

# Mihai A. GÎRTU

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Google Scholar: <https://scholar.google.ro/citations?user=XVWXGUUAAA&hl=en>

## A. Capitole din monografii:

- „Project-Based Learning Experiences Devised by Combining Backward Educational Design and Design Thinking”  
**Mihai A. Gîrtu** and Daniela D. Căprioară  
in *Higher Education in a Digital Era through Project-based E-learning*, Editori Paulo C. Dias et al., Aletheia - Associação Científica e Cultural, Braga, Portugal, 2023, pp. 99-124 (DOI: 10.17990/Axi/2023\_9789726973676).
- „Room Temperature Molecular Magnets: Modeling and Applications”  
**M.A. Gîrtu** and C.I. Oprea,  
in *Advanced Magnetic and Optical Materials*, Editor H.S. Ashutosh Tiwari et al., Wiley - Scrivener Publishing LLC, Los Angeles, 2017, pp. 185-250 (ISBN 978-1-119-24191-1).
- „Hybrid Organic-Inorganic Nanostructured Magnets”,  
**M.A. Gîrtu** and M. Fahlman,  
in *Magnetic Nanostructures*, Editor H.S. Nalwa, ediția a doua, American Scientific Publishers, Los Angeles, 2009, pp. 359-433 (ISBN-10 1-58883-145-0, ISBN-13 978-1-58883-145-3).
- „Wining Youth for Science and Technology – an Educational Challenge”  
V.M. Pomazan, D. Mihalașcu, L.C. Petcu, **M.A. Gîrtu**  
in *New Achievements in Technology, Education and Development*, Editor S. Soomro, In-Tech, 2010, pp. 33-50 (ISBN 978-953-307-066-7).
- “Hybrid Organic-Inorganic Nanostructured Magnets”,  
**M.A. Gîrtu**  
in *Magnetic Nanostructures*, H.S. Nalwa, edit., American Scientific Publishers, Los Angeles, 2002, pp. 359-405 (ISBN 1-58883-000-4).

## B. Volume editate:

- *Higher Education in a Digital Era through Project-based E-learning*,  
Editori Paulo C. Dias, Ângela Sá Azevedo, Íris Oliveira, Elif Kara, Onur Ergünay, Hacı Mustafa Dönmez, **Mihai A. Gîrtu**, Daniela D. Căprioară  
Aletheia - Associação Científica e Cultural, Braga, Portugal, 2023. (DOI:10.17990/Axi/2023\_9789726973676).
- *Proceedings of the Nano-Sol-Net International Symposium: Trends in Organic Electronics and Hybrid Photovoltaics*, Eforie Nord, Romania, June 12-14, 2008,  
Editori **M.A. Gîrtu** and M. Fahlman, Ovidius University Press, Constanța 2008, (ISBN 978-973-614-414-1).
- *Proceedings of the 9<sup>th</sup> International Balkan Workshop on Applied Physics*, July 7-9, 2008,  
V. Ciupină, H. Alexandru, **M.A. Gîrtu**, guest editors,  
in Journal of Optoelectronics and Advanced Materials vol. 10, no. 11, 2008 (ISSN 1454-4164).
- *Proceedings of the 8<sup>th</sup> International Balkan Workshop on Applied Physics*, July 5-7, 2007,  
V. Ciupină, H. Alexandru, **M.A. Gîrtu**, guest editors,  
in Journal of Optoelectronics and Advanced Materials vol. 10, no. 1, 2008 (ISSN 1454-4164).

- *Proceedings of the 7<sup>th</sup> International Balkan Workshop on Applied Physics, July 5-7, 2006,*  
V. Ciupină, **M.A. Gîrtu**, guest editors,  
in Journal of Optoelectronics and Advanced Materials vol. 9, no. 4, 2007 (ISSN 1454-4164).
  - *Proceedings of the 6<sup>th</sup> International Balkan Workshop on Applied Physics, July 5-7, 2005,*  
V. Ciupină, H. Alexandru, **M.A. Gîrtu**, guest editors,  
in Journal of Optoelectronics and Advanced Materials vol. 8, no. 1, 2006 (ISSN 1454-4164).
- 

### C. Articole publicate în reviste cotate ISI:

1. “An Extracurricular Project-Based Training Course in Innovation and Entrepreneurship Delivered to a Transdisciplinary Group of Students in Engineering, Social Sciences, Arts and Medicine”  
C.O. Sorici, C. Salceanu, R.S. Matei, D.F. Sburlan, A. Țoței, M.A. Gîrtu,  
Educ. Sci. 13, 967 (2023). <https://doi.org/10.3390/educsci13100967>
2. “A combined experimental and computational study of chrysanthemin as a pigment for dye-sensitized solar cells”  
A Ndiaye, A Dioum, CI Oprea, A Dumbrava, J Lungu, A Georgescu, F. Moscalu, M.A. Gîrtu 2, A. Chedikh Beye and I Youm  
Molecules 26, 225 (2021)
3. “Photoexcitation Processes in Oligomethine Cyanine Dyes for Dye-Sensitized Solar Cells-Synthesis and Computational Study ”  
C.I. Oprea, P. Panait, Z.M. Essam, R.M. Abd El-Aal, M.A. Gîrtu  
Nanomaterials 10 662 (2020)
4. “Structure and Electronic Properties of TiO<sub>2</sub> Nanoclusters and Dye-Nanocluster Systems Appropriate to Model Hybrid Photovoltaic or Photocatalytic Applications”  
C.I. Oprea, M.A. Gîrtu  
Nanomaterials 9 357 (2019)
5. “Pulsed Laser Fabrication of TiO<sub>2</sub> Buffer Layers for Dye Sensitized Solar Cells”  
J. Lungu, G. Socol, G.E. Stan, N. Stefan, C. Luculescu, A. Georgescu, G. Popescu-Pelin, G. Prodan, M.A. Girtu, I.N. Mihailescu  
Nanomaterials 9, 746 (2019)
6. “Characterization of spin-coated TiO<sub>2</sub> buffer layer for dye-sensitized solar cells”  
J. Lungu, N. Ștefan, G. Prodan, A. Mandea, V. Ciupină, I.N. Mihailescu, **M.A. Gîrtu**  
Digest Journal of Nanomaterials and Biostructures **10**, 967-976 (2015).
7. „Ab initio study of exchange coupling for the consistent understanding of the magnetic ordering at room temperature in V[TCNE]<sub>x</sub>”  
B. Frecus, C.I. Oprea, P. Panait, M. Ferbinteanu, F. Cimpoesu, **M.A. Gîrtu**  
**Theoretical Chemistry Accounts** **133**, 1470 (2014).
8. „Disorder, exchange and magnetic anisotropy in the room-temperature molecular magnet V[TCNE]<sub>x</sub> – A theoretical study”  
F. Cimpoesu, B. Frecus, C.I. Oprea, P. Panait, **M.A. Gîrtu**  
**Computational Materials Science** **91**, 320 (2014).
9. „DFT study of binding and electron transfer from colorless aromatic pollutants to a TiO<sub>2</sub> nanocluster: Application to photocatalytic degradation under visible light irradiation”  
C.I. Oprea, P. Panait, **M.A. Gîrtu**

