Supporting Information for

Asymmetric {Dy_4} Metallogrid and Double-Layered {Dy_8} Cage Clusters from Carboxylic Decorated *o*-vanillin Schiff Bases: Syntheses, Topological Variation, and Single Molecule Magnet Behaviors

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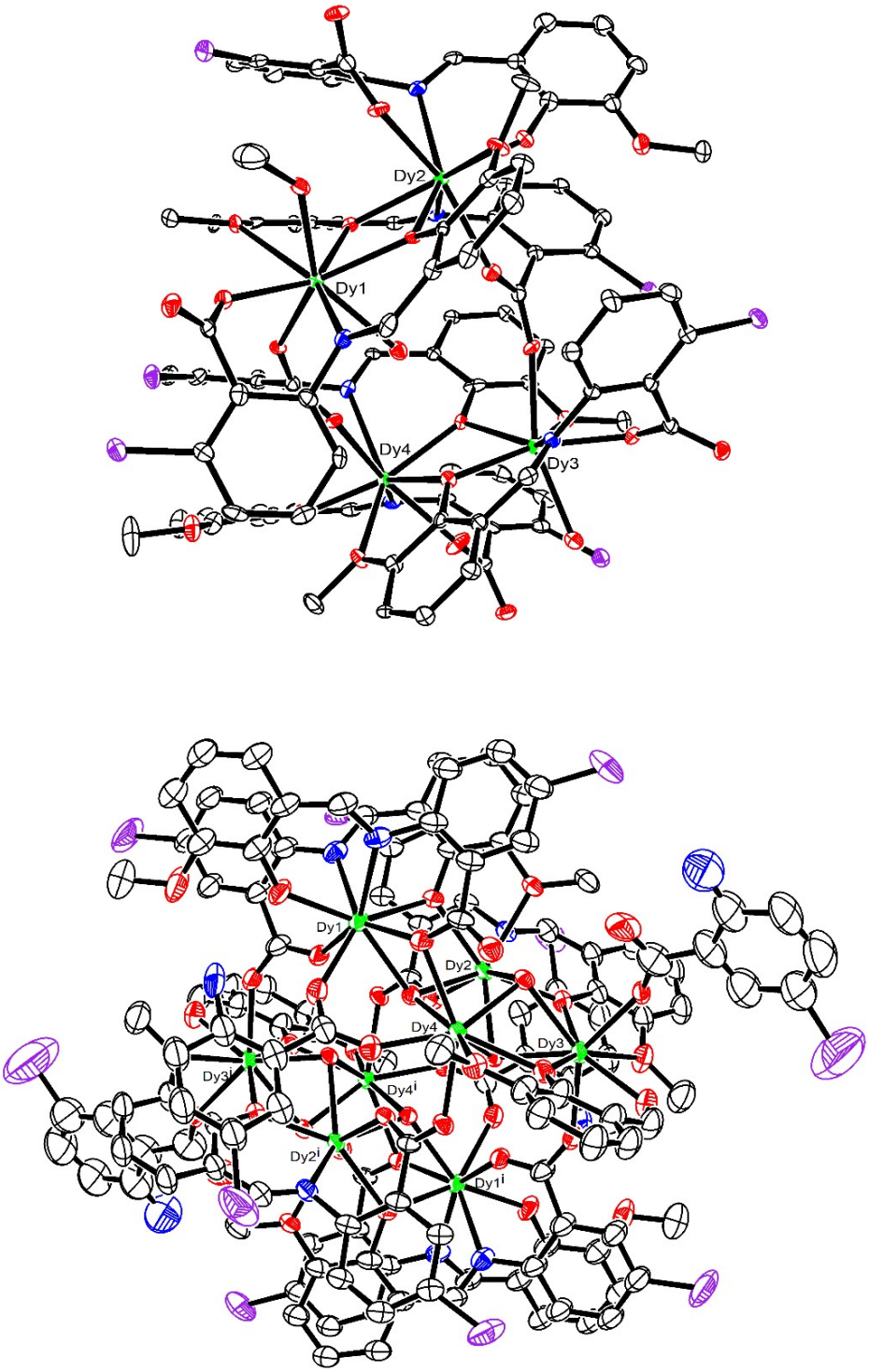

Fig. S1. ORTEP diagrams of **1** (up) and **2** (down) with the atoms numbering scheme (30% ellipsoid level). Hydrogen atoms and solvent molecules have been omitted for the sake of clarity. [Symmetry code:(i) −x+2, −y+2, −z+1].

