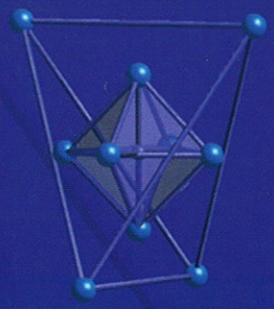

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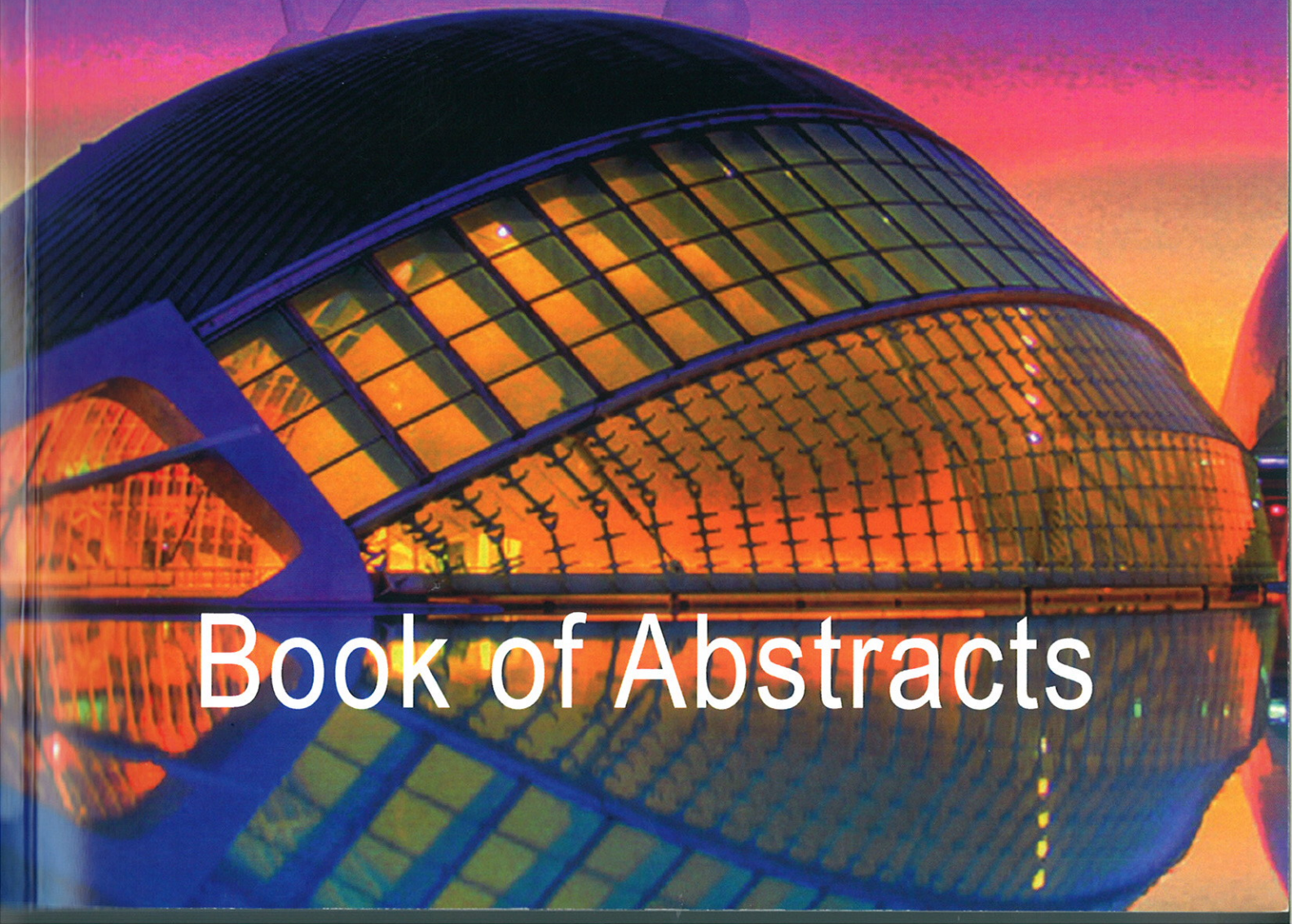
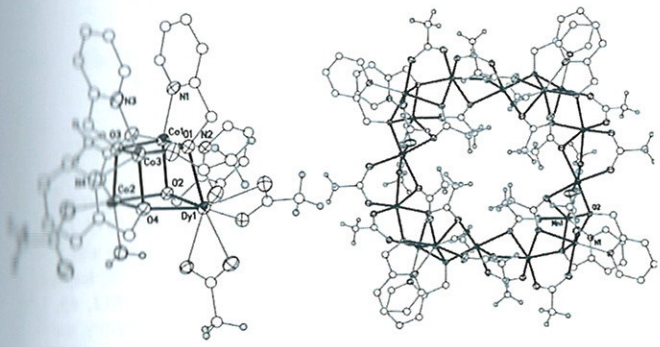


Book of Abstracts

could efficiently coordinate to two or three metals through oxo-bridges. Using this ligand, we have successfully obtained a series of 3d heterometallic aggregates as well as pure 3d metal aggregates. The self-assembly method demonstrates a suitable synthetic pathway to magnetic materials.