- Beilstein Journal of Nanotechnology** **5**, 1016 (2014).
10. „Elementary tight-binding method for simple electronic structure calculations – An educational approach to modeling conjugated dyes for dye-sensitized solar cells”  
**A. Trandafir, A. trandafir, C.I. Oprea, M.A. Gîrtu**  
**Romanian Reports in Physics** **66**, 574 (2014).
11. „DFT study of binding and electron transfer from a metal-free dye with carboxyl, hydroxyl and sulfonic anchors to a titanium dioxide nanocluster”  
**C.I. Oprea, P. Panait, J. Lungu, D. Stamate, A. Dumbravă, F. Cimpoesu, M.A. Gîrtu**  
**International Journal of Photoenergy** 893850 (2013).
12. „DFT Study of Coumarin-based Dyes Adsorbed on TiO<sub>2</sub> Nanoclusters – Applications to Dye-Sensitized Solar Cells”  
**C.I. Oprea, P. Panait, F. Cimpoesu, M. Ferbinteanu, M.A. Gîrtu**  
**Materials** **6**, 2372 (2013).
13. „Comparative computational IR, Raman and phosphorescence study of Ru- and Rh-based complexes”  
**C.I. Oprea, P. Panait, B.F. Minaev, H. Ågren, F. Cimpoesu, M. Ferbinteanu, M.A. Gîrtu**  
**Molecular Physics** **111**, 1526 (2013).
14. „New insights in the bonding regime and ligand field in Wernerian complexes. A density functional study”  
**F. Cimpoesu, A. Zaharia, D. Stamate, P. Panait, C.I. Oprea, M.A. Gîrtu, M. Ferbinteanu**  
**Polyhedron** **52**, 183 (2013).
15. „Spectral calibration of a LED-based solar simulator - a theoretical approach”  
**A. Georgescu, M.A. Gîrtu, V. Ciupina**  
**Journal of Optoelectronics and Advanced Materials** **15**, 31 (2013).
16. „Broken Symmetry DFT Calculations of Exchange Coupling Constants for Manganese-Porphyrin Quasi-One-Dimensional Molecular Magnets”  
**C.I. Oprea, P. Panait, F. Cimpoesu, I. Humelnicu, M. Ferbinteanu, M.A. Gîrtu**  
**Theoretical Chemistry Accounts** **131**, 1249 (2012).
17. „A combined experimental and theoretical study of natural betalain pigments used in dye-sensitized solar cells”  
**C.I. Oprea, A. Dumbravă, I. Enache, A. Georgescu, M.A. Gîrtu**  
**J. Photochem. Photobio. A** **240**, 5 (2012).
18. „Structure and Magnetism in Fe-Gd Based Dinuclear and Chain Systems. The Interplay of Weak Exchange Coupling and Zero Field Splitting Effects”  
**M. Ferbinteanu, F. Cimpoesu, M.A. Gîrtu, C. Enachescu, and S. Tanase**  
**Inorganic Chemistry** **51**, 40 (2012).
19. „Towards a more efficient utilization of betalains as pigments for dye-sensitized solar cells”  
**A. Dumbravă, I. Enache, C.I. Oprea, A. Georgescu, M.A. Gîrtu**  
**Digest J. Nanomater. Biostruct** **7**, 339 (2012).
20. „DFT Study of Electronic Structure and Optical Properties of Some Ru- and Rh-Based Complexes for Dye-Sensitized Solar Cells”  
**C.I. Oprea, B. Frecuș, B.F. Minaev, and M.A. Gîrtu\***  
**Molecular Physics** **109**, 2511 (2011).
21. “DFT Study of Structure-Properties Correlations in [MnTPP][TCNE] Quasi One-Dimensional Molecular Magnets”