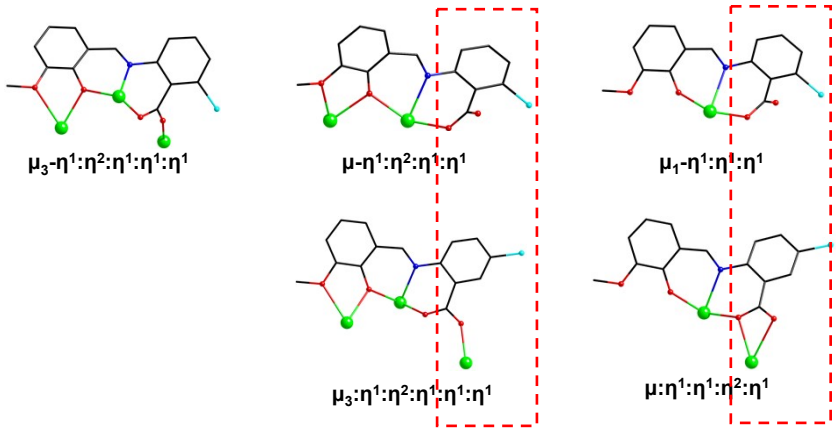

Fig. S2. A comparison between the coordination modes of the ligands in **1** and **2**.

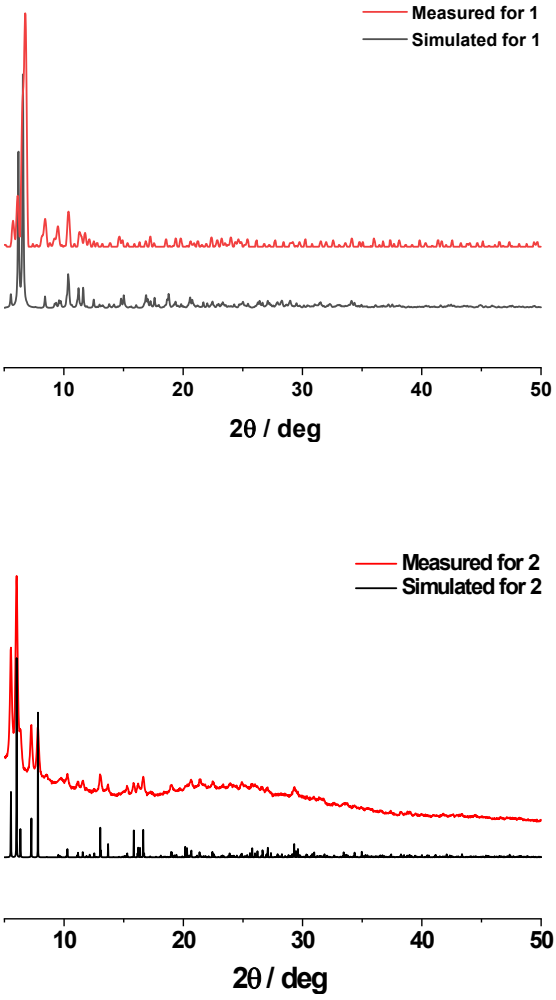

Fig. S3. PXRD patterns of **1** and **2**.

Table S1. Continuous Shape Measures calculation for Dy^{III} ions of **1**.

Ln ions	Label	Symmetry	Shape	ABOXIY
Dy1 in **1**	OP-8	D_{8h}	Octagon	31.143
	HPY-8	C_{7v}	Heptagonal pyramid	23.222
	HBPY-8	D_{6h}	Hexagonal bipyramid	15.047
	CU-8	O_h	Cube	11.375
	SAPR-8	D_{4d}	Square antiprism	2.106
	TDD-8	$\boldsymbol{D_{2d}}$	**Triangular dodecahedron**	**1.161**
	JGBF-8	D_{2d}	Johnson gyrobifastigium J26	12.006
	JETBPY-8	D_{3h}	Johnson elongated triangular bipyramid J14	27.205
	JBTPR-8	C_{2v}	Biaugmented trigonal prism J50	2.021
	BTPR-8	C_{2v}	Biaugmented trigonal prism	1.446
	JSD-8	D_{2d}	Snub diphenoid J84	3.279
	TT-8	T_d	Triakis tetrahedron	12.036
	ETBPY-8	D_{3h}	Elongated trigonal bipyramid	24.139
Dy2 in **1**	OP-8	D_{8h}	Octagon	33.824
	HPY-8	C_{7v}	Heptagonal pyramid	22.867
	HBPY-8	D_{6h}	Hexagonal bipyramid	13.122
	CU-8	O_h	Cube	7.514
	SAPR-8	D_{4d}	Square antiprism	2.546
	TDD-8	$\boldsymbol{D_{2d}}$	**Triangular dodecahedron**	**1.262**
	JGBF-8	D_{2d}	Johnson gyrobifastigium J26	12.725
	JETBPY-8	D_{3h}	Johnson elongated triangular bipyramid J14	26.350
	JBTPR-8	C_{2v}	Biaugmented trigonal prism J50	2.343
	BTPR-8	C_{2v}	Biaugmented trigonal prism	2.013
	JSD-8	D_{2d}	Snub diphenoid J84	4.652
	TT-8	T_d	Triakis tetrahedron	8.128
	ETBPY-8	D_{3h}	Elongated trigonal bipyramid	24.778
Dy3 in **1**	HP-7	D_{7h}	Heptagon	31.819
	HPY-7	C_{6v}	Heptagonal pyramid	21.647
	PBPY-7	D_{5h}	Pentagonal bipyramid	2.759
	COC-7	C_{3v}	Capped octahedron	3.430

