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H=25 (Scopus 1850 citations Feb. 2022)

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Principal Areas of research and expertise

The research interests of Ass. Prof. Mihaela Girtan cover several aspects of thin films, physical and chemical deposition methods, solar cell technology and optoelectronic devices, including charge transport in oxides and conducting polymers, electrical conductivity and photoconductivity measurements, organic and hybrid solar cells, organic transistors, transparent conducting thin films, structural, morphological, electrical and optical properties of thin films, plasmonics, transport phenomena in low dimensional structures, heat transfer phenomena and fluid dynamics numerical simulations.

Education

- 2009 - Habilitation in Thin films for solar cells and plastic electronics. Devices, Angers University
- 2003-2004 - Postdoctoral Research Fellow, LPMI, ENSAM Engineering School, Angers
- 2001 - Postdoctoral Research Fellow (six month) LPLE, CNRS, Pierre and Marie Curie University, Paris VI
- 2000 - Ph.D. Condensed Matter Physics "Al.I.Cuza" University of Iasi

Employment and professional experience

- Since 2005 - Associate Professor at Angers University, France
- Since 2006 - Head of the group "Thin films for photovoltaic applications"
- 2020-2021 - Mc Member COST INNOVATORS' GRANT ITHACA
- 2018-2021 - Substitute Mc Member COST PEARLE PV
- 2017-2020 - Mc Member COST CRM-Extreme
- 2004-2005 - Temporally Attached Professor at ENSAM Engineering School, Angers, France
- 1995-2005 - Assistant Professor then Lecturer at "Al.I.Cuza" University of Iasi, Romania

Awards: Outstanding Reviewer for Thin Solid Films

Best Oral presentation, International Conference "Moderns Technologies", 2019
PEDR/PES: 2007-2011, 2012-2016, 2016-2020, 2020-2024

- 2014 - Visiting Associate Professor (Research) 25 Oct. - 01Nov. University of Athens
- 2014 - Visiting Associate Professor (Research), 3-9 Mar., University College Dublin
- 2013 - Visiting Associate Professor (Research), 19-30 Oct., University of Athens
- 2012 - Visiting Associate Professor (Research), 14-27Aug., National Hellenic Foundation, Athens
- 2010 - Visiting Associate Professor (Research) 27 Jul. – 15 Aug., National Institute of Materials Physics, Bucharest
- 2010 - Visiting Associate Professor (Research) 25-29 Oct., Limoges University
- 2009 - Visiting Associate Professor (Research) 30 Jul. – 30 Aug., National Institute of Materials Physics, Bucharest
- 2009 - Visiting Associate Professor (Teaching) July 2009, Technical University Athens
- 1999 - Visiting Research Fellow (1 month) ENSAM Engineering School, Angers

Publications and dissemination

Author of more than 100 peer-reviewed publications in the materials and energy materials area published in : Solar Energy Materials and Solar Cells, Materials Today, Thin solid films, Applied Surface Science, Surface Coatings and Technology,

Synthetic Metals etc.. H=25, 1850 citations (feb. 2022), among the Journals citing the author we mention: Science, Journal of the Am. Chem. Soc., Energy and Environment Science, Chem. of Mat., Organic Electronics, Appl. Phys. Lett., Sol. Eng. & Sol. Cells etc). Individual impact factor calculated from ISI Web of Knowledge more than 20; individual influence global factor calculated from ISI Web of Knowledge: more than 50 (for the first 6 the most cited articles) author of one book and of two books chapters, more than 100 presentations in international conferences (29 invited).