- C.I. Oprea, F. Cimpoesu, P. Panait, B. Frecuș, M. Ferbinteanu and **M.A. Gîrțu\***  
**Theor. Chem. Acc.** **129**, 847 (2011).
22. "Role of energy level alignment in solar cells sensitized with a metal-free organic dye: A combined experimental and theoretical approach"  
C.I. Oprea, A. Dumbrava, I. Enache, J. Lungu, A. Georgescu, F. Moscalu, C. Oprea, and **M.A. Gîrțu\***  
**Phys. Status Solidi A** **208**, 2467 (2011).
23. „IR, Raman and UV-vis spectra of the Ru(II) cyano complexes studied by DFT”  
B. Minaev, V. Minaeva, G. Baryshnikov, **M.A. Gîrțu**, and H. Ågren  
**Molecular Simulation** **37**, 670 (2011).
24. „DFT Study of the Optical and Vibration Spectra of a Series of Plantinum-Olefin Complexes”  
C.I. Oprea, F. Moscalu, A. Dumbrava, S. Ioannou, A. Nicolaides and **M.A. Gîrțu\***  
**Romanian Journ. Phys.** **55**, 125 (2011).
25. „Noncovalent effects in the coordination and assembling of the[Fe(bPCA)<sub>2</sub>][Er(NO<sub>3</sub>)<sub>3</sub>(H<sub>2</sub>O)<sub>4</sub>]NO<sub>3</sub> system”  
M. Ferbinteanu, A. Zaharia, **M.A. Gîrțu**, and F. Cimpoesu  
**Cent. Eur. J. Chem.** **8**, 519 (2010).
26. „Heterocyclic azodyes as pigments for dye sensitized solar cells – A combined experimental and theoretical study”  
J. Lungu, C.I. Oprea, A. Dumbravă, I. Enache, A. Georgescu, C. Rădulescu, I. Ioniță G.V. Cimpoca, **M. A. Gîrțu\***  
**J. Optoelectr. Adv. Mater.** **12**, 1969 (2010).
27. „The DFT rationalization of exchange and anisotropy in one-dimensional d-p magnets. The [Mn<sup>III</sup>(porphyrin)][TCNE] case study.”  
F. Cimpoesu, M. Ferbinteanu, B. Frecuș, and **M.A. Gîrțu\***  
**Polyhedron** **28**, 2039 (2009)
28. „Theoretical Study of Vibration Spectra of Sensitizing Dyes for Photoelectrical Converters Based on Ruthenium(II) and Iridium(III) Complexes”  
B.F. Minaev, V.A. Minaeva, G.V. Baryshnikov, **M.A. Gîrțu**, and H. Ågren  
**Russian Journal of Applied Chemistry** **82**, 1211 (2009)
29. „DFT Study of Electronic Properties, Structure and Spectra of Aryl Diazonium Cations”  
B.F. Minaev, S.V. Bondarchuk, **M.A. Gîrțu\***  
**J. Mol. Struct. (Theochem)** **904**, 14 (2009)
30. „Optical and Infrared Properties of a Series of Pyramidalized Olefin Pt-Complexes - DFT Study”  
C.I. Oprea, F. Moscalu, A. Dumbrava, S. Ioannou, A. Nicolaides and **M.A. Gîrțu\***  
**J. Optoelectr. Adv. Mater.** **11**, 1773 (2009).
31. „Synthesis and characterization of nanocrystalline  $\gamma$ -Y<sub>2</sub>SiO<sub>7</sub> powder”  
I. Carazeanu Popovici, V. Ciupină, G. Prodan, **M.A. Gîrțu\***  
**Metalurgia International** **14**, 25 (2009)
32. “Class A small area solar simulator for dye-sensitized solar cell testing”  
A. Georgescu, G. Damache, **M.A. Gîrțu\***  
**J. Optoelectr. Adv. Mater.** **10**, 3003 (2008).

33. „Dye-sensitized solar cells based on nanocrystalline TiO<sub>2</sub> and natural pigments”  
 A. Dumbravă, A. Georgescu, G. Damache, C. Badea, I. Enache, C. Oprea, **M.A. Gîrtu\***  
**J. Optoelectr. Adv. Mater.** **10**, 2996 (2008).
34. „Structural characterisation of lanthanum aluminate synthetized by the Pechini method”  
 I. Carazeanu Popovici, V. Ciupina, G. Prodan, **M.A. Gîrtu\***  
**J. Optoelectr. Adv. Mater.** **10**, 2942 (2008).
35. „The analytical control of some photocromic materials”  
 I. Ioniță, A.-M. Albu, C. Rădulescu, E. I. Moater, G.V. Cimpoca, **M.A. Gîrtu\***  
**J. Optoelectr. Adv. Mater.** **10**, 2864 (2008).
36. „HRTEM Study of nano-TiO<sub>2</sub> powder”  
 I. Carazeanu Popovici, **M.A. Gîrtu**, E. Chirilă V. Ciupină, G. Prodan  
**Revista de Chimie** **59**, 413 (2008)
37. “Theoretical study of neutral and reduced hexacyanobutadiene”  
 C.I. Oprea, A. Damian, and **M.A. Gîrtu\***  
**J. Mol. Struct. (Theochem)** **804**, 111 (2007)
38. „Nanostructured Hybrid Organic-Inorganic Magnets – New Materials and New Potential Applications”  
**M.A. Gîrtu**  
**Revue Roumaine de Sciences Techniques - Série Électrotechnique et Énergétique** **52**, 131-142, (2007).
39. “Study on Poly(3,4-ethylene dioxythiophene)-Poly(styrenesulfonate) as a plastic counter electrode in dye sensitized solar cells”  
 A. Kanciurzewska, E. Dobruchowska, A. Baranzahi, E. Carlegrim, M. Fahlman, and **M.A. Gîrtu\***  
**J. Optoelectr. Adv. Mater.** **9**, 1052 (2007).
40. “Molecular dynamics simulation of defect formation in irradiated Cu”  
 D. Șopu, D.M. Popovici, and **M.A. Gîrtu\***  
**J. Optoelectr. Adv. Mater.** **9**, 799 (2007).
41. ”Spin density calculations for two electron-acceptor constituents of molecular magnets: tetracyanoethylene and hexacyanobutadiene”  
 C.I. Oprea, A. Damian, **M.A. Gîrtu\***  
**J. Optoelectr. and Adv. Mat.** **8**, 191 (2006).
42. ”Cole-Cole analysis of the ac magnetic susceptibility of some layered hybrid organic-inorganic magnets”  
**M.A. Gîrtu**  
**J. Optoelectr. and Adv. Mat.** **5**, 991 (2003).
43. ”Cole-Cole analysis of the dynamic susceptibility of a quasi-one-dimensional Mn(porphyrin)-based hybrid organic-inorganic magnet”  
**M.A. Gîrtu**  
**J. Optoelectr. and Adv. Mat.** **4**, 85 (2002).
44. ”Magnetic behaviour of a 3-dimensional hybrid organic/inorganic magnet”