	CTPR-7	$\boldsymbol{C_{2v}}$	**Capped trigonal prism**	**2.146**
	JPBPY-7	D_{5h}	Johnson pentagonal bipyramid J13	5.783
	JETPY-7	C_{3v}	Johnson elongated triangular pyramid J7	19.304
	OP-8	D_{8h}	Octagon	30.346
	HPY-8	C_{7v}	Heptagonal pyramid	23.809
	HBPY-8	D_{6h}	Hexagonal bipyramid	15.618
	CU-8	O_h	Cube	10.381
	SAPR-8	$\boldsymbol{D_{4d}}$	**Square antiprism**	**1.451**
	TDD-8	D_{2d}	Triangular dodecahedron	2.174
Dy4 in **1**	JGBF-8	D_{2d}	Johnson gyrobifastigium J26	11.383
	JETBPY-8	D_{3h}	Johnson elongated triangular bipyramid J14	27.537
	JBTPR-8	C_{2v}	Biaugmented trigonal prism J50	1.960
	BTPR-8	C_{2v}	Biaugmented trigonal prism	1.672
	JSD-8	D_{2d}	Snub diphenoid J84	2.877
	TT-8	T_d	Triakis tetrahedron	10.957
	ETBPY-8	D_{3h}	Elongated trigonal bipyramid	22.515

Table S2. Continuous Shape Measures calculation for Dy^{III} ions of **2**.

Ln ions	Label	Symmetry	Shape	ABOXIY
	OP-8	D_{8h}	Octagon	31.559
	HPY-8	C_{7v}	Heptagonal pyramid	22.834
	HBPY-8	D_{6h}	Hexagonal bipyramid	15.197
	CU-8	O_h	Cube	9.908
	SAPR-8	D_{4d}	Square antiprism	1.734
	TDD-8	D_{2d}	Triangular dodecahedron	1.647
Dy1 in **2**	JGBF-8	D_{2d}	Johnson gyrobifastigium J26	13.711
	JETBPY-8	D_{3h}	Johnson elongated triangular bipyramid J14	29.067
	JBTPR-8	C_{2v}	Biaugmented trigonal prism J50	1.727
	BTPR-8	$\boldsymbol{C_{2v}}$	**Biaugmented trigonal prism**	**1.264**
	JSD-8	D_{2d}	Snub diphenoid J84	3.590
	TT-8	T_d	Triakis tetrahedron	10.167
	ETBPY-8	D_{3h}	Elongated trigonal bipyramid	23.252
	OP-8	D_{8h}	Octagon	30.807
	HPY-8	C_{7v}	Heptagonal pyramid	22.757
	HBPY-8	D_{6h}	Hexagonal bipyramid	13.598
	CU-8	O_h	Cube	12.229
	SAPR-8	D_{4d}	Square antiprism	3.005
	TDD-8	$\boldsymbol{D_{2d}}$	**Triangular dodecahedron**	**2.351**
Dy2 in **2**	JGBF-8	D_{2d}	Johnson gyrobifastigium J26	8.565
	JETBPY-8	D_{3h}	Johnson elongated triangular bipyramid J14	26.846
	JBTPR-8	C_{2v}	Biaugmented trigonal prism J50	3.415
	BTPR-8	C_{2v}	Biaugmented trigonal prism	3.057
	JSD-8	D_{2d}	Snub diphenoid J84	3.350
	TT-8	T_d	Triakis tetrahedron	12.805
	ETBPY-8	D_{3h}	Elongated trigonal bipyramid	20.938
	OP-8	D_{8h}	Octagon	29.922
Dy3 in **2**	HPY-8	C_{7v}	Heptagonal pyramid	20.814
	HBPY-8	D_{6h}	Hexagonal bipyramid	14.925

	CU-8	O_h	Cube	9.576
	SAPR-8	D_{4d}	Square antiprism	1.941
	TDD-8	$\boldsymbol{D_{2d}}$	**Triangular dodecahedron**	**1.055**
	JGBF-8	D_{2d}	Johnson gyrobifastigium J26	14.394
	JETBPY-8	D_{3h}	Johnson elongated triangular bipyramid J14	28.484
	JBTPR-8	C_{2v}	Biaugmented trigonal prism J50	2.202
	BTPR-8	C_{2v}	Biaugmented trigonal prism	1.896
	JSD-8	D_{2d}	Snub diphenoid J84	3.207
	TT-8	T_d	Triakis tetrahedron	10.268
	ETBPY-8	D_{3h}	Elongated trigonal bipyramid	24.091
	EP-9	D_{9h}	Enneagon	32.042
	OPY-9	C_{8v}	Octagonal pyramid	22.970
	HBPY-9	D_{7h}	Heptagonal bipyramid	13.765
	JTC-9	C_{3v}	Johnson triangular cupola J3	14.762,
	JCCU-9	C_{4v}	Capped cube J8	7.353
	CCU-9	C_{4v}	Spherical-relaxed capped cube	6.352
Dy4 in **2**	JCSAPR-9	C_{4v}	Capped square antiprism J10	3.359
	CSAPR-9	C_{4v}	Spherical capped square antiprism	2.686
	JTCTPR-9	D_{3h}	Tricapped trigonal prism J51	4.794
	TCTPR-9	D_{3h}	Spherical tricapped trigonal prism	3.585
	JTDIC-9	C_{3v}	Tridiminished icosahedron J63	12.235
	HH-9	C_{2v}	Hula-hoop	9.642
	MFF-9	$\boldsymbol{C_s}$	**Muffin**	**2.294**