Author of the book: *Future Solar Energy Devices*, Springer, 2018

Invited Talks

- 2020 - **Plenary Talk**, Moderns Technologies, Eforie Nord, Romania
- 2021 - Invited seminar, Al.Cuza University of Iasi
- 2021 - Invited talk, EMRS International Conference, Strasbourg
- 2021 - Invited webinar, Pristina, Kosovo
- 2020 - Invited webinar, Skopje, Macedonia
- 2018 - Invited seminar, Dublin Institute of Technology
- 2018 - Invited talk, 20-th International Conference-School Advanced Materials and Technologies, Palanga, Lithuania
- 2018 - Invited seminar, Angstrom Laboratory, Uppsala University, Sweden
- 2018 - Invited seminar, Trinity College Dublin, Ireland
- 2018 - Invited seminar, INSA, Rennes
- 2018 - Invited lecture, Training School Solutions for critical raw materials, Sofia, Bulgaria
- 2018 - Invited talk, EMRS, Warsaw, Poland
- 2017 - Invited talk, ROCAM – International conference, July, Bucharest
- 2016 - Invited seminar Vilnius University
- 2016 - Invited talk, PAMS-2 International Conference, Cluj-Napoca
- 2015 - Invited talk International Summer School on Materials for Energy Conversion, Bucharest
- 2015 - Invited talk, “Lights of the World”, event organized by UNESCO, Bucharest
- 2015 - Invited talk International Summer School on Materials for Energy Conversion, Bucharest
- 2014 - Invited seminar (5 March 2014) Physics department, University College Dublin
- 2013 - Invited talk (12 July 2013) Department of Chemistry, University of Athens
- 2012 - Invited lecture, Advanced Workshop on Solar Energy Conversion, 21-23 May, 2012, Bucharest
- 2012 - Invited talk (29 October 2012), National Hellenic Research Foundation, Athens
- 2010 - Invited lecture, ISAOP 28 Sept-2Oct. 2010, Tokyo, Japan
- 2010 - Invited seminar (30 July 2010) National Institute of Materials Physics, Bucharest
- 2010 - Invited seminar (17 June 2010) XLIM, Limoges, France
- 2010 - Invited seminar (24 April 2010) Institute Charles Sadron, France
- 2009 - Invited lecture, ISAOP 3-4 Sept, Shanon, Ireland

Projects & Grants

12 project proposals as PI and 5 as co-PI, on the total of these 17, 10 were funding; between these we would like to mention: Co-PI in ANR - OxTiMIBPhotobat. (2007-2009); Co-PI in the European Project FP6 – ORGAPVNET (2006-2009); PERLE 1 (2006-2009), PERLE 2 (2010-2013), Co-PI in the European Project ERA-RUS-NET (2012-2013), PI of one national project and Co-PI of three PHC bilateral cooperation projects: PHC Brancusi (2015-2016), PHC Platon (2013-2014), PHC Brancusi (2009-2010), PHC Ulysses – Ireland (2018), TOR – Sweden (2018)

Academic activities:

Advising and co-advising of: 5 post-doc, 16 PhD students, 8 students in Master II and 15 students in Master I

Member of: PhD defence commissions (12 PhD thesis),

Member of: scientific societies (ACS, EPS and EMRS)

Associate member of: the Academy of Science, Belle-Letters and Arts, Angers

Reviewer for scientific journals: Thin Solid Films, Materials Science and Engineering B, Solar Energy Materials and Solar Cells, Applied Surface Science, Journal of thermal Spray, Materials Science in Semiconductor Processing, Journal of Materials Science, Applied Physics A, Materials Chemistry and Physics

Member of: the Board of the Faculty of Science - University of Angers

Member of: AUF Commission expertise

Member of scientific networks: ORGAPVNET, NANORGASOL, ATLANSUN

Head of: the Professional Training “Energy demand management and renewable energy”

Head of: the Research group “Thin films for photovoltaic applications” - LPHIA

Coordinator of: the ERASMUS Program FR-RO «Solar cells and plasma applications in surface science»

Industrial Exploitation /Intellectual Property: Conception and realization of an equipment for thin films deposition by *pyrosol*, ENSAM, Angers (2005), commercialised by AnnealSys

Professional activities and honours: chair of ISAOP 2010, member of comities of some scientific national and international conferences (ISAOP Angers 2007, FTM Iasi 2002, PNC Iasi 2001)

Chairperson: ISAOP (2010), ROCAM (2015), EMRS (2016, 2021)

Selected papers:

1. M.Girtan, *Optical Materials* 125 (2022) 112068 (IF* 3.08)
2. M.Girtan, *Solar Energy*, 195, 1(2020) 446-453 (IF 4.67)
3. M. Girtan, *Future Solar Energy Devices*, ISBN 978-3-319-67337-0 , Springer (2018)
4. M.Girtan, *Solar Energy Materials & Solar Cells* 160 (2017) 430–434 (IF. 6.98)
5. M.Girtan, *Materials Today* 17, 3 (2014) 101 (IF 26.41)
6. M.Girtan, *Organic Electronics*, 14 (1), (2013) p. 200 – 205 (IF. 4.051)
7. M.Girtan, *Solar Energy Materials and Solar Cells* 100 (2012) 153 – 161 (IF. 6.98)
8. M.Girtan, M.Rusu, *Solar Energy Materials and Solar Cells*, 94, Issue 3 (2010) 446 (IF. 6.98)
9. M.Girtan, S. Dabos-Seignon, G.G. Rusu, M.Rusu, *Applied Surface Science*, 254, 13 (2008) 4179 (IF. 5.27)
10. M.Girtan, G. Folcher, *Surface & Coatings Technology*, 172/2-3 (2003) p.240-248 (IF. 3.38)

*IF – Impact Factor from ISI Web of Knowledge

Publications : <https://sites.google.com/view/mihaelagirtan/publications>

Conferences : <https://sites.google.com/view/mihaelagirtan/conferences>

PUBLICATIONS (106)

1. **M. Girtan**, *Invited article Carbon-based materials for future photonics devices. A parallel between electronics and photonics*, Optical Materials, 125 (2022) 112068
2. **M. Girtan**, B. Negulescu, *Invited article A review on oxide/metal/oxide thin films on flexible substrates as electrodes for organic and perovskite solar cells*, Optical materials X, 13 (2022) 100122
3. **M. Girtan**, A. Wittenberg , M. L. Grilli , D. P. S. de Oliveira , C. Giosuè, M. L. Ruello, *The critical raw materials issue between scarcity, supply risk, and unique properties*, Materials 14(8), (2021) 1826
4. G. Petre, A. Sanculescu, **M. Girtan**, M. Socol, C. Breazu, L. Vacareanu, N. Preda, O. rasoga, F. Stanculescu, A. S. Doroshkevich, *Organic heterostructures with indium-free transparent conductor electrode for opto-electronic applications*, Physica Status Solidi A, (2021) 2100521
5. A. Stanculescu, M. Socol, O. Rasoga, C. Breazu, N. Preda, F. Stanculescu, G. Socol, L. Vacareanu, **M. Girtan**, Al. S. Doroshkevich, *Arylenevinylene Oligomer-Based Heterostructures on Flexible AZO Electrodes*, Materials 2021, 14(24), 7688
6. J. Walshe, **M. Girtan**, S. McCormack, J. Doran, G. Amarandei, *Combined Experimental and Modeling Analysis for the Development of Optical Materials Suitable to Enhance the Implementation of Plasmonic-Enhanced Luminescent Down-Shifting Solutions on Existing Silicon-Based Photovoltaic Devices*, ACS Appl. Electron. Mater. (2021)
7. J. Walshe , **M. Girtan**, S. McCormack , J. Doran, G. Amarandei, *Exploring the development of nanocomposite encapsulation solutions for enhancing the efficiency of PV systems using optical modelling* , Optical Materials 111 (2021) 110654
8. L.Hrostea, P.Lisnic, R.Mallet, L.Leontie, **M.Girtan**, *Studies on the Physical Properties of TiO₂:Nb/Ag/TiO₂:Nb and NiO/Ag/NiO Three-Layer Structures on Glass and Plastic Substrates as Transparent Conductive Electrodes for Solar Cells*, Nanomaterials 11(6) 2021 1416
9. **M. Girtan**, *On the electrical and photoelectrical properties of CH₃NH₃PbI₃ perovskites thin films*, Solar Energy 195, 1 (2020), pp. 446-453
10. **M. Girtan**, R. Mallet, M.Socol, A. Stanculescu, *On the Physical Properties PEDOT:PSS Thin Films*, Materials Today Communications 22 (2020) 100735
11. A. Stanculescu, C. Breazu, M. Socol, O.Rasoga, N. Preda, G. Petre, A.M. Solonaru, M. Grigoras F. Stanculescu, G. Socol, G. Popescu-Pelin, **M.Girtan**, *Effect of ITO electrode patterning on the properties of organic heterostructures based on non-fullerene acceptor prepared by MAPLE*, Applied Surface Science 509 (2020) 145351
12. L. Hrostea, L. Leontie, **M. Girtan**, *Characterization of PBDB-T-SF: fullerene blend thin films for solar cell applications*, Romanian Reports in Physics, 72, 2 (2020)

