

Tuning White Light Emission in Dinuclear Phenoxo Bridged DyIII Complexes

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© 2019 American Chemical Society. A new series of dinuclear dysprosium(III) complexes,

[Dy₂(LCH₃)₂(NO₃)₂(MeOH)₂] (I), [Dy₂(LCH₃)₂(NO₃)₂(DMF)₂]-2DMF (II),

[Dy₂(LCl)₂(NO₃)₂(DMF)₂]-2DMF (III), and [Dy₂(LCH₃O)₂(NO₃)₂(DMF)₂] (IV), with

2,2'-[[[(2-pyridinylmethyl)imino]di(methylene)]bis(4-R-phenol)], where R = CH₃, Cl, and CH₃O, were

investigated as potential white light emitters. All octacoordinated dysprosium(III) are

phenoxo-bridged species and have a similar coordination environment. Nevertheless, I has a MeOH

ligand molecule, while for II-IV a DMF ligand replaces that of MeOH. The nature of the coordinated

solvent molecule plays an important role in the behavior of the thermal dependence of the Y/B

(yellow/blue) emission ratio of the DyIII complexes (Y: $4F_{9/2} \rightarrow 6H_{13/2}$, yellow and B: $4F_{9/2} \rightarrow$

$6H_{15/2}$, blue transitions), since for I the variation of this ratio is significant, while for the other DyIII

complexes with DMF as ligand the ratio remains constant within experimental error. At room te