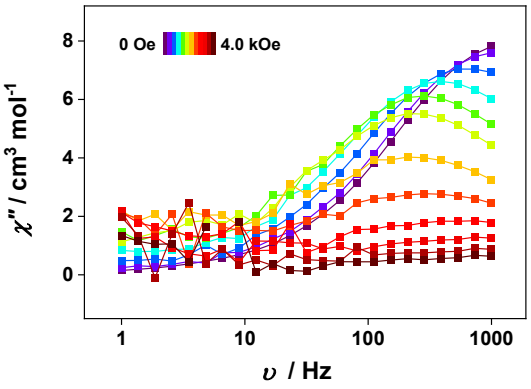

Fig. S4. Frequency-dependent χ'' signals of **1** recorded at 2 K and under different dc fields.

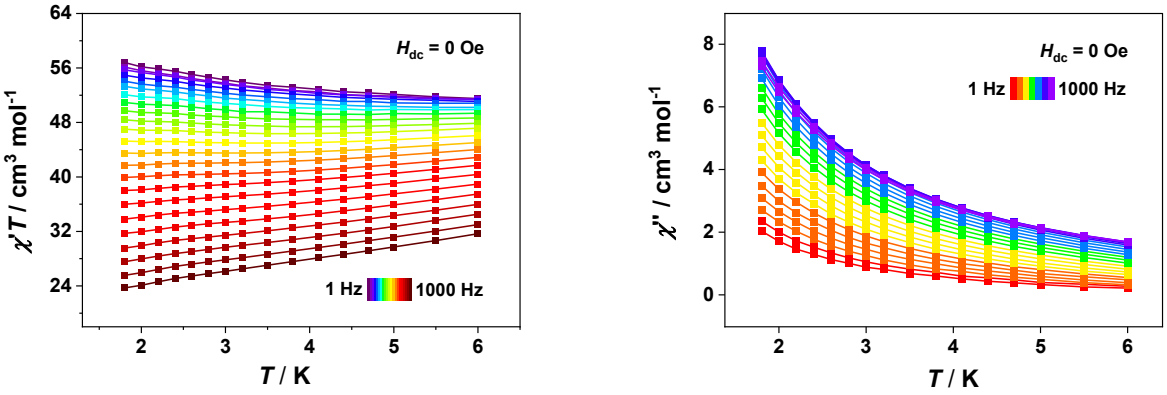

Fig. S5. Temperature dependence of the in-phase $\chi'T$ product and χ'' for **1** under zero fields.

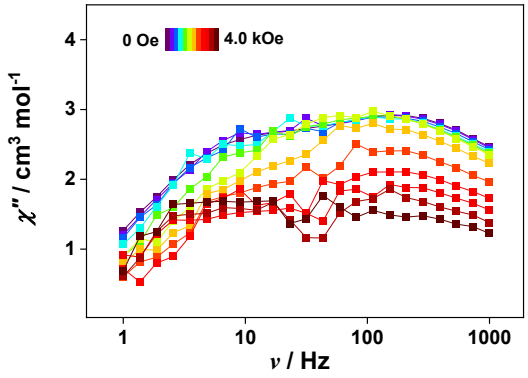

Fig. S6. Frequency-dependent χ'' signals of **2** recorded at 2 K and under different dc fields.

Table S3. Fitting of the Cole-Cole plots of **1** under 0.4 kOe dc field.