Using hmp as ligand, we were able to synthesize a novel hexadeca-nuclear manganese square wheel cluster and a series of cobalt-lanthanide mixed-metal aggregates. We measured their dc magnetic susceptibility from room temperature down to cryogenic conditions to reveal their nature of intermetallic interaction. Meanwhile, the magnetizations under various magnetic fields at cryogenic conditions allow us to evaluate their magnetic anisotropy and magnetocaloric effect. In this presentation, we shall outline the strategy and some interesting findings in the cluster designs and their magnetic properties.



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[1] Zhang, J.; Teo, P.; Pattacini, R.; Kermagoret, A.; Welter, R.; Rogez, G.; Hor, T. S. A.; Braunstein, P., *Angew. Chem. Int. Ed.* **2010,** *49*, 4443-4446. [2] Zhang, J. H.; Sulaiman, N. B.; Tio, P. X. S.; Hor, T. S. A., *Crystengcomm* **2011,** *13*, 2015-2022.

Keywords: heterometallic, magnetism, aggregate

MS.A1.P.065

Fe(II) Compounds Containing *S*-Triazine/2,2′-Dipyridylamine-Based Ligands

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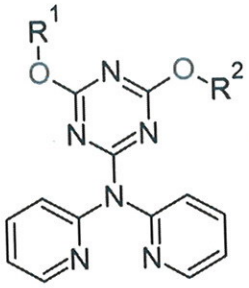
In the present study, new ligands based on a triazine ring substituted with a 2,2′-dipyridylamine moiety[1] have been designed and prepared with the objective to investigate the influence of electron-donating and electron-withdrawing groups on the spin-crossover properties of a series of mononuclear Fe(II) coordination compounds. Hence, *s*-triazine-containing ligands having electron-rich or/and electron-poor aryl substituents[2] have been synthesized and used to prepare iron(II) coordination compounds with different Fe(II) salts. All complexes obtained, which have been fully characterised, exhibit interesting spin-crossover properties whose distinct behaviours are both ligand- and anion-dependent. The important features of this investigation are detailed in the poster.



R^1, R^2 = electron-poor and/or electron-rich aryl groups

[1] M. Quesada, P. de Hoog, P. Gamez, O. Roubeau, G. Aromí, B. Donnadieu, C. Massera, M. Lutz, A. L. Spek, J. Reedijk, *Eur. J. Inorg. Chem.*, **2006**, 1353–1361. [2] R. J. Götz, A. Robertazzi, I. Mutikainen, U. Turpeinen, P. Gamez, J. Reedijk, *Chem. Commun.*, **2008**, 3384–3386.

Keywords: Spin-crossover, iron(II) compounds, *s*-triazine/2,2 -dipyridylamine-based ligands

MS.A1.P.066

New Fe(II) Spin Crossover Compounds Switching Above Room Temperature

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Since a decade we work on mono- and polynuclear Fe(II) complexes using 1-functionalized tetrazoles aiming for spin crossover compounds for possible technological applications in information technologies and devices. Recent studies on alternative reaction pathways for the ligand synthesis yielded a microwave approach allowing for so far not accessible ligands in the homologue series of α,ω-ditetrazolyl alkanes or halogenated alkyl-tetrazoles. Despite giving additional insight into structure – property relationships these new Fe(II) spin crossover compounds proof the concept (*e.g.* terminal side-chain halogenation) to upshift the spin transition temperature.

Parallel to the above-mentioned compounds also silylated tetrazoles were synthesized yielding the first tetrazole-based Fe(II) spin crossover compounds featuring thermal spin transition above room temperature.

Synthetic aspects, structural, spectroscopic and magnetic characterisations will be presented.

Keywords: iron(II), spin crossover, silylated tetrazoles

MS.A1.P.067

$[M_9W_6(CN)_{48}(solv)_{24}]$ Clusters as Building Blocks for Novel Hybrid Networks

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The search for novel hybrid networks is one of the major challenges in current coordination chemistry. The use of large polynuclear clusters as building blocks is considered in order to obtain a multifunctional network with the desired properties related to porosity, e.g., guest