**M.A. Gîrtu,**  
**J. Optoelectr. and Adv. Mat. **3**, 113 (2001)**

45. "Glassiness and canted antiferromagnetism in three geometrically frustrated triangular quantum Heisenberg antiferromagnets with weak Dzyaloshinskii-Moriya interaction",  
**M.A. Gîrtu, C.M. Wynn, W. Fujita, K. Awaga and A.J. Epstein,**  
**Phys. Rev. B **61**, 4117 (2000).**
46. "Magnetic properties and critical behavior of  $\text{Fe}(\text{TCNE})_x \text{y}(\text{CH}_2\text{Cl}_2)$ , a high  $T_c$  molecule-based magnet",  
**M.A. Gîrtu, C.M. Wynn, J. Zhang, J.S. Miller and A.J. Epstein,**  
**Phys. Rev. B **61**, 429 (2000).**
47. "Coexistence of glassiness and canted antiferromagnetism in triangular quantum Heisenberg antiferromagnets with weak Dzyaloshinskii-Moriya interaction",  
**M.A. Gîrtu, C.M. Wynn, W. Fujita, K. Awaga and A.J. Epstein,**  
**Phys. Rev. B **57**, R11058 (1998).**
48. "Reentrance in the  $\text{Mn}(\text{tetracyanoethylene})_x \text{y}(\text{CH}_2\text{Cl}_2)$  high- $T_c$  molecule-based ferrimagnet",  
**C.M. Wynn, M.A. Gîrtu, J. Zhang, J.S. Miller and A.J. Epstein,**  
**Phys. Rev. B **58**, 8508 (1998).**
49. "Lattice and spin-dimensionality crossovers in a linear-chain molecule-based ferrimagnet with weak spin anisotropy",  
**C.M. Wynn, M.A. Gîrtu, J.S. Miller and A.J. Epstein,**  
**Phys. Rev. B **56**, 315 (1997).**
50. "Magnetic phase diagram of a molecule-based ferrimagnet: Weak ferromagnetism and multiple dimensionality crossovers",  
**C.M. Wynn, M.A. Gîrtu, J.S. Miller and A.J. Epstein,**  
**Phys. Rev. B. **56**, 14050 (1997).**
51. "Canted antiferromagnetic and spin glass-like behavior in a family of two-dimensional organic/inorganic nanocomposites",  
**M.A. Gîrtu, C.M. Wynn, W. Fujita, K. Awaga, and A.J. Epstein,**  
**J. Appl. Phys. **83**, 7378 (1998).**
52. "Effect of disorder on the linear and nonlinear magnetic susceptibilities of two manganese-porphyrin-based magnets",  
**M.A. Gîrtu, C.M. Wynn, K-I. Sugiura, J.S. Miller and A.J. Epstein,**  
**J. Appl. Phys. **81**, 4410 (1997).**
53. "The influence of disorder on the magnetic phenomena in metalloporphyrin-based magnets",  
**M.A. Gîrtu, C.M. Wynn, K-I. Sugiura, J.S. Miller and A.J. Epstein,**  
**Synth. Met. **85**, 1703 (1997).**
54. "Long-range magnetic order in the quasi-1D metalloporphyrin family of molecule-based magnets",  
**C.M. Wynn, M.A. Gîrtu, K-I. Sugiura, E.J. Brandon, J.L. Manson, J.S. Miller and A.J. Epstein,**  
**Synth. Met. **85**, 1695 (1997).**

55. "Magnetic order and disorder in a family of layered organic/inorganic nanocomposites",  
**M.A. Gîrtu**, C.M. Wynn, W. Fujita, K. Awaga and A.J. Epstein,  
**Molec. Cryst. Liq. Cryst.** **334**, 703 (1999).
56. "New high T<sub>c</sub> molecule-based magnet - Magnetic behavior of M(TCNE)<sub>2</sub> x(CH<sub>2</sub>Cl<sub>2</sub>) (M = Mn, Fe),"  
**M.A. Gîrtu**, C.M. Wynn, C.R. Kmety, J. Zhang, J.S. Miller and A.J. Epstein,  
**Molec. Cryst. Liq. Cryst.** **334**, 539 (1999).
57. "Magnetic ground state and its control in porphyrin-based magnets",  
A.J. Epstein, C.M. Wynn, **M.A. Gîrtu**, W.B. Brinckerhoff, K-I. Sugiura and J.S. Miller,  
**Molec. Cryst. Liq. Cryst.** **305**, 321 (1997).
58. "Reversed (negative) magnetization for electrochemically deposited high-T<sub>c</sub> thin films of chromium hexacyanide magnets",  
W.E Buschmann, S.C. Paulson, C.M. Wynn, **M.A. Gîrtu**, A.J. Epstein, H.S. White and J.S. Miller,  
**Chem. Mater.** **10**, 1386 (1998).
59. "Magnetic dipole-dipole interactions and single-ion anisotropy: Revisiting a classical approach to magnets",  
C.M. Wynn, **M.A. Gîrtu**, W.B. Brinckerhoff, K-I. Sugiura, J.S. Miller and A.J. Epstein,  
**Chem. Mater.** **9**, 2156 (1997).
60. "Magnetic field induced reversed (negative) magnetization for electrochemically-deposited 260 K T<sub>c</sub> oxidized films of chromium cyanide magnets",  
W.E Buschmann, S.C. Paulson, C.M. Wynn, **M.A. Gîrtu**, A.J. Epstein, H.S. White and J.S. Miller,  
**Adv. Mat.** **9**, 645 (1997).

