

Title: **Chiral lanthanide complexes derived from enantiomerically pure carboxylic acids.**

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This project is based on the synthesis and characterisation of a family of multiproperty lanthanide complexes derived from enantiomerically pure carboxylate ligands.

Compounds **(S)-Sm**, **(R)-Sm**, **(S)-Ho** and **(S)-Gd** were successfully synthesised and characterised. Their luminescent and magnetic properties were studied and for the pair of enantiomers, **(S)-Sm** and **(R)-Sm**, their optical properties were also studied.

A plot of the structures of complexes **(S)-Sm**, with its luminescence spectrum, and **(S)-Ho** are shown below:

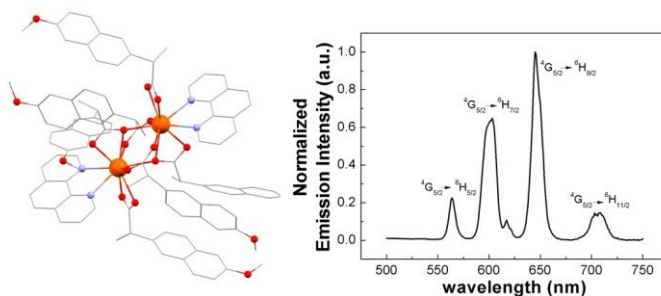


Figure 1. Partially labelled plot of compound **(S)-Sm** (left) and its emission spectrum at room temperature and $\lambda_{ex} = 350$ nm (right).

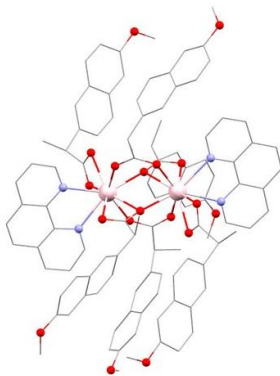


Figure 2. Partially labeled plot of compound **(S)-Ho**.

Keywords: coordination chemistry, lanthanides, chiral carboxylate ligands, luminescence, magnetism.