Supporting information

Absorption- and excitation-modulated luminescence of Pr\(^{3+}\), Nd\(^{3+}\) and Lu\(^{3+}\) compounds with dianions of tetrafluoroterephthalic and camphoric acids

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Synthesis of the complexes

Ln\(_2\)(Camph)\(_2\)(NO\(_3\))\(_2\)(MeOH)\(_4\) (LnCamph, Ln = Pr, Nd, Lu) were obtained as described earlier for similar complexes with Ln = Eu, Gd, Tb and in the same manner as LnFbdc, using H\(_2\)Camph instead of H\(_2\)Fbdc and without DMF in the reaction mixture. A methanol solution (12 mL) containing Ln(NO\(_3\))\(_3\)·6H\(_2\)O (0.3 g, 6.9×10\(^{-4}\) mol) and camphoric acid (0.138 g, 6.9×10\(^{-4}\) mol) was placed in a desiccator with pyridine (5.0 mL). The light-green (Pr\(^{3+}\)), light-violet (Nd\(^{3+}\)) and colourless (Lu\(^{3+}\)) crystals, which formed in 1–2 weeks, were separated by filtration, washed with methanol (2 × 3 mL) and air-dried;
yields were all ca. 70%. Anal. for **PrCamph**, Ln = Pr: C\textsubscript{24}H\textsubscript{44}N\textsubscript{2}O\textsubscript{18}Pr\textsubscript{2} calc./found: C 31.0/30.7, H 4.73/4.52, N 3.01/2.85; for **NdCamph**, Ln = Nd: C\textsubscript{24}H\textsubscript{44}N\textsubscript{2}O\textsubscript{18}Nd\textsubscript{2} calc./found: C 30.8/30.5, H 4.70/4.73, N 2.99/2.74; for **LuCamph**, Ln = Lu: C\textsubscript{24}H\textsubscript{44}N\textsubscript{2}O\textsubscript{18}Lu\textsubscript{2} calc./found: C 28.9/28.5, H 4.41/4.62, N 2.81/2.75.

Figure S1. X-ray powder diffraction data for (a) **LnFbdc** and (b) **LnCamph**. Powder diffraction data for known coordination polymers **PrFbdc**
\(^2\) and **NdCamph**
\(^3\) were calculated using the Mercury 3.8 software.

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