13. M. Lakhdari, F. Habelhames, B. Nessark, **M. Girtan**, H. Derbal-Habak, Y. Bonnassieux, D. Tondelier, J. M. Nunzi, *Effects of pulsed electrodeposition parameters on the properties of zinc oxide thin films to improve the photoelectrochemical and photoelectrodegradation efficiency*, Eur. Phys. J. Appl. Phys. 84, 30102 (2019)
14. M. Socol, N. Preda, C. Breazu, A. Stanculescu, A. Costas, F. Stanculescu, **M. Girtan**, F. Gherendi, G. Popescu-Pelin, G. Socol, *Flexible organic heterostructures obtained by MAPLE*, Applied Physics A (2018) 124:60
15. M. Socol, N. Preda, C. Breazu, C. Florica, A. Costas, C.M. Istrate, A. Stanculescu, **M. Girtan**, F. Gherendi, *Organic heterostructures obtained on ZnO/Ag/ZnO electrode*, Vacuum, 154 (2018) pp. 366-370
16. W. Saidi, N. Hfayedh, A. Megriche, **M. Girtan**, M. El Maaoui, *Hydrophilic/hydrophobic and optical properties of B2O3 doped TiO2 sol-gel thin films: Effect of B2O3 content, film thickness and surface roughness*, Materials Chemistry and Physics, 215 (2018) pp.31-39
17. C. Breazu, M. Socol, N. Preda, E. Matei, O. Rasoga, **M. Girtan**, R. Mallet, F. Stanculescu, A. Stanculescu, *On the properties of organic heterostructures prepared with nano-patterned metallic electrode*, Applied Surface Science, 443 (2018) 592-602
18. **M.Girtan**, *Future solar energy devices*, Proceedings of SPIE – The International Society for Optical Engineering 10683, 106831Z (2018)
19. L. Hrostea, **M. Girtan**, R. Mallet, L. Leontie, *Optical and Morphological Properties of P3HT and P3HT:PCBM Thin Films Used in Photovoltaic Applications*, IOP Conf. Series: Materials Science and Engineering 374 (2018) 012015
20. M. Socol, N. Preda, O. Rasoga, C. Breazu, I. Stavarache, F. Stanculescu, G. Socol, F. Gherendi, V. Grumezescu, G. Popescu-Pelin, **M. Girtan**, N. Stefan, *Flexible heterostructures based on metal phthalocyanines thin films obtained by MAPLE*, Applied Surface Science, 374 (2016), 403-410
21. A. Stanculescu, G. Socol, L. Vacareanu, M. Socol, O. Rasoga, C. Breazu, **M. Girtan**, F. Stanculescu, *MAPLE preparation and characterization of mixed arylenevinylene based oligomers:C60*, Applied Surface Science, 374, (2016), 278-289
22. **M. Girtan**, *Study of charge carriers' transport in organic solar cells by illumination area shifting*, Solar Energy Materials & Solar Cells 160 (2017) 430–434
23. **M. Girtan**, L. Hrostea, M. Boclinca, B. Negulescu, *Study of oxide/metal/oxide thin films for transparent electronics and solar cells applications by spectroscopic ellipsometry*, AIMS Materials Science, 4(3) (2017) 594-613
24. S. Antohe, S. Iftimie, L. Hrostea, V.A. Antohe, **M. Girtan**, *A Critical Review of Photovoltaic Cells Based on Organic Monomeric and Polymeric Thin Film Heterojunctions*, Thin Solid Films, 642 (2017) 219-231
25. L. Hrostea, M. Boclinca, M. Socol, L. Leontie, A. Stanculescu, **M. Girtan**, *Oxide/metal/oxide electrodes for solar cell applications*, Solar Energy, 146 (2017) 464–469
26. A. Stanculescu, O. Rasoga, M. Socol, L. Vacareanu, M. Grigoras, G. Socol, F. Stanculescu, C. Breazu, E. Matei, N. Preda, **M. Girtan**, *MAPLE prepared heterostructures with oligoazomethine: fullerene derivative mixed layer for photovoltaic applications*, Applied Surface Science, 417, (2017), 183-195