#### D. Articole publicate în reviste necotate ISI:

1. "Quantum chemical calculations of three electron-acceptor molecules: TCNE, TCNQ and HCBD"  
C.I. Oprea, I. I. Carazeanu Popovici, **M.A. Gîrtu**,  
Bulletin of the Transilvania University of Brasov (BRAMAT) **4**, 409-414 (2007)
2. „Sol-gel synthesis and characterization of lithium metatitanate, Li<sub>2</sub>TiO<sub>3</sub>,  
I. Carazeanu Popovici, **M.A. Gîrtu**, E. Chirila, V. Popescu, V. Ciupina, G. Prodan  
Bulletin of the Transilvania University of Brasov (BRAMAT) **4**, 187-192 (2007)
3. "Modeling of multichannel viscous flow",  
B. Nicolescu, E. Mamut, **M.A. Gîrtu**  
**Romanian Journ. Phys.** **50**, 939 (2005).
4. "Metastability and disorder in magnanese-porphyrin based hybrid organic-inorganic magnets",  
**M.A. Gîrtu**  
**Romanian Journ. Phys.** **49**, 299 (2004).
5. "The virtual center for the development of communication and information field in the engineering society",  
V. Ciupina, C. Petrescu, G. Stefanescu, M.A. Della Giacomo, **M.A. Gîrtu**  
**Romanian Journ. Phys.** **49**, 403-407 (2004).
6. "High-resolution transmission electron microscopy study of calcium phosphate apatites",

- I. Carazeanu, V. Ciupina, **M.A. Gîrțu**, G. Prodan  
**Romanian Journ. Phys.** **49**, 445-454 (2004).
7. "Magnetic ordering in thin films of chromium hexacyanide magnets",  
**M.A. Gîrțu**  
**Romanian Journ. Phys.** **48**, 161 (2003).
8. "Magnetic ordering in a family of 3-dimensional hybrid organic-inorganic magnets"  
**M.A. Gîrțu**  
**Bulgarian J. Phys.** **27**, 13 (2000).
9. "Static scaling in molecular magnetism"  
**M.A. Gîrțu**,  
**Ovidius Univ. Ann. Phys.**, **4**, 31 (2003).
10. "Dynamic scaling in molecular magnetism"  
**M.A. Gîrțu**,  
**Ovidius Univ. Ann. Phys.**, **3**, 45 (2002).
11. "High-temperature one-dimensional ferrimagnetic behavior in manganeseporphyrin-based hybrid organic-inorganic compounds"  
**M.A. Gîrțu**,  
**Ovidius Univ. Ann. Phys.**, **2**, 43 (2001).
12. "Probing reentrance in a spin glass-like molecular magnet using nonlinear ac magnetic susceptibility measurements"  
**M.A. Gîrțu**,  
**Ovidius Univ. Ann. Phys.**, **1**, 27 (2000).
- 

**E. Articole publicate in extenso în volume indexate ISI:**

1. "DFT Calculations of Structure and Optical Properties in Wide Band-Gap Semiconductor Clusters for Dye-Sensitized Solar Cells"  
C.I. Oprea, P. Panait, E.M. AbdelAal, **M.A. Gîrțu**,  
IEEE Proceedings International Semiconductor Conference (CAS) 8539813 pp 17-26, 2018.
2. "Electron transfer and dye regeneration in Dye-Sensitized Solar Cells"  
C.I. Oprea, A. Ndiaye, Atoumane; A. Trandafir, **M.A. Gîrțu**  
IEEE Proceedings International Semiconductor Conference (CAS) 8539783 pp 273-276, 2018.
3. „DFT Study of Binding and Electron Transfer from Penicillin to a TiO<sub>2</sub> Nanocluster: Applications to Photocatalytic Degradation”  
C.I. Oprea, L.C. Petcu, **M.A. Gîrțu**  
IEEE Proceedings *E-Health and Bioengineering Conference* (EHB) 7391481, pp. 1-4, 2015
4. „DFT Calculations of IR and Raman Spectra of Ru(bpy)<sub>2</sub>(CN)<sub>2</sub> Complex”  
B.F. Minaev B, V. Minaeva, G. Baryshnikov, H. Agren, **M.A. Gîrțu**  
Clean Technology 2009 Conference and Expo, MAY 03-07, 2009 Houston, TX, Technical proceedings:  
Bioenergy, Renewables, Storage, Grid, Waste and Sustainability 51 (2009).
5. „DFT Study of Optical Properties of Pt-based Complexes”,  
Corneliu I. Oprea, Anca Dumbravă, Florin Moscalu, Athanassios Nicolaides, and Mihai A. Gîrțu,  
Conference Proceedings - *7th International Conference of the Balkan Physical Union*, edited by A. Angelopoulos and T. Fildisis, **AIP Conference Proceedings** **1203**, 1198 (2009).

6. „Theoretical Calculations of Structure and Exchange Coupling of a Room-Temperature Molecular Magnet”  
Fănică Cimpoesu, Bogdan Frecuș, Corneliu I. Oprea and **Mihai A. Gîrțu**  
Conference Proceedings - *7th International Conference of the Balkan Physical Union*, edited by A. Angelopoulos and T. Fildisis, **AIP Conference Proceedings 1203**, 1192 (2009).
  
  7. „Enrolling in Science and Engineering Academic Programs – Motivating and Deterring Factors”  
Valentina Pomazan, Doina Mihalașcu, Lucian C. Petcu, and **Mihai A. Gîrțu**  
Conference Proceedings - *7th International Conference of the Balkan Physical Union*, edited by A. Angelopoulos and T. Fildisis, **AIP Conference Proceedings 1203**, 1372 (2009).
  
