
Supporting Information

Tuning the porosity of lanthanide MOFs with 2,5-pyrazinedicarboxylate and the first in situ hydrothermal carboxyl transfer

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10 **Table S1** Microanalysis and IR spectral data for complexes $[\text{Ln}(\text{pzdc})(\text{ox})_{0.5}(\text{H}_2\text{O})_2] \cdot 4.5\text{H}_2\text{O}$ (**1-Ln**; Ln = Nd, Sm, Eu, Gd, Tb, Dy) and $[\text{Ln}(2,5\text{-pzdc})_{0.5}(2,6\text{-pzdc})(\text{H}_2\text{O})_3]$ (**2-Ln**; Ln = Pr, Sm, Eu, Tb)

| Complex | Microanalysis (%) | | IR band (cm^{-1}) |
|-------------|---|--|------------------------------|
| | Calculated | Found | |
| 1-Nd | C 17.83 (17.81); H 3.21 (3.15); N 5.94 (5.90) | 3381 s, 1615 s, 1490m, 1406 s, 1316 s, 1187 m, 1046 m, 851 m, 797 m, 775 w, 701 w, 531 w, 484 w | |
| 1-Sm | C 17.61 (17.5); H 3.17 (3.10); N 5.87 (5.83) | 3374 s, 1607 s, 1485 m, 1406 s, 1317 s, 1176 m, 1046 m, 848 m, 799 m, 533 w | |
| 1-Eu | C 17.55 (17.51); H 3.16 (3.13); N 5.85 (5.79) | 3378 s, 1608 s, 1485 m, 1405 s, 1318 s, 1177 m, 1045 m, 928 w, 847 m, 799 w, 777 w, 534 w, 488 w | |
| 1-Gd | C 17.35 (17.34); H 3.12 (3.10); N 5.78 (5.75) | 3445 s, 1605 s, 1486 m, 1387 s, 1320 s, 1178 m, 1046 m, 845 m, 776 w, 522 w | |
| 1-Tb | C 17.29 (17.22); H 3.11 (3.12); N 5.76 (5.74) | 3328 s, 1608 s, 1486 m, 1408 s, 1319 s, 1177 m, 1045 m, 849 m, 777 w, 537 w, 490 w | |
| 1-Dy | C 17.17 (17.16); H 3.09 (3.07); N 5.72 (5.71) | 3356 s, 1610 s, 1486 m, 1408 s, 1319 s, 1178 m, 1046 m, 850 m, 801 w, 778 w, 539 w, 490 w | |
| 2-Pr | C 24.34 (24.13); H 2.04 (2.12); N 9.46 (9.31) | 3427 s, 1679 m, 1611 s, 1479 w, 1461 w, 1401 s, 1343 w, 1326 m, 1221 w, 1188 m, 1134 m, 1047 m, 944 w, 830 w, 781 w, 752 m, 670 w, 588, w 549 w 513 w, 461 w | |
| 2-Sm | C 23.62 (23.83); H 2.11 (2.00); N 9.42 (9.27) | 3430 s, 1681 w, 1614 s, 1481 w, 1460 w, 1405 m, 1345 w, 1220 w, 1189 m, 1136 m, 1048 m, 946 m, 909 w, 833 w, 780 w, 751 m, 669 w, 589 w, 551 w, 516 w, 462 w | |
| 2-Eu | C 23.75 (23.45); H 1.99 (2.09); N 9.23 (9.07) | 3430 s, 1680 m, 1612 s, 1481 w, 1460 w, 1406 s, 1346 w, 1327 m, 1220 w, 1188 m, 1135 m, 1048 m, 946 w, 832 w, 781 w, 751 m, 672 w, 589, w 551 w 516 w, 463 w | |
| 2-Tb | C 23.39 (23.12); H 1.96 (2.07); N 9.09 (9.21) | 3435 s, 1680 m, 1618 s, 1482 w, 1464 w, 1408 s, 1344 w, 1325 m, 1222 w, 1189 m, 1136 m, 1049 m, 947 w, 831 w, 782 w, 750 m, 674 w, 588, w 554 w 517 w, 463 w | |
