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Poziție didactică: Lector doctor

Direcții actuale de cercetare: chimie metalo-supramoleculară, inginerie cristalină, materiale moleculare multifuncționale conținând purtători de spin diferiți.

Cursuri predate

- Chimie supramoleculară – curs pentru anul III;
- Biomolecule – curs pentru master;

Lucrări publicate

1. “Constructing Robust Channel Structures by Packing Metallacalixarenes: Reversible Single-Crystal-to-Single-Crystal Dehydration”, C. Ene, **A. M. Madalan**, C. Maxim, B. Jurca, N. Avarvari, M. Andruh, *J.A.C.S.*, în curs de publicare.
2. “Heterospin Systems Constructed from $[Cu_2Ln]^{3+}$ and $[Ni(mnt)_2]^{1-2-}$. Tectons: First 3p-3d-4f Complexes (mnt = Maleonitriledithiolato)”, **A. M. Madalan**, N. Avarvari, M. Fourmigué, R. Clérac, L. F. Chibotaru, S. Clima, M. Andruh, *Inorg. Chem.*, **2008**, 47, 940-950.
3. “Structural diversity in metal-organic frameworks derived from binuclear alkoxo-bridged copper(II) nodes and pyridyl linkers”, G. Marin, M. Andruh, **A. M. Madalan**, A. J. Blake, C. Wilson, N. R. Champness, M. Schröder, *Cryst. Gr. & Design*, **2008**, 8, 964-975.
4. “One-dimensional and two-dimensional coordination polymers constructed from copper(II) nodes and polycarboxylato spacers: synthesis, crystal structures and magnetic properties”, C. D. Ene, F. Tuna, O. Fabelo, C. Ruiz-Pérez, **A. M. Madalan**, H. W. Roesky, M. Andruh, *Polyhedron*, **2008**, 27, 574-582.
5. “Conducting Mixed Valence Salt of Bis(ethylenedithio)-tetrathiafulvalene (BEDT-TTF) with the Paramagnetic Heteroleptic Anion $[Cr^{III}(oxalate)_2(2,2'-bipyridine)]$ ”, **A. M. Madalan**, E. Canadell, P. Auban-Senzier, D. Brânzea, M. Andruh, N. Avarvari, *New J. Chem.*, **2008**, 32, 333-339.
6. “First Ni^{II} - Ln^{III} Coordination Polymers Constructed by Using $[Ni(bpca)_2]$ as a Building Block [Hbpca = bis(2-pyridylcarbonyl)amine]: Synthesis, Crystal Structures and Magnetic Properties”, **A. M. Madalan**, K. Bernot, F. Pointillart, M. Andruh, A. Caneschi, *Eur. J. Inorg. Chem.*, **2007**, 5533-5540.
7. “Generation of $[2 \times 2]$ Grid Metallosupramolecular Architectures from Preformed Ditopic Bis(acylhydrazone) Ligands and through Component Self-assembly”, X.-Y. Cao, J. Harrowfield, J. Nitschke, J. Ramirez, A.-M. Stadler, N. Kyritsakas-Gruber, **A. Madalan**, K. Rissanen, L. Russo, G. Vaughan, J.-M. Lehn, *Eur. J. Inorg. Chem.*, **2007**, 2944-2965.

