1.379 (6)	Ho1—O1	2.288 (3)
C3—C4	1.388 (6)	Ho1—O2 ⁱⁱ	2.311 (3)
C3—H3	0.9300	Ho1—O3 ⁱⁱⁱ	2.385 (3)
C4—C5	1.389 (7)	Ho1—O4 ⁱⁱⁱ	2.429 (3)
C4—C8	1.505 (6)	Ho1—O5 ⁱⁱ	2.43 (5)
C5—C6	1.397 (6)	Ho1—O5	2.26 (3)
C5—H5	0.9300	Ho1—O5A ⁱⁱ	2.53 (6)

C6—C6 ⁱ	1.488 (9)	Ho1—O5A	2.32 (3)
C6—C7	1.402 (6)	Ho1—O6 ⁱⁱ	2.352 (19)
C7—H7	0.9300	Ho1—O6A ⁱⁱ	2.47 (2)
C9—C10	1.498 (18)	Ho1—O7	2.221 (15)
C9A—C10A	1.478 (10)	Ho1—O7A	2.26 (3)
C10—H10A	0.9600	N1—C9	1.17 (2)
C10—H10B	0.9601	N1—C11	1.528 (18)
C10—H10C	0.9597	N1—C12	1.490 (17)
C10A—H10D	0.9597	N1A—C9A	1.474 (10)
C10A—H10E	0.9600	N1A—C11A	1.485 (10)
C10A—H10F	0.9600	N1A—C12A	1.485 (10)
C11—H11A	0.9590	O1—C1	1.254 (6)
C11—H11B	0.9599	O2—C1	1.254 (5)
C11—H11C	0.9601	O3—C8	1.266 (6)
C11A—H11D	0.9601	O4—C8	1.245 (6)
C11A—H11E	0.9603	O5—C13	1.33 (2)
C11A—H11F	0.9598	O5A—C13A	1.200 (10)
C12—H12A	0.9602	O6—C13	1.31 (4)
C12—H12B	0.9599	O6A—C13A	1.21 (5)
C12—H12C	0.9599	O7—C9	1.298 (15)
C12A—H12D	0.9600	O7A—C9A	1.196 (10)
C12A—H12E	0.9601	O8—H8A	0.8497
C12A—H12F	0.9600	O8—H8B	0.8500
C13—C14	1.51 (3)	O9—H9A ^{iv}	0.76 (7)
C13A—C14A	1.52 (4)	O9—H9A	0.8502
C14—H14A	0.9597	O9—H9B	0.8496
C14—H14B	0.9604	O9—O9 ^{iv}	1.16 (5)
C14—H14C	0.9601	O10—H10G	0.8504
C14A—H14D	0.9601	O10—H10H	0.8499
O1—Ho1—O2 ⁱⁱ	140.70 (11)	O5 ⁱⁱ —Ho1—O6A ⁱⁱ	52.7 (8)
O1—Ho1—O3 ⁱⁱⁱ	134.13 (11)	O5—Ho1—O6A ⁱⁱ	125.0 (13)

O1—Ho1—O4 ⁱⁱⁱ	80.30 (12)	O6 ⁱⁱ —Ho1—O3 ⁱⁱⁱ	79.7 (5)
O1—Ho1—O5 ⁱⁱ	71.0 (12)	O6 ⁱⁱ —Ho1—O4 ⁱⁱⁱ	73.6 (5)
O1—Ho1—O5A	75.8 (15)	O6 ⁱⁱ —Ho1—O5 ⁱⁱ	54.2 (8)
O1—Ho1—O5A ⁱⁱ	72.4 (13)	O6 ⁱⁱ —Ho1—O5A ⁱⁱ	52.4 (8)
O1—Ho1—O6 ⁱⁱ	85.0 (5)	O6 ⁱⁱ —Ho1—O6A ⁱⁱ	9.0 (7)
O1—Ho1—O6A ⁱⁱ	92.6 (5)	O7—Ho1—O1	91.2 (6)
O2 ⁱⁱ —Ho1—O3 ⁱⁱⁱ	82.88 (11)	O7—Ho1—O2 ⁱⁱ	110.0 (5)
O2 ⁱⁱ —Ho1—O4 ⁱⁱⁱ	135.69 (12)	O7—Ho1—O3 ⁱⁱⁱ	81.8 (6)
O2 ⁱⁱ —Ho1—O5 ⁱⁱ	75.0 (12)	O7—Ho1—O4 ⁱⁱⁱ	76.4 (5)
O2 ⁱⁱ —Ho1—O5A	77.4 (14)	O7—Ho1—O5 ⁱⁱ	150.5 (9)
O2 ⁱⁱ —Ho1—O5A ⁱⁱ	74.3 (13)	O7—Ho1—O5	80.1 (13)
O2 ⁱⁱ —Ho1—O6 ⁱⁱ	91.0 (5)	O7—Ho1—O5A ⁱⁱ	152.7 (9)
O2 ⁱⁱ —Ho1—O6A ⁱⁱ	82.0 (5)	O7—Ho1—O6 ⁱⁱ	150.0 (7)
O3 ⁱⁱⁱ —Ho1—O4 ⁱⁱⁱ	53.94 (11)	O7—Ho1—O6A ⁱⁱ	154.8 (7)
O3 ⁱⁱⁱ —Ho1—O5 ⁱⁱ	127.5 (8)	O7A—Ho1—O1	96.6 (9)
O3 ⁱⁱⁱ —Ho1—O5A ⁱⁱ	125.3 (9)	O7A—Ho1—O5A	73.8 (16)
O3 ⁱⁱⁱ —Ho1—O6A ⁱⁱ	77.7 (5)	C1—O1—Ho1	138.7 (3)
O4 ⁱⁱⁱ —Ho1—O5 ⁱⁱ	121.3 (9)	C1—O2—Ho1 ⁱⁱ	133.6 (3)
O4 ⁱⁱⁱ —Ho1—O5A ⁱⁱ	120.3 (10)	C8—O3—Ho1 ^v	93.3 (3)
O4 ⁱⁱⁱ —Ho1—O6A ⁱⁱ	79.7 (5)	C8—O4—Ho1 ^v	91.8 (3)
O5—Ho1—O1	76.1 (13)	Ho1—O5—Ho1 ⁱⁱ	106.9 (13)
O5—Ho1—O2 ⁱⁱ	75.6 (13)	C13—O5—Ho1	158 (4)
O5—Ho1—O3 ⁱⁱⁱ	144.9 (13)	C13—O5—Ho1 ⁱⁱ	94 (3)
O5—Ho1—O4 ⁱⁱⁱ	146.1 (12)	Ho1—O5A—Ho1 ⁱⁱ	102.1 (15)
O5—Ho1—O5 ⁱⁱ	73.1 (14)	C13A—O5A—Ho1	169 (5)
O5 ⁱⁱ —Ho1—O5A ⁱⁱ	2.2 (16)	C13—O6—Ho1 ⁱⁱ	98.0 (17)
O5—Ho1—O5A ⁱⁱ	75.0 (14)	C9—O7—Ho1	158.2 (15)
O5—Ho1—O6 ⁱⁱ	127.3 (12)	C9A—O7A—Ho1	142.2 (16)

Symmetry code(s): (i) $-x+1, -y+1, -z+2$; (ii) $-x, -y+1, -z+1$; (iii) $x-1/2, -y+1/2, z-1/2$; (iv) $-x, -y+1, -z$; (v) $x+1/2, -y+1/2, z+1/2$.