T/K	χ_s	$\Delta\chi$	τ	α
1.8	0.359659E+01	0.303770E+02	0.299916E-03	0.311713E+00
2.0	0.353453E+01	0.271117E+02	0.265074E-03	0.309108E+00
2.2	0.338599E+01	0.246036E+02	0.232980E-03	0.314158E+00
2.4	0.348817E+01	0.224427E+02	0.209344E-03	0.314070E+00
2.6	0.356860E+01	0.205582E+02	0.188928E-03	0.315556E+00
2.8	0.356381E+01	0.189735E+02	0.171269E-03	0.319834E+00
3.0	0.374032E+01	0.175679E+02	0.161360E-03	0.315186E+00
3.5	0.364058E+01	0.148331E+02	0.135303E-03	0.318627E+00
4.0	0.368030E+01	0.127909E+02	0.122696E-03	0.310706E+00
4.5	0.364647E+01	0.112301E+02	0.113428E-03	0.302057E+00
5.0	0.351096E+01	0.100002E+02	0.103259E-03	0.297658E+00
6.0	0.300370E+01	0.819962E+01	0.762093E-04	0.298894E+00
7.0	0.242910E+01	0.694418E+01	0.505238E-04	0.307293E+00
8.0	0.182897E+01	0.601892E+01	0.308383E-04	0.311773E+00

Table S4. Fitting of the Cole-Cole plots of **2** under 0.4 kOe dc field.

T/K	χ_s	$\Delta\chi_1$	τ_1	α_1
1.8	0.136542E+01	0.330408E+01	0.366559E-01	0.165752E+00
2.0	0.125091E+01	0.252791E+01	0.302118E-01	0.123823E+00
2.2	0.120723E+01	0.243355E+01	0.263454E-01	0.127765E+00
2.4	0.135243E+01	0.285573E+01	0.225146E-01	0.181201E+00
2.6	0.140600E+01	0.281767E+01	0.195353E-01	0.184120E+00
2.8	0.134410E+01	0.264017E+01	0.176599E-01	0.172498E+00
3.0	0.134275E+01	0.258565E+01	0.160242E-01	0.176916E+00
3.2	0.138371E+01	0.264889E+01	0.141744E-01	0.200240E+00
3.5	0.131455E+01	0.233859E+01	0.129933E-01	0.177014E+00
3.8	0.140064E+01	0.238164E+01	0.111344E-01	0.203146E+00
4.1	0.125747E+01	0.207162E+01	0.105209E-01	0.179353E+00
4.4	0.163716E+01	0.230019E+01	0.864377E-02	0.218943E+00
4.7	0.134727E+01	0.185364E+01	0.867885E-02	0.165754E+00
5.0	0.112482E+01	0.186363E+01	0.770761E-02	0.203309E+00

5.4	0.119085E+01	0.164856E+01	0.706479E-02	0.170200E+00
5.8	0.966362E+00	0.163311E+01	0.601051E-02	0.200021E+00
6.2	0.694793E+00	0.154333E+01	0.522939E-02	0.205255E+00
6.6	0.755223E+00	0.136756E+01	0.471187E-02	0.169387E+00
7.0	0.900133E+00	0.129315E+01	0.398185E-02	0.167085E+00
7.5	0.884007E+00	0.125243E+01	0.331527E-02	0.167107E+00
8.0	0.169865E+01	0.119067E+01	0.281320E-02	0.166306E+00
8.5	0.179844E+01	0.115082E+01	0.234090E-02	0.177702E+00
9.0	0.203777E+01	0.107411E+01	0.195524E-02	0.160700E+00

$\Delta\chi_2$	τ_2	α_2
0.153973E+02	0.963265E-03	0.527468E+00
0.144891E+02	0.808520E-03	0.535240E+00
0.132097E+02	0.632851E-03	0.532925E+00
0.113862E+02	0.459220E-03	0.510243E+00
0.102836E+02	0.376127E-03	0.500482E+00
0.956269E+01	0.315175E-03	0.498529E+00
0.880150E+01	0.266351E-03	0.492584E+00
0.795007E+01	0.220779E-03	0.478610E+00
0.738200E+01	0.188483E-03	0.481790E+00
0.641436E+01	0.152091E-03	0.458055E+00
0.616497E+01	0.131200E-03	0.470779E+00
0.492099E+01	0.116724E-03	0.405905E+00
0.513207E+01	0.102372E-03	0.449182E+00
0.488150E+01	0.739770E-04	0.449135E+00
0.447170E+01	0.673003E-04	0.447437E+00
0.422436E+01	0.449505E-04	0.440105E+00
0.416494E+01	0.298391E-04	0.448097E+00
0.388112E+01	0.256984E-04	0.452902E+00
0.345727E+01	0.223441E-04	0.439009E+00
0.314679E+01	0.160052E-04	0.421525E+00
0.207370E+01	0.254759E-04	0.378880E+00
0.173476E+01	0.227249E-04	0.357384E+00
0.130747E+01	0.273152E-04	0.322711E+00

Table S5. Crystal data and structure refinement parameters of **1** and **2**.