8. "O•••S versus N•••S Intramolecular Nonbonded Interactions in Neutral and Radical Cation Salts of TTF-Oxazoline Derivatives: Synthesis, Theoretical Investigations, Crystalline Structures, and Physical Properties", C. Réthoré, **A. Madalan**, M. Fourmigué, E. Canadell, E. Lopes, M. Almeida, R. Clérac, N. Avarvari, *New J. Chem.*, **2007**, *31*, 1468-1483.
9. "Supramolecular Bimetallic Systems Constructed through π - π Stacking and Hydrogen Bond Interactions", **A. M. Madalan**, M. Andruh, N. Avarvari, Marc Fourmigué, *Synth. React. Inorg. M.*, **2007**, 757-764.
10. "Copper(II) and cobalt(II) complexes of chiral tetrathiafulvalene-oxazoline (TTF-OX) and tetrathiafulvalene-thiomethyl-oxazoline (TTF-SMe-OX) derivatives", **A. M. Madalan**, C. Réthoré, N. Avarvari, *Inorg. Chim. Acta*, **2007**, *360*, 233-240.
11. "Rational design of supramolecular grid-like layers and zigzag chains through a unique interplay of d^{10} - d^{10} and π - π stacking interactions", **A. M. Madalan**, N. Avarvari, M. Andruh, *Cryst. Gr. & Design*, **2006**, *6*, 1671-1675.
12. "Metal complexes as second-sphere ligands", **A. M. Madalan**, N. Avarvari, M. Andruh, *New J. Chem.*, **2006**, *30*, 521-523.
13. "Chemistry at the apical position of square-pyramidal copper(II) complexes: synthesis, crystal structures, and magnetic properties of homopolynuclear complexes with azido bridges containing $[\text{Cu}(\text{AA})(\text{BB})]^+$ moieties (AA = acetylacetonate; BB = 1,10-phenanthroline, bipy = 2,2'-bipyridine)", **A. M. Madalan**, M. Noltemeyer, M. Neculai, H. W. Roesky, M. Schmidtman, A. Müller, Y. Journaux, M. Andruh, *Inorg. Chim. Acta*, **2006**, *359*, 459-467.
14. "Exchange interaction at the supramolecular level. EPR investigation of two copper (II) compounds: $[\text{Cu}_2(\text{acac})_2(\text{phen})_2(\text{bpe})](\text{ClO}_4)_2 \cdot (\text{bpe}) \cdot \text{CH}_3\text{CN} \cdot \text{H}_2\text{O}$ and $[\text{Cu}_2(\text{acac})_2(\text{phen})_2(\text{bpp})](\text{ClO}_4)_2 \cdot 6\text{H}_2\text{O}$ (bpe = trans-1,2-bis(4-pyridyl)ethylene, bpp = bis(4-pyridyl)propane)", V. Voronkova, R. Galeev, L. Korobchenko, **A. M. Madalan**, M. Andruh, V. Ch. Kravtsov, Y. A. Simonov, *Appl. Magn. Res.*, **2005**, *28*, 297-310.
15. "Construction of tube- and ladder-like copper(II) coordination polymers based on the nicotinato tectons", **A. M. Madalan**, C. Paraschiv, J.-P. Sutter, M. Schmidtman, A. Müller, M. Andruh, *Cryst. Gr. & Design*, **2005**, *5*, 707-711.
16. "Mononuclear and one-dimensional polynuclear Cu(II) complexes with two different chelatic ligands. Syntheses, structural and spectral characterization of $[\text{Cu}(\text{acac})(\text{phen})(\text{H}_2\text{O})](\text{ClO}_4)$ and $[\text{Cu}(\text{acac})(\text{bipym})(\text{ClO}_4)]_n$ ", **A. M. Madalan**, C. Ruiz-Pérez, E. Melnic, V. Kravtsov, M. Andruh, *Rev. Roum. Chim.*, **2005**, *50*, 11-17.
17. "A unique diamantoid network resulted from the convolution of π - π stacking and lipophilic interactions", **A. M. Madalan**, V. Ch. Kravtsov, Y. A. Simonov, V. Voronkova, L. Korobchenko, N. Avarvari, M. Andruh, *Cryst. Gr. & Design*, **2005**, *5*, 45-47.

