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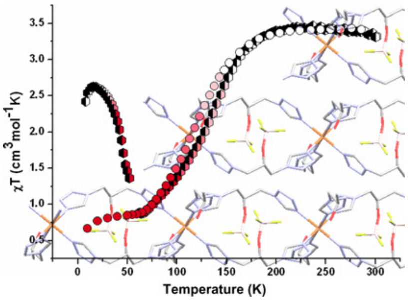
Articles

Manuel Quesada, Ferry Prins, Olivier Roubeau, Patrick Gamez, Simon J. Teat, Petra J. van Koningsbruggen, Jaap G. Haasnoot, Jan Reedijk

Inorganica Chimica Acta 360 (2007) 3787

A 2D [Fe^{II}-bistetrazole] coordination polymer exhibiting spin-crossover properties

The 2D compound [Fe^{II}(btzpol)$_{1.8}$(btzpol-OBF$_3$)$_{1.2}$](BF$_4$)$_{0.8}$ · (H$_2$O)$_{0.8}$(CH$_3$CN) shows spin-transition properties, both induced by temperature and light, with $T_{1/2}$ = 112 K and T(*LIESST*) = 46 K, respectively. The relaxation of the metastable high-spin state created by irradiation is exponential, following an Arrhenius type behavior at high temperature, and dominated by a temperature independent tunneling process at lower temperatures.

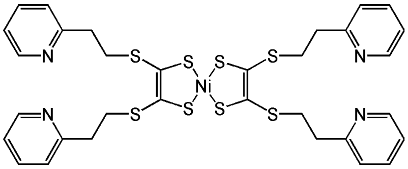


S. Rabaça, M.C. Duarte, I.C. Santos, M. Fourmigué, M. Almeida

Inorganica Chimica Acta 360 (2007) 3797

A new approach to divalent thio-azo ligands; Ni(dpesdt)$_2$

The first example of a tetra-azo substituted bisdithiolene transition metal complex [Ni(d-pesdt)$_2$] has been synthesized and structurally characterized by cyclic voltammetry and X-ray diffraction methods. It crystallizes in two polymorphs, one in the triclinic space group $P\bar{1}$ and one other in the monoclinic space group $P2_1/n$.

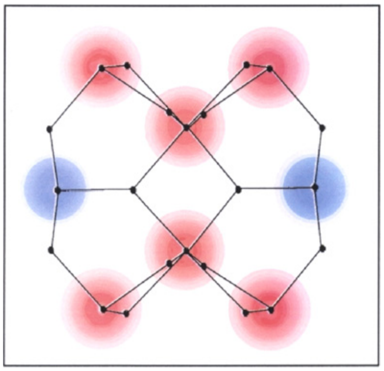


B. Gillon, C. Sangregorio, A. Caneschi, D. Gatteschi, R. Sessoli, E. Ressouche, Y. Pontillon

Inorganica Chimica Acta 360 (2007) 3802

Experimental spin density in the high spin ground state of the Fe$_8$pcl cluster

The spin density determined by polarised neutron diffraction in the S = 10 ground state of the Fe$_8$pcl cluster is reported. The iron experimental spin populations agree with calculations using exact diagonalisation of the magnetic exchange Hamiltonian with experimentally determined J values. This confirms that spin density determination provides valuable information on the relative strengths and signs of the intracluster interactions.



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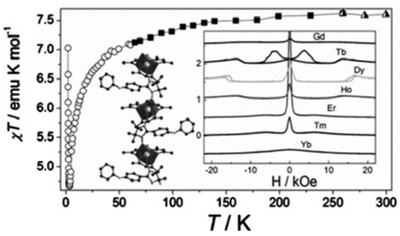
K. Bernot, L. Bogani, R. Sessoli, D. Gatteschi

Inorganica Chimica Acta 360 (2007) 3807

$[Tm^{III}(hfac)_3(NITPhOPh)]_\infty$: A new member of a lanthanide-based Single Chain Magnets family

The polymeric coordination compound of formula $[Tm(hfac)_3(NITPhOPh)]_\infty$ (where NITPhOPh is a nitronyl-nitroxide radical) is synthesized and found to belong to the only reported family of isostructural Single Chain Magnets. Comparison of the extracted parameters with those of the previously reported isostructural compounds confirms a trend along the lanthanide series.

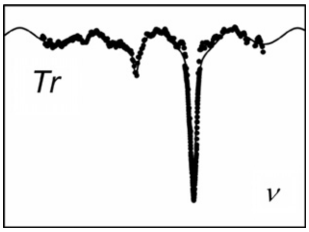


N. Kirchner, J. van Slageren, M. Dressel

Inorganica Chimica Acta 360 (2007) 3813

Simulation of frequency domain magnetic resonance spectra of molecular magnets

An efficient simulation program for the fit of frequency-domain magnetic resonance spectra using the single spin model is introduced. An example shows that the program can accurately determine sign and magnitude of the zero-field splitting parameters from the spectra.

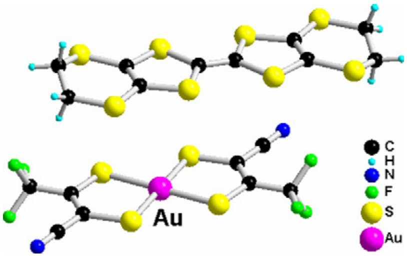


Olivier Jeannin, Marc Fourmigué

Inorganica Chimica Acta 360 (2007) 3820

BEDT-TTF salts of the unsymmetrical $[M(tfadt)_2]^-$ dithiolene complexes (M = Ni, Au; tfadt = $S_2C_2(CN)(CF_3)$)

In both 1:1 BEDT-TTF salts of the isosteric $[M(tfadt)_2]^-$ dithiolene complexes [M = Au ($S = 0$), M = Ni ($S = 1/2$)], the BEDT-TTF radical cations form chains with lateral overlap and strong antiferromagnetic interactions. The differences between the salts with the paramagnetic nickel and diamagnetic gold complexes are analyzed and discussed.



Chiara Carbonera, Andrea Dei,
Jean-François Létard, Claudio Sangregorio,
Lorenzo Sorace

Inorganica Chimica Acta 360 (2007) 3825

Relaxation dynamics of a photoinduced di-cobalt-tetraoxolene valence tautomer

The relaxation kinetics of the photoinduced metastable state of a dinuclear Co-tetraoxolene complex are reported and discussed. The analysis of the temperature dependence reveals that at low temperature a phonon assisted tunnelling process dominates, while a thermally activated one is responsible for the relaxation at higher temperatures.