Clusters	**1**	**2**
Empirical formula	$C_{99}H_{97}Cl_6Dy_4N_7O_{34}$	$C_{140}H_{118}Cl_{10}Dy_8N_{10}O_{50}$
Crystal system	monoclinic	triclinic
Space group	$P2_1/c$	$P\bar{1}$
a/Å	29.0219(7)	15.3953(5)
b/Å	19.1466(5)	16.5545(5)
c/Å	19.2115(5)	17.4986(6)
α/°	90	67.554(3)
β/°	100.539(3)	89.584(3)
γ/°	90	74.827(3)
V/Å^3	10495.2(5)	3956.7(3)
Z	4	1
ρ_{calc}g/cm^3	1.754	1.764
μ/mm^{-1}	3.052	3.973
F（000）	5464.0	2018.0
2θ range /°	6.67 to 52	6.666 to 50
Reflections collected	70408	28516
Independent reflections	20583	13891
R_{int}	0.0732	0.0390
Data/restraints/parameters	20583/33/1363	13891/1862/913
Goodness-of-fit on F^2	1.167	1.112
R_1, wR_2 [I>=2（I）]	0.0775, 0.1539	0.0546, 0.1445
R_1, wR_2 [all data]	0.1089, 0.1732	0.0814, 0.1591

Table S6. Selected bond length and bond angle of **1**.

Bond	Length/Å	Bond	Length/Å	Bond	Length/Å
Dy1—O2	2.259 (8)	Dy2—O11	2.167 (8)	Dy3—N2	2.437 (10)
Dy1—O3	2.353 (7)	Dy2—O14	2.369 (8)	Dy4—O7	2.425 (8)
Dy1—O15	2.325 (7)	Dy2—O15	2.312 (7)	Dy4—O8	2.507 (8)
Dy1—O16	2.540 (8)	Dy2—N3	2.530 (10)	Dy4—O18	2.349 (7)
Dy1—O17	2.319 (7)	Dy2—N4	2.539 (9)	Dy4—O19	2.280 (8)
Dy1—O25	2.420 (8)	Dy3—O6	2.237 (8)	Dy4—O22	2.292 (8)
Dy1—O26	2.377 (8)	Dy3—O7	2.267 (7)	Dy4—O23	2.152 (8)
Dy1—N1	2.439 (10)	Dy3—O13	2.231 (8)	Dy4—N5	2.532 (10)
Dy2—O3	2.395 (7)	Dy3—O19	2.311 (8)	Dy4—N6	2.556 (10)
Dy2—O4	2.467 (8)	Dy3—O20	2.447 (7)		
Dy2—O10	2.372 (8)	Dy3—O27	2.338 (9)		
Bond Angle	**Angle (°)**	**Bond Angle**	**Angle (°)**	**Bond Angle**	**Angle (°)**
O2—Dy1—O3	134.2 (3)	O10—Dy2—N3	71.2 (3)	O13—Dy3—N2	82.1 (3)
O2—Dy1—O15	139.0 (3)	O10—Dy2—N4	133.9 (3)	O19—Dy3—O20	65.7 (3)
O2—Dy1—O16	75.7 (3)	O11—Dy2—O3	132.2 (3)	O19—Dy3—O27	116.3 (3)
O2—Dy1—O17	85.3 (3)	O11—Dy2—O4	73.7 (3)	O19—Dy3—N2	135.9 (3)
O2—Dy1—O25	129.8 (3)	O11—Dy2—O10	113.3 (3)	O27—Dy3—O20	91.9 (3)
O2—Dy1—O26	76.2 (3)	O11—Dy2—O14	85.6 (3)	O27—Dy3—N2	94.8 (3)
O2—Dy1—N1	72.9 (3)	O11—Dy2—O15	152.7 (3)	N2—Dy3—O20	147.8 (3)
O3—Dy1—O16	123.3 (2)	O11—Dy2—N3	71.8 (3)	O7—Dy4—O8	65.5 (3)
O3—Dy1—O25	69.5 (3)	O11—Dy2—N4	83.3 (3)	O7—Dy4—N5	122.0 (3)
O3—Dy1—O26	69.8 (3)	O14—Dy2—O3	74.2 (3)	O7—Dy4—N6	138.1 (3)
O3—Dy1—N1	76.8 (3)	O14—Dy2—O4	94.2 (3)	O8—Dy4—N5	142.9 (3)
O15—Dy1—O3	72.4 (3)	O14—Dy2—O10	149.3 (3)	O8—Dy4—N6	122.4 (3)
O15—Dy1—O16	63.3 (2)	O14—Dy2—N3	139.4 (3)	O18—Dy4—O7	74.9 (3)
O15—Dy1—O25	85.0 (3)	O14—Dy2—N4	69.4 (3)	O18—Dy4—O8	80.4 (3)
O15—Dy1—O26	91.3 (3)	O15—Dy2—O3	71.9 (2)	O18—Dy4—N5	68.7 (3)
O15—Dy1—N1	147.0 (3)	O15—Dy2—O4	133.6 (3)	O18—Dy4—N6	143.7 (3)
O17—Dy1—O3	137.9 (3)	O15—Dy2—O10	82.6 (3)	O19—Dy4—O7	70.7 (3)
O17—Dy1—O15	85.9 (3)	O15—Dy2—O14	90.8 (3)	O19—Dy4—O8	134.8 (3)
O17—Dy1—O16	73.1 (3)	O15—Dy2—N3	94.4 (3)	O19—Dy4—O18	99.0 (3)
O17—Dy1—O25	73.1 (3)	O15—Dy2—N4	70.1 (3)	O19—Dy4—O22	76.8 (3)
O17—Dy1—O26	148.2 (3)	N3—Dy2—N4	74.6 (3)	O19—Dy4—N5	72.3 (3)
O17—Dy1—N1	110.1 (3)	O6—Dy3—O7	144.6 (3)	O19—Dy4—N6	84.1 (3)