27. M. Socol, N. Preda, A. Stanculescu, C. Breazu, C. Florica, F. Stanculescu, S. Iftimie, **M. Girtan**, G. Popescu-Pelin, G. Socol, *Organic heterostructures deposited by MAPLE on AZO substrate*, Applied Surface Science, 417, (2017), 196-203
28. A. Aukštuolis, **M. Girtan**, G.A. Mousdis, R. Mallet, M. Socol, M.S. R., A. Stanculescu, *Measurement of Charge Carrier Mobility in Perovskite Nanowire Films by Photo-Celiv Method*, Romanian Academy Series A, 18, 1/(2017), pp. 34–41
29. C. Breazu, N. Preda, M. Socol, F. Stanculescu, E. Matei, I. Stavarache, G. Iordache, **M. Girtan**, O. Rasoga, A. Stanculescu, *Investigations on the properties of a two-dimensional nanopatterned metallic film*, Digest Journal of Nanomaterials and Biostructures Vol. 11, No. 4, (2016), 1213 – 1229
30. O. Maalej, J. Merigeon, B. Boulard, **M. Girtan**, *Visible to near-infrared down-shifting in Tm³⁺ doped fluoride glasses for solar cells efficiency enhancement*, Optical Materials, 60 (2016) 235–239
31. M. Socol, N. Preda, O. Rasoga, C. Breazu, I. Stavarache, F. Stanculescu, G. Socol, F. Gherendi, V. Grumezescu, G. Popescu-Pelin, **M. Girtan**, N. Stefan, *Flexible heterostructures based on metal phthalocyanines thin films obtained by MAPLE*, Applied Surface Science, 374 (2016), 403-410
32. A. Stanculescu, G. Socol, L. Vacareanu, M. Socol, O. Rasoga, C. Breazu, **M. Girtan**, F. Stanculescu, *MAPLE preparation and characterization of mixed arylenevinylene based oligomers:C60*, Applied Surface Science, 374, (2016), 278-289
33. P. Koralli, S. F. Varol, M. Kompitsas, **M. Girtan**, *Brightness of Blue/Violet Luminescent Nano-Crystalline AZO and IZO Thin Films with Effect of Layer Number: For High Optical Performance*, Chin. Phys. Lett. Vol. 33, No. 5 (2016) 056801
34. W. Saidi, N. Hfaïdh, **M. Girtan**, A. Megriche, M. El Maaoui, *Effect of B₂O₃ addition on optical and structural properties of TiO₂ as a new blocking layer for multiple dye sensitive solar cell application (DSSC)*, RSC Advances, (2016), 6, 68819-68826
35. J. Merigeon, O. Maalej, B. Boulard, A. Stanculescu, L. Leontie, D. Mardare, **M. Girtan**, *Studies on Pr³⁺–Yb³⁺ codoped ZBLA as rare earth down convertor glasses for solar cells encapsulation*, Optical Materials, 48, (2015) p.243-246
36. M. Socol, O. Rasoga, C. Breazu, G. Socol, N. Preda, I. Pasuk, D. Visan, I. Stavarache, F. Gherendi, **M. Girtan**, U. Sidwaba, *Heterostructures based on small molecules organic compounds*, Digest Journal of Nanomaterials and Biostructures, in print 10 (4), (2015).
37. S. Iftimie, R. Mallet, J. Merigeon, L. Ion, **M. Girtan**, S. Antohe, *On the structural, morphological and optical properties of ITO, ZnO, ZnO:Al and NiO thin films obtained by thermal oxidation* Digest Journal of Nanomaterials and Biostructures, 10, 1, (2015) p.221-229
38. C. Adomnitei, S. Tascu, D. Luca, M. Dobromir, **M. Girtan**, D. Mardare, *Nb doped TiO₂ thin films as photocatalytic materials*, Bulletin of Materials Science Vol. 38, No. 5, (2015) p.1259-1262
39. **M. Girtan**, *Is photonics the new electronics?*, Materials Today, 17, Is. 3, (2014), p.100-101
40. O. Toma, L. Ion, **M. Girtan**, S. Antohe, *Optical, morphological and electrical studies of thermally vacuum evaporated CdTe thin films for photovoltaic applications*, Solar Energy, 108 (2014) p.51–60