  8. "Dye sensitized solar cells with a plastic counter electrode of poly(3,4-ethylene dioxythiophene)-poly(styrenesulfonate),"  
A. Kanciurzewska, E. Dobruchowska, A. Baranzahi, E. Carlegrim, A. Fahlman, M. Fahlman, **M.A. Gîrțu**,  
Organic Photovoltaics VIII, edited by Z.H. Kafafi and P.A. Lane, **Proceedings of SPIE 6656**, 665611 (2007).
  
  9. „Dye-Sensitized Solar Cells with nanocrystalline TiO<sub>2</sub>”  
Ana Fahlman, A. Baranzahi, M. Fahlman, A. Damian, **M.A. Gîrțu**  
Conference Proceedings 899 - *Sixth International Conference of the Balkan Physical Union*, edited by S. A. Cetin and I. Hikmet, **AIP Conference Proceedings 899**, 757 (2007).
  
  10. “DFT Calculations of a Metal-TCNE Complex”  
Corneliu I. Oprea, Alina Damian, and **Mihai A. Gîrțu**,  
Conference Proceedings 899 - *Sixth International Conference of the Balkan Physical Union*, edited by S. A. Cetin and I. Hikmet, **AIP Conference Proceedings 899**, 716 (2007)
  
  11. “Molecular Dynamics Simulations of the Time Evolution of Irradiation Induced Defects”  
Daniel Șopu and **Mihai A. Gîrțu**  
Conference Proceedings 899 - *Sixth International Conference of the Balkan Physical Union*, edited by S. A. Cetin and I. Hikmet, **AIP Conference Proceedings 899**, 717 (2007).
- 

#### F. Articole publicate in extenso în volume neindexate:

1. Development of a platform to promote Project-based learning inn higher education: Contributions of the RESTART4EDU Project.  
Dias, P. C. Oliveira, I. M., Azevedo, A. S., Kara, E., Mustafa, H., Ergunay, O., Gîrțu, M., & Caprioară, D. (2022). In L. G. Chova, A. L. Martínez, & J. Lees. (Eds.), *Proceedings of ICERI22 Conference* (pp. 8086-8091). IATED Academy. <https://doi.org/10.21125/iceri.2022.2077>
  
2. Project-based learning in higher education: Needs and expectations from Romanian, Portuguese, and Turkish teachers.  
Oliveira, I. M., Dias, P. C., Azevedo, A. S., Kara, E., Mustafa, H., Ergunay, O., Gîrțu, M., & Caprioara, D. (2022). In L. G. Chova, A. L. Martínez, & J. Lees (Eds.), *Proceedings of ICERI22 Conference* (pp. 8074-8079). IATED Academy. <https://doi.org/10.21125/iceri.2022.2072>
  
3. “Ab initio study of electron acceptor molecules for organic electronics and molecular magnetism”

- C.I. Oprea, B. Frecuș, F. Moscalu and **M.A. Gîrtu**  
*Proceedings of the Nano-Sol-Net International Symposium “Trends in Organic Electronics and Hybrid Photovoltaics,”* M.A. Gîrtu and M. Fahlman, eds., Ovidius University Press, Constanța, Romania, 2008, pp. 69-75, (ISBN 978-973-614-414-1).
4. “Synthesis of nanosized TiO<sub>2</sub> powders at low temperature”  
 I. Carazeanu Popovici, V. Ciupină, G. Prodan and **M.A. Gîrtu**,  
*Proceedings of the Nano-Sol-Net International Symposium “Trends in Organic Electronics and Hybrid Photovoltaics,”* M.A. Gîrtu and M. Fahlman, eds., Ovidius University Press, Constanța, Romania, 2008, pp. 159-164, (ISBN 978-973-614-414-1).
5. “Homemade class A small area solar simulator for dye sensitized solar cell testing”  
 A. Georgescu, G. Damache, and **M.A. Gîrtu**,  
*Proceedings of the Nano-Sol-Net International Symposium “Trends in Organic Electronics and Hybrid Photovoltaics,”* M.A. Gîrtu and M. Fahlman, eds., Ovidius University Press, Constanța, Romania, 2008, pp. 165-170, (ISBN 978-973-614-414-1).
6. “Natural extracts as pigments for dye sensitized solar cells”  
 A Dumbravă, C. Badea, A. Georgescu, G. Damache, C. Oprea and **M.A. Gîrtu**,  
*Proceedings of the Nano-Sol-Net International Symposium “Trends in Organic Electronics and Hybrid Photovoltaics,”* M.A. Gîrtu and M. Fahlman, eds., Ovidius University Press, Constanța, Romania, 2008, pp. 171-177, (ISBN 978-973-614-414-1).
7. „Poly(3,4-ethylene dioxythiophene)-poly(styrenesulfonate) as a plastic counter electrode in TiO<sub>2</sub> dye sensitized solar cells,”  
 A. Kanciurzewska, E. Dobruchowska, A. Baranzahi, E. Carlegrim, A. Fahlman, M. Fahlman, C. Oprea, I. Carazeanu-Popovici, A. Dumbravă, **M.A. Gîrtu**,  
 in Proceedings of the 22nd European Photovoltaic Solar Energy Conference, Milan, Italy, 3-7 september 2007, edited by G. Willeke, H. Ossenbrik, P. Helm, WIP-Renewable Energies, Germany, 2007, pp.651-654 (ISBN 3-936338-22-1).
8. “Density functional theory calculations of electron affinities and spin densities of two electron-acceptor molecules”  
 A. Damian, C.I. Oprea, and **M.A. Gîrtu**  
 “Convergence of micro-nano-biotechnologies” in seria “Micro and Nanoengineering,” Ed. Academiei, Bucuresti, 2007, pp. 9-15, ISBN (10) 973-27-1422-0 si ISBN (13) 978-973-27-1422-5
9. “Molecular dynamics simulations of defect formation in irradiated solids”  
 D. Șopu and **M.A. Gîrtu**  
 “Convergence of micro-nano-biotechnologies” in seria “Micro and Nanoengineering,” Ed. Academiei, Bucuresti, 2007, pp. 50-58, ISBN (10) 973-27-1422-0 si ISBN (13) 978-973-27-1422-5.
10. *Molecular dynamics simulation of defect formation in irradiated Ni*  
 D. Șopu, **M.A. Gîrtu**  
 in Proc. 5th Workshop on Mathematical Modeling of Environmental and Life Sciences Problems Constanta, Romania, Ed. S. Ion, G. Marinoschi si C. Popa, Editura Academiei, 2008, pp. 201-210 (ISBN 978-973-27-1641-0)
11. “Model for molecular dynamic simulation of the radiation-induced defect formation in metals irradiated with low energy ions”,  
 D. Șopu, B. Nicolescu, **M.A. Gîrtu**,  
 in Proc. 4th Workshop on Mathematical Modeling of Environmental and Life Sciences Problems Constanta, Romania, Ed. S. Ion, G. Marinoschi si C. Popa, Editura Academiei, 2006, pp. 243-253 (ISBN (10) 973-27-1358-5; ISBN (12) 978-973-27-1358-7)
12. „Molecular dynamics simulation for the determination of the phase diagram of noble gas systems”  
 D. Șopu, **M.A. Gîrtu**  
 Proceeding of the 3rd International Colloquium „Mathematics in Engineering and Numerical Physics,” Bucharest, Romania, 07 – 09 October 2004, 2006, pp. 184-187 .