O25—Dy1—O16	134.7 (3)	O6—Dy3—O19	142.3 (3)	O22—Dy4—O7	71.1 (3)
O25—Dy1—N1	73.2 (3)	O6—Dy3—O20	78.4 (3)	O22—Dy4—O8	78.9 (3)
O26—Dy1—O16	77.4 (3)	O6—Dy3—O27	74.4 (3)	O22—Dy4—O18	145.1 (3)
O26—Dy1—O25	138.2 (3)	O6—Dy3—N2	73.3 (3)	O22—Dy4—N5	138.0 (3)
O26—Dy1—N1	89.1 (3)	O7—Dy3—O19	73.0 (3)	O22—Dy4—N6	70.9 (3)
N1—Dy1—O16	148.0 (3)	O7—Dy3—O20	136.1 (3)	O23—Dy4—O7	139.3 (3)
O3—Dy2—O4	65.4 (3)	O7—Dy3—O27	93.2 (3)	O23—Dy4—O8	75.3 (3)
O3—Dy2—N3	145.1 (3)	O7—Dy3—N2	74.9 (3)	O23—Dy4—O18	89.0 (3)
O3—Dy2—N4	126.0 (3)	O13—Dy3—O6	85.3 (3)	O23—Dy4—O19	149.7 (3)
O4—Dy2—N3	110.4 (3)	O13—Dy3—O7	105.5 (3)	O23—Dy4—O22	112.3 (4)
O4—Dy2—N4	152.8 (3)	O13—Dy3—O19	78.2 (3)	O23—Dy4—N5	83.8 (3)
O10—Dy2—O3	75.3 (3)	O13—Dy3—O20	80.7 (3)	O23—Dy4—N6	72.8 (3)
O10—Dy2—O4	70.2 (3)	O13—Dy3—O27	159.4 (3)	N5—Dy4—N6	78.1 (3)

Table S7. Selected bond length and bond angle of **2**.

Bond	Length/Å	Bond	Length/Å	Bond	Length/Å
Dy1—O2	2.358 (6)	Dy2—O11	2.299 (5)	Dy3—O21	2.423 (5)
Dy1—O3	2.222 (6)	Dy2—O20	2.331 (5)	Dy3—O22	2.282 (5)
Dy1—O6	2.331 (6)	Dy2—O21	2.297 (5)	Dy4—O1	2.718 (7)
Dy1—O7	2.358 (6)	Dy2—O22	2.426 (5)	Dy4—O2	2.458 (6)
Dy1—O13	2.340 (7)	Dy2—N3	2.502 (7)	Dy4—O9^{i}	2.330 (6)
Dy1—O20	2.354 (5)	Dy3—O5^{i}	2.310 (7)	Dy4—O14	2.335 (6)
Dy1—N1	2.553 (8)	Dy3—O11	2.407 (6)	Dy4—O18	2.390 (6)
Dy1—N2	2.552 (8)	Dy3—O12	2.517 (6)	Dy4—O19	2.541 (6)
Dy2—O7	2.352 (6)	Dy3—O15	2.244 (6)	Dy4—O20	2.388 (5)
Dy2—O8	2.583 (6)	Dy3—O17	2.408 (7)	Dy4—O21	2.374 (5)
Dy2—O10	2.300 (6)	Dy3—O18	2.327 (6)	Dy4—O22	2.472 (5)
Bond Angle	**Angle (°)**	**Bond Angle**	**Angle (°)**	**Bond Angle**	**Angle (°)**
O2—Dy1—O7	83.1 (2)	O11—Dy2—O22	71.6 (2)	O22—Dy3—O12	119.9 (2)
O2—Dy1—N1	68.9 (2)	O11—Dy2—N3	73.5 (2)	O22—Dy3—O17	138.2 (2)
O2—Dy1—N2	141.0 (3)	O20—Dy2—O7	69.7 (2)	O22—Dy3—O18	78.1 (2)
O3—Dy1—O2	116.3 (2)	O20—Dy2—O8	121.5 (2)	O22—Dy3—O21	52.5 (2)
O3—Dy1—O6	88.0 (2)	O20—Dy2—O22	68.5 (2)	O2—Dy4—O1	49.0 (2)
O3—Dy1—O7	143.1 (2)	O20—Dy2—N3	140.7 (2)	O2—Dy4—O19	102.7 (2)
O3—Dy1—O13	72.6 (2)	O21—Dy2—O7	98.4 (2)	O2—Dy4—O22	120.5 (2)
O3—Dy1—O20	146.2 (2)	O21—Dy2—O8	72.4 (2)	O9^{i}—Dy4—O1	143.3 (2)
O3—Dy1—N1	74.6 (3)	O21—Dy2—O10	151.6 (2)	O9^{i}—Dy4—O2	149.6 (2)
O3—Dy1—N2	75.1 (3)	O21—Dy2—O11	77.3 (2)	O9^{i}—Dy4—O14	73.4 (2)
O6—Dy1—O2	143.9 (2)	O21—Dy2—O20	81.9 (2)	O9^{i}—Dy4—O18	75.1 (2)
O6—Dy1—O7	92.9 (2)	O21—Dy2—O22	62.2 (2)	O9^{i}—Dy4—O19	75.8 (2)
O6—Dy1—O13	84.9 (2)	O21—Dy2—N3	134.9 (2)	O9^{i}—Dy4—O20	106.2 (2)
O6—Dy1—O20	78.83 (2)	O22—Dy2—O8	131.9 (2)	O9^{i}—Dy4—O21	129.6 (2)
O6—Dy1—N1	146.7 (2)	O22—Dy2—N3	134.3 (2)	O9^{i}—Dy4—O22	75.5 (2)
O6—Dy1—N2	68.1 (2)	N3—Dy2—O8	71.0 (2)	O14—Dy4—O1	100.2 (2)
O7—Dy1—N1	85.2 (2)	O5^{i}—Dy3—O11	107.5 (2)	O14—Dy4—O2	76.4 (2)
O7—Dy1—N2	71.1 (2)	O5^{i}—Dy3—O12	77.7 (3)	O14—Dy4—O18	133.6 (2)
O13—Dy1—O2	78.3 (2)	O5^{i}—Dy3—O17	72.0 (2)	O14—Dy4—O19	75.7 (2)
O13—Dy1—O7	144.2 (2)	O5^{i}—Dy3—O18	91.9 (2)	O14—Dy4—O20	83.8 (2)
O13—Dy1—O20	75.3 (2)	O5^{i}—Dy3—O21	139.9 (2)	O14—Dy4—O21	154.6 (2)
O13—Dy1—N1	115.3 (2)	O11—Dy3—O12	63.5 (2)	O14—Dy4—O22	128.4 (2)

