

Brilliant Sm, Eu, Tb, and Dy chiral lanthanide complexes with strong circularly polarized luminescence.

Autorzy

S. Petoud
Gilles Muller
E. G. Moore
J. Xu
Jerzy Sokolnicki
James P. Riehl
U. N. Le
S. M. Cohen
K. N. Raymond

Rok wydania

2007

Czasopismo

Journal of the American
Chemical Society

Numer woluminu

129

Strony

77-83

DOI

10.1021/ja064902x

Kolekcja

Naukowa

Język

Angielski

Streszczenie

The synthesis, characterization, and luminescent behavior of trivalent Sm, Eu, Dy, and Tb complexes of two enantiomeric, octadentate, chiral, 2-hydroxyisophthalamide ligands are reported. These complexes are highly luminescent in solution. Functionalization of the achiral parent ligand with a chiral 1-phenylethylamine substituent on the open face of the complex in close proximity to the metal center yields complexes with strong circularly polarized luminescence (CPL) activity. This appears to be the first example of a system utilizing the same ligand architecture to sensitize four different lanthanide cations and display CPL activity. The luminescence dissymmetry factor, g_{lum} , recorded for the Eu(III) complex is one of the highest values reported, and this is the first time the CPL effect has been demonstrated for a Sm(III) complex with a chiral ligand. The combination of high luminescence intensity with CPL activity should enable new bioanalytical applications of macromolecules in chiral environments.

Słowa kluczowe

Cations, Lanthanides, Ligands, Luminescence, rare earth complexes

Adres publiczny

<https://doi.org/10.1021/ja064902x>

Strona internetowa wydawcy

<https://www.acs.org/content/acs/en.html>

Artykuł

Plik został wygenerowany dnia 2026-10-08 05:02:19

Adres w repozytorium <https://old.chem.uni.wroc.pl/pl/repozytorium/WHJgFX8>.