

SUPPLEMENTARY MATERIAL

Structure and NIR-luminescence of ytterbium(III) beta-diketonate complexes with 5-nitro-1,10-phenanthroline ancillary ligand: assessment of chain length and fluorination impact

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Table S1. Main ATR-FTIR peaks

[Yb(tfnb) ₃ (5NO ₂ phen)]	2985 2940 2860 2370	1625	1540	1460		1290 1200	1140	970 920 840 820 800	750 696	590 470
[Yb(tfa) ₃ (5NO ₂ phen)]	- - 2365 2355 2260	1620	1575 1520	1470 1410	1370 1320	1270 1200	1140	1020 970 910 850	770 690	600 540
[Yb(tfac) ₃ (5NO ₂ phen)]	- - 2375 2356	1639	1535 1500	1430	1366 1302	1230 1182	1139	1000 936 810 797	750 735 651	616 570 529
[Yb(tpm) ₃ (5NO ₂ phen)]	2990 2930 2870 2360	1630	1513	1470	1360 1310		1140	1030 850 800	695	575
[Yb(fhd) ₃ (5NO ₂ phen)]	(2830)	1651	1533 1520 1500	1458 1429	1358 1315	1223 1203	1142 1122	1100 1034 964 930 895 837 797	748 735 665 640	577 536 430
[Yb(h) ₃ (5NO ₂ phen)]	2990 2960 2375	1595	1520 1500	1432	1375 1340	1252 1200		1080 1030 1000 910 850	730 640	542
[Yb(dmh) ₃ (5NO ₂ phen)]	2950 2855 2585 2350	1578	1520	1430	1325	1290 1155		1083 958 913 853	735 636	557

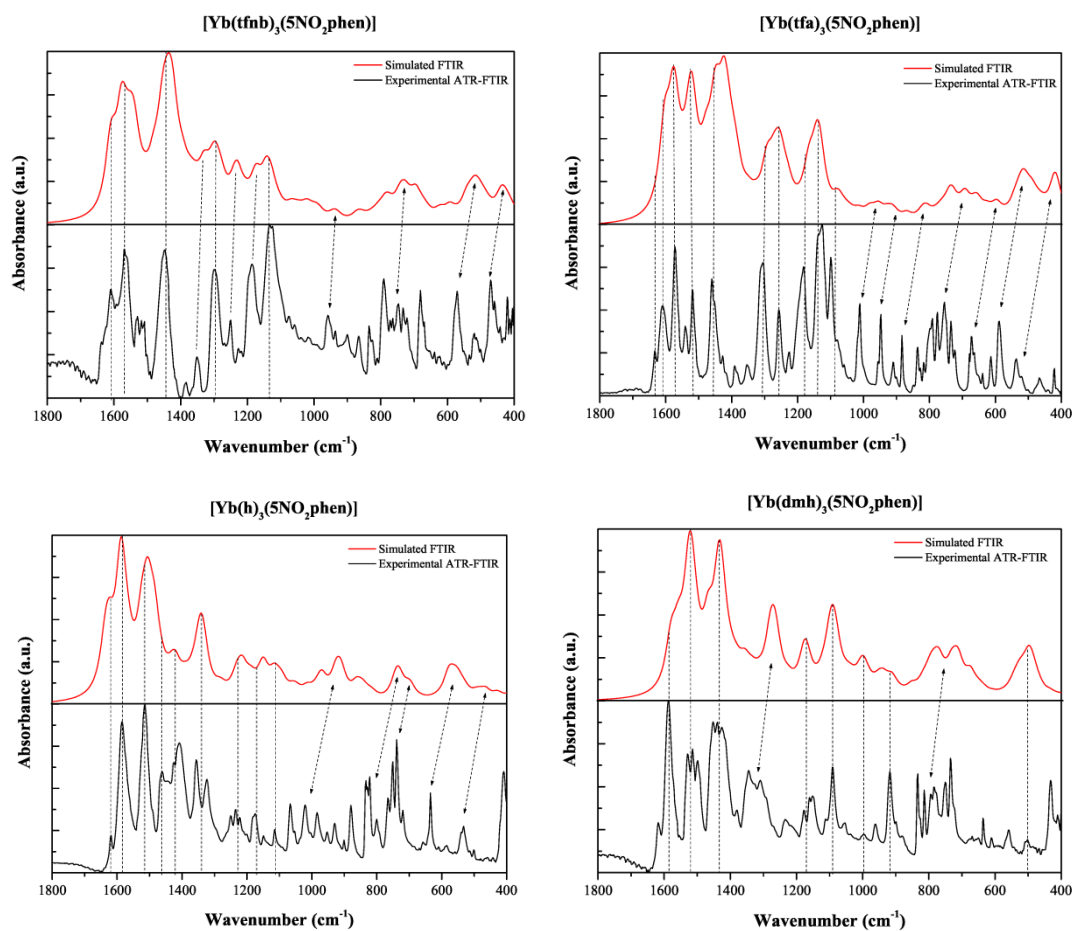


Figure S1 Comparison of simulated FTIR spectra with experimental ATR-FTIR spectra.

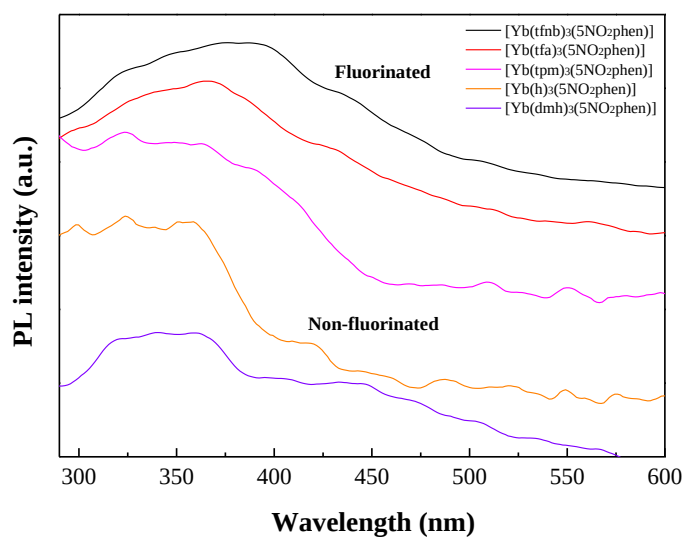


Figure S2. Excitation spectra of some of the complexes under detection at 980 nm