O13—Dy1—N2	138.2 (3)	O11—Dy3—O17	145.1 (2)	O18—Dy4—O1	85.6 (2)
O20—Dy1—O2	66.21 (2)	O11—Dy3—O21	72.9 (2)	O18—Dy4—O2	132.3 (2)
O20—Dy1—O7	69.23 (2)	O15—Dy3—O5^{i}	140.4 (2)	O18—Dy4—O19	54.1 (2)
O20—Dy1—N1	130.2 (2)	O15—Dy3—O11	87.0 (2)	O18—Dy4—O22	73.3 (2)
O20—Dy1—N2	126.0 (2)	O15—Dy3—O12	76.4 (3)	O19—Dy4—O1	67.7 (2)
N2—Dy1—N1	80.0 (2)	O15—Dy3—O17	75.4 (2)	O20—Dy4—O1	108.8 (2)
O7—Dy2—O8	63.6 (2)	O15—Dy3—O18	99.9 (2)	O20—Dy4—O2	64.1 (2)
O7—Dy2—O22	135.8 (2)	O15—Dy3—O21	79.3 (2)	O20—Dy4—O18	138.0 (2)
O7—Dy2—N3	88.3 (2)	O15—Dy3—O22	140.2 (2)	O20—Dy4—O19	158.0 (2)
O10—Dy2—O7	95.2 (2)	O17—Dy3—O12	82.9 (2)	O20—Dy4—O22	66.8 (2)
O10—Dy2—O8	135.9 (2)	O17—Dy3—O21	130.7 (2)	O21—Dy4—O1	69.9 (2)
O10—Dy2—O20	79.6 (2)	O18—Dy3—O11	140.2 (2)	O21—Dy4—O2	78.8 (2)
O10—Dy2—O22	90.9 (2)	O18—Dy3—O12	156.2 (2)	O21—Dy4—O18	69.9 (2)
O10—Dy2—N3	70.1 (2)	O18—Dy3—O17	73.5 (2)	O21—Dy4—O19	117.1 (2)
O11—Dy2—O7	146.7 (2)	O18—Dy3—O21	70.1 (2)	O21—Dy4—O20	79.1 (2)
O11—Dy2—O8	83.9 (2)	O21—Dy3—O12	130.6 (2)	O21—Dy4—O22	60.5 (2)
O11—Dy2—O10	104.0 (2)	O22—Dy3—O5^{i}	79.1 (2)	O22—Dy4—O1	128.6 (2)
O11—Dy2—O20	140.0 (2)	O22—Dy3—O11	72.3 (2)	O22—Dy4—O19	133.2 (2)

Symmetry code:(i) −x+2, −y+2, −z+1