- 13.** „Computer Simulations of the Energy Spectra of some Conjugated Polymers”  
 A. Damian, **M.A. Gîrtu**  
 Proceeding of the 3rd International Colloquium „Mathematics in Engineering and Numerical Physics,” Bucharest, Romania, 07 – 09 October 2004, 2006, pp. 196-199.
- 14.** „Computer Simulations of the Energy Spectrum of some Organic Planar Molecules”  
 E. Stroila, A. Damian, **M.A. Gîrtu**  
 Proceeding of the 3rd International Colloquium „Mathematics in Engineering and Numerical Physics,” Bucharest, Romania, 07 – 09 October 2004, 2006, pp. 180-183.
- 15.** „Hybrid organic–inorganic magnets”  
**M.A. Gîrtu**  
 Proceedings of the International Scientific Conference UNITECH’02, Technical University of Gabrovo, 2002, pp. 680-684 (ISBN 954-683-167-0).
- 16.** “Photoluminescence analysis of  $\text{Ga}_{1-x}\text{Al}_x\text{As}/\text{GaAs}$  layers grown by LPE”,  
 R. Dima, A. Iova, **M.A. Gîrtu**, M. Buda,  
 in Proc. 15th Annual Semic. Conf., Oct. 1992, Sinaia, Romania, pp. 467-470.
- 17.** “Submicron layers of  $\text{Ga}_{1-x}\text{Al}_x\text{As}/\text{GaAs}$  grown by liquid phase epitaxy”,  
 I.B. Petrescu-Prahova, M. Buda, **M.A. Gîrtu**,  
 in Proc. 14th Annual Semic. Conf., Oct. 1991, Sinaia, Romania, pp. 335-338.
- 18.** “GaAs etching in dilute solutions of Al in Ga”,  
 M. Buda, C. Cotirlan, **M.A. Gîrtu**, I.B. Petrescu-Prahova,  
 in Proc. 14th Annual Semic. Conf., Oct. 1991, Sinaia, Romania, pp. 339-342.

**G. Cărți**

- *Optica*, **M.A. Gîrtu**, Ovidius University Press, Constanta, 2003 (ISBN 973-614-060-1)
- *Optica – Îndrumar de laborator*, **M.A. Gîrtu** și C.I. Oprea, Ovidius University Press, Constanta, 2008 (ISBN 978-973-614-413-4).
- *Lucrări practice de Fizică farmaceutică*, A.Petcu. L.C. Petcu, **M.A. Gîrtu**, M. Vasile, Ovidius University Press, Constanta, 2015 (ISBN:978-973-614-847-7).
  
- *Fizica 2000 – Teste pentru concursul de admitere la Facultatea de Medicină*, colectiv de autori, Ovidius University Press, Constanța, 2000 (ISBN 973-9367-89-5).
- *Fizica 1999 – Teste pentru concursul de admitere la Facultatea de Medicină*, colectiv de autori, Ovidius University Press, Constanța, 1999 (ISBN 973-9289-59-2).

**I. Teza de doctorat:**

- *Magnetic Ordering in Hybrid Organic/Inorganic Nanocomposites - Magnets by Design*,  
**M.A. Gîrtu**, Ohio State University, Columbus, OH, SUA, 1998.