18. "Chemistry at the apical position of square-pyramidal copper (II) complexes. Synthesis, crystal structures and magnetic properties of mononuclear Cu(II), and heteronuclear Cu(II)-Hg(II) and Cu(II)-Co(II) complexes containing $[Cu(AA)(BB)]^+$ moieties (AA = acetylacetonate, salicylaldehyde; BB = 1,10-phenanthroline, 4,4'-dimethyl-2,2'-bipyridine)", **A. M. Madalan**, V. Ch. Kravtsov, D. Pajic, K. Zadro, Y. A. Simonov, N. Stanica, L. Ouahab, J. Lipkowski, M. Andruh, *Inorg. Chim. Acta*, **2004**, 357, 4151-4164.
19. "Sinteza, caracterizarea structurală și spectrală a doi noi compuși de tipul $[Cu(sal)(AA)(ClO_4)]$ (sal = anionul aldehidei salicilice, AA = 4,4'-dimetil-2,2'-bispiridil și 2,2'-bispirimidină)", **A. M. Mădălan**, E. Melnic, V. Ch. Kravtsov, Y. A. Simonov, M. Schmidtman, A. Müller, M. Andruh, *Rev. de Chimie*, **2004**, 9, 678-682.
20. "Exchange Interactions at the Supramolecular Level - Synthesis, Crystal Structure, Magnetic Properties, and EPR Spectra of $[Mn(MAC)(TCNQ)_2](MAC - \text{Pentaaza Macrocylic Ligand}; TCNQ^- - \text{Radical Anion of } 7,7,8,8\text{-Tetracyano-}p\text{-quinodimethane})$ ", **A. M. Madalan**, V. Voronkova, R. Galeev, L. Korobchenko, J. Magull, H. W. Roesky, M. Andruh, *Eur. J. Inorg. Chem.*, **2003**, 1995-1999.
21. "New tetranuclear copper(II) complexes obtained by using compartmental and exo-dentate ligands", D. Visinescu, **A. M. Madalan**, V. Kravtsov, Y. A. Simonov, M. Schmidtman, A. Müller, M. Andruh, *Polyhedron*, **2003**, 22, 1385-1389.
22. "Supramolecular solid-state architectures constructed from 4,4'-bipyridine-N,N'-dioxide and dicyanamido tectons. Synthesis and crystal structures of $[M(bpno)_2\{N(CN)_2\}_2(H_2O)_2]$ (M = Co, Mn) and $[Cu(bpno)\{N(CN)_2\}_2(H_2O)]$ ", A. Nedelcu, Z. Žak, **A. M. Madalan**, J. Pinkas, M. Andruh, *Polyhedron*, **2003**, 22, 789-794.
23. "The first coordination compound containing three different types of spin carriers: $2p\text{-}3d\text{-}4f$ ($TCNQ^\bullet$, Cu^{2+} , and Gd^{3+})", **A. M. Madalan**, H. W. Roesky, M. Andruh, M. Noltemeyer, N. Stanica, *Chem. Commun.*, **2002**, 1638-1639.
24. " $[Cu(2,2'\text{-bipy})(NCS)_2]$, the missing term in the isostructural $[Cu(AA)(NCS)_2]$ series (AA=aromatic diamines) ", **A. M. Madalan**, V. Kravtsov, Y. A. Simonov, M. Andruh, *Rev. Roum. Chim.*, **2002**, 47, 917-921.
25. "Two Different Copper(II) Complexes in One Single Crystal: $[Cu_2L(\mu\text{-OH})(O_2ClO_2)_2]$ and $[(Cu(acac)(phen)(OCIO_3)]$ (L = bis-2,6-[N-((dimethylamino)ethyl)formimidoyl]phenolato)", **A. M. Madalan**, A. Müller, M. Andruh, M. Schmidtman, *Acta Univ. Cibiniensis, Seria F Chemia*, **2002**, 1, 13-17.
26. "Two different (acetylacetonato)(bipyridine)copper(II) complexes in one single crystal: $[Cu(acac)(bipy)(N_3)]$ and $[Cu(acac)(bipy)(H_2O)]ClO_4$ ", **A. M. Madalan**, M. Andruh, L. Ouahab, S. Golhen, *Rev. Roum. Chim.*, **2001**, 46, 433-437.

Capitol de carte

“Three Are Better Than One: Gathering Three Different Metals in the Same Molecule: a Straightforward Route to 3d-3d'-4f Heterometal Systems”, R. Gheorghe, **A. M. Madalan**, M. Andruh, în *“Experiments in Green and Sustainable Chemistry”*, editori: H.W. Roesky, D. Kennepohl, Wiley-VCH, *în curs de publicare*.