41. **M. Girtan**, R. Mallet, *On the electrical properties of transparent electrodes*, Proceedings of the Romanian Academy, Series A, Vol.15, No. 2 (2014), p.146–150
42. R. Danac, L. Leontie, **M. Girtan**, M. Prelipceanu, A. Graur, A. Carlescu, G.I. Rusu *On the direct current electric conductivity and conduction mechanism of some stable disubstituted 4-(4-pyridyl)pyridinium ylides in thin films* Thin Solid Films, 556 (2014) p.216-222
43. L. Leontie, I. Evtodiev, N. Spalatu, M. Caraman, S. Evtodiev, O. Racovet, **M. Girtan**, C. Focsa *Optical and photosensitive properties of lamellar nanocomposites obtained by Cd intercalation of GaTe* Journal of Alloys and Compounds, 584 (2014) p.542-545
44. **M. Girtan** *On the stability of the electrical and photoelectrical properties of P3HT and P3HT:PCBM blends thin films* Organic Electronics, 14 (1), (2013) p.200-205
45. **M. Girtan**, A. Vlad, R. Mallet, M.A. Bodea, J.D. Pedarnig, A. Stanculescu, D. Mardare, L. Leontie, S. Antohe *On the properties of aluminium doped zinc oxide thin films deposited on plastic substrates from ceramic targets* Applied Surface Science, 274 (2013) p.306-313
46. Antohe, L. Ion, **M. Girtan**, O. Toma *Optical and Morphological Studies of Thermally Vacuum Evaporated ZnSe Thin Films* Romanian Reports in Physics, 65, 3 (2013) p.805-811
47. C. Adomnitei, D. Luca, **M. Girtan**, I. Sandu, V. Nica, A.V. Sandu, D. Mardare *Nb-doped TiO₂ thin films deposited by spray pyrolysis method* Journal of Optoelectronics and Advanced Materials, Vol.15, 5-6, (2013) p.519-522
48. A.V. Manole, M. Dobromir, **M. Girtan**, R. Mallet, G. Rusu, D. Luca *Optical properties of Nb-doped TiO₂ thin films prepared by sol-gel method* Ceramics International, 39(5) (2013) p.4771-4776
49. **M. Girtan**, *Comparison of ITO/metal/ITO and ZnO/metal/ZnO Characteristics as Transparent Electrodes for Third Generation Solar Cells* Solar Energy Mat. & Solar Cells 100 (2012) p.153-161
50. I. Vaiciulis, **M. Girtan**, A. Stanculescu, L. Leontie, F. Habelhames, S. Antohe, *On titanium oxide spray deposited thin films for solar cells applications* Proceedings of the Romanian Academy, Series A, 13,4/2012, p.335 -342
51. F. Stanculescu, Anca Stanculescu, **M. Girtan**, Marcela Socol, Oana Rasoga, *Effect of the morphology on the optical and electrical properties of polycarbonate film doped with aniline derivatives monomers*, Synthetic Metals, 161 (23-24) (2012) p.2589 – 2597
52. D. Mardare, A. Yildiz, **M. Girtan**, A. Manole, M. Dobromir, M. Irimia, C. Adomnitei, N. Cornei, D. Luca *Surface Wettability of Titania Thin Films with Increasing Nb Content* Journal of Applied Physics, 112 Is. 7, art. no. 073502 (2012)
53. L. Leontie, R. Danac, **M. Girtan**, A. Carlescu, A. P. Rambu, Gh. I. Rusu *Electron transport properties of some new 4-tert-butylcalix[4]arene derivatives in thin films* Materials Chemistry and Physics, 135 (1), (2012) p.123-129
54. M. Soyly, **M. Girtan**, F. Yakuphanoglu *Properties of PEDOT:PEG/ZnO/p-Si heterojunction diode* Materials Science and Engineering B, 177, 11 (2012) p.785-790

55. F. Habelhames, **M. Girtan**, A. Manole, L. Lamiri, Z. Wided, N. Belkacem *Enhancement of photoelectrochemical and optical characteristics using a TiO₂ nanoparticles interlayer in MEH-PPV heterojunction devices* Technical Proceedings of the 2012 NSTI Nanotechnology Conference and Expo, NSTI-Nanotech 2012 , pp. 420-423
56. S. Iftimie, A. Radu, M. Radu, C. Besleaga, I. Pana, S. Craciun, **M.Girtan**, L. Ion, S. Antohe, *Influence of PEDOT:PSS layer on the performances of "bulk-heterojunction" photovoltaic cells based on MEH-PPV:PCBM(1:4) polymeric blends*, Digest Journal of Nanomaterials and Biostructures, 6, Is. 4, (2011), p.1631-1638
57. A. Stanculescu, M. Socol, G. Socol, I. N. Mihailescu, F. Stanculescu, **M. Girtan** *Maple Prepared Organic Heterostructures for Photovoltaic Applications*, Applied Physics A-Materials Science & Processing 104 (3) (2011) p.921-928
58. A. Stanculescu, L. Vacareanu, M. Grigoras, M. Socol, G. Socol, F. Stanculescu, N. Preda, E. Matei, I. Ionita, **M. Girtan**, I. N. Mihailescu *Thin Films of Arylenevinylene Oligomers Prepared by Maple for Applications in Non-Linear Optics*, Applied Surface Science 257 (2011) p.5298-5302
59. A. Radu, S.Iftimie, V. Ghenescu, C. besleaga, V.A. Antohe, G.Bratina, L.Ion, S.Craciun, **M.Girtan**, S.Antohe *The influence of LiF layer abd ZnO nanoparticels addings on the performances of flexible photovoltaic cells based on polymer blends*, Digest Journal of Nanomaterials and Biostructures, Vol 6, no 3 (2011) p.1141-1148
60. F-Z. Ghomrani, S.Iftimie, N. Gabouze, A. Serier, M.Socol, A. Stanculescu, F. Sanchez, S.Antohe, **M.Girtan** *Influence of Al Doping Agents Nature on the Physical Properties of Al:ZnO Films Deposited by Spin-Coating Technique* Optoelectronics and Advanced Materials – R. Comm. Vol 5. Is.3 (2011) p.247-251
61. A. Stanculescu, M. Socol, G. Socol, I.N. Mihailescu, **M. Girtan**, N.Preda, A.-M. Albu, F. Stanculescu, *Effect of maleic anhydride-aniline derivative buffer layer on the properties of flexible substrate heterostructures: Indium tin oxide/nucleic acid base/metal*, Thin Solid Films, 520 (4) (2011) p.1251-1258
62. **M. Girtan**, M. Rusu *Role of ITO and PEDOT:PSS in Stability/Degradation of Polymer : Fullerene Bulk Heterojunctions Solar Cells* Solar Energy Materials and Solar Cells 94 (3) (2010) p.446 – 450
63. **M. Girtan**, M. Socol, B. Pattier, M. Sylla, A. Stanculescu *On the Structural, Morphological, Optical and Electrical properties of Sol-Gel Deposited ZnO:In Films* Thin Solid Films 519 (2),(2010) p.573-577
64. F. Habelhames, B. Nessark, **M. Girtan**, *Electrosynthesis of organic-inorganic compounds (p-n heterojunction)* Materials Science in Semiconductor Processing 13 (2010) p.141-146
65. A. Stanculescu, A