

New family of heterometallic complexes with a $[\text{Ln}_2\text{Mn}^{\text{III}}_6\text{O}_3]$ core

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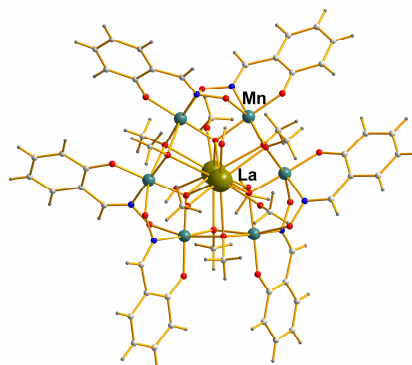
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In the chemistry of polynuclear mixed-valence complexes aiming at design of new single molecule magnets, high-spin anisotropic lanthanide ions have been introduced to the molecular core ^[1-4]. A number of such compounds is already known ^[1-2]. Some of them are single molecule magnets ^[3-4].

First three examples of members of a new family of

$[\text{Ln}_2(\text{CH}_3\text{OH})_{6-x}(\text{H}_2\text{O})_x\text{Mn}^{\text{III}}_6(\text{saO})_6(\text{OCH}_3)_6]$ (Ln = La (1), Gd (2), Pr (3), saOH₂ = salicylaldoxime) complexes are presented. Their synthesis involves a simple self-assembly route. Preliminary magnetic properties studies have been carried out.

In each complex molecule a central Ln-Ln unit is triply bridged by three μ_3 -oxido ligands, each of which is further bonded to two Mn^{III} centres. Thus defined six Mn^{III} centres are alternately double-bridged by μ_3 -methoxido ligands and salicylaldoxime ligands.



Literatur:

- [1] A.M. Ako, V. Mereacre, R. Clerac, I.J. Hewitt, Yanhua Lan, G. Buth, C.E. Anson, A.K. Powell, *Inorg. Chem.* **2009**, 48, 6713. [2] R.A. Reynolds, D. Coucouvanis, *J. Am. Chem. Soc.* **1998**, 120, 209. [3] A. Mishra, W. Wernsdorfer, K. A. Abboud, G. Christou, *J. Am. Chem. Soc.* **2004**, 126, 15648. [4] V. M. Mereacre, A. M. Ako, R. Clerac, W. Wernsdorfer, G. Filoti, J. Bartolome, C. E. Anson, A. K. Powell, *J. Am. Chem. Soc.* **2007**, 129, 9248.