#### A. Lucrări invitate la conferințe internaționale

1. „Recent efforts to encourage the use of active teaching and learning methods at Ovidius University of Constanța”, Mihai GÎRTU, Restart for Education in a Digital Era through Project based E learning, Erasmus+ project 2020-1-RO01-KA226-HE-095772 - Restart4EDU Final Conference, Constanța, April 27 28, 2023.
2. „A transdisciplinary project-based learning approach: Setting the ground for the launch of the Ovidius University Center for Innovation and Technology Transfer”, Mihai A. Gîrtu, Daniela D. Căprioară and Maria-Elena Muscan, EUA 2020 European Learning & Teaching Forum, Balancing tradition and change, Utrecht University, Netherlands, 13-14 February 2020.
3. „Heteroleptic Co(II) complexes as electrolytes for dye-sensitized solar cells. Electron transfer, dye regeneration and control of the open-circuit voltage.”, 2nd World Congress on Materials Science, Polymer Engineering & Microtechnologies, Abu Dhabi, UAE, November 28-30, 2016.
4. „Electron transfer and dye regeneration from new Co(II) complexes as electrolytes for dye-sensitized solar cells” 10<sup>th</sup> International Conference on Physics of Advanced Materials - ICPAM-10, Iași, Romania, Sept. 22-28, 2014
5. „Fine-tunning of the Open-Circuit Votlatge in Dye-Sensitized Solar Cells – A Combined Computational and Experimental Approach”, TIM2013 Physics Conference, Universitatea de Vest din Timișoara, România, 22-24 Noiembrie 2013.
6. „Computational Study of Exchange and Anisotropy in Room-Temperature Molecular Magnets”, 7<sup>th</sup> International Conference Materials Science and Condensed Matter Physics, Chisinau, Rep. Moldova, September 16-19, 2014.
7. „DFT Study of Molecular Adsorption and Electron Transfer to Tiatania Nanoclusters – Applications to Dye-Sensitized Solar Cells”, Spin Chemistry and Beyond, Royal Institute of Techonolgy, Stockholm, Suedia, 20-21 Septembrie 2013.
8. „Molecular Adsorption and Electron Transfer to TiO<sub>2</sub> in Dye-Sensitized Solar Cells”, New Trends in Nanophysics and Solar Energy Conversion, Magurele-București, Romania, 23-25 Septembrie 2013.
9. „DFT Study of Molecular Adsorption on TiO<sub>2</sub>. Applications to Energy Level Alignment and Electron Transfer in Dye-Sensitized Solar Cells”, 2<sup>nd</sup> Advanced Materials Science Networking Workshop (AMASING) *New Materials, Cleaner Water*, Danang, Vietnam, 18-23 Martie 2013.
10. „Thin-Films of Hybrid Organic-Inorganic Nanostructured Materials – A Combined Computational and Experimental Approach”, 7th International Conference on Advanced Materials, ROCAM 2012, Brașov, Romania, 28-31 August 2012.
11. „Dye-Sensitized Solar Cells – A combined experimental and theoretical approach”, AMASING workshop on Applications of Nanotechnology in Modern Energy Concepts, Technical University of Dresden, Dresden, Germany, 4-9 June 2012.
12. „Dye-Sensitized Solar Cells – A combined experimental and theoretical approach”, Advanced workshop on solar energy conversion, Bucharest, Romania, 21-23 May 2012.
13. „Renewable energy Sources – The case for third generation photovoltaics”, 6th International Student Conference of the Balkan Physical Union, Bodrum, Turkey, 21-24 August 2008.
14. „Molecular Dynamics Simulations of Nanofluid Flow in Microchannels – Boundary Conditions” 5th International Balkan Workshop on Applied Physics,” Constanța, Romania, 05 – 07 July. 2004
15. „Relaxation and Critical Dynamics in Systems with Disorder: Meeting of the IEEE Magnetic Society Chapter of the Romania Section, Iasi, Romania, June 11-12, 2004
16. „Disorder in Organic-Inorganic Nanostructured Magnets” (S1-L15) 4th International Balkan Workshop on Applied Physics,” Constanța, Romania, 25 – 27 Sept. 2003

17. „Organic-Inorganic nanostructured Magnets- Perspectives and Applications,” International Summer School on „Computational Modeling of Combustion and Multiphase Flows in Energy Systems, Neptun, Romania, 21 – 26 Iulie 2003
  18. „Organic Magnetic Materials” Spring School on the Science and Applications of Conjugated Polymers and Related Materials, Sienna, Italia, 25 – 30 Mai 2003
  19. „Magnetic Molecules & Molecule-Based Magnets”, CAMM Spring School: An Introduction to Molecular Electronics Materials, Linkoping, Suedia, 22-24 Mai 2002
  20. „Coexistence of glassiness and canted antiferromagnetism in triangular quantum Heisenberg antiferromagnets with weak Dzyaloshinskii-Moriya interaction” (O2-01), March Meeting of the American Physical Society, Los Angeles, CA, March 16-20, 1998.
- 

**B. Seminarii științifice susținute la universități din străinătate**

1. “Exchange and anisotropy in molecule-based magnets with tetracyanoethylene building blocks” Department of Theoretical Chemistry, **Royal Institute of Technology**, Stockholm, Suedia, 21 August 2013
2. “Dye-Sensitized Solar Cells – A combined Computational and Experimental Approach” Department of Chemistry, **Nanjing University of Posts and Telecommunications**, Nanjing, China, 01 November 2012
3. “Third generation photovoltaics - Hybrid organic-inorganic solar cells” Department of Chemistry, **University of Cyprus**, Nicosia, Cipru, 29 October 2008
4. “High Tc hybrid organic-inorganic magnets” prezentat la Department of Physics and Measurement Technology (IFM), **Linkoping University, Linkoping, Sweden**, 15 April 2004.
5. “Organic and Hybrid organic-inorganic magnets,” prezentat Department of Science and Technology (ITN), **Linkoping University, Norrkoping campus, Norrkoping, Sweden**, 14 April 2004.
6. “Magnetic Molecules & Molecule-based Magnets,” prezentat la Department of Physics and Measurement Technology (IFM), in cadrul cursului CAMM, **Linkoping University, Linkoping, Sweden**, 24 May 2002
7. “Hybrid organic-inorganic magnets – Magnets by design,” prezentat la Department of Physics and Measurement Technology (IFM), **Linkoping University, Linkoping, Sweden**, 6 September 2001.
8. “Hybrid organic-inorganic magnets – Magnets by design,” prezentat Department of Science and Technology (ITN), **Linkoping University, Norrkoping campus, Norrkoping, Sweden**, 5 September 2001.
9. “Magnetic properties of hybrid organic-inorganic magnets,” prezentat la Department of Physics, **Comenius University, Bratislava**, Slovacia 3 May 2000.
10. “Coexistence of disorder-free glassiness and canted antiferromagnetism in triangular quantum Heisenberg antiferromagnets”, prezentat la Department of Physics, **The Ohio State University, SUA**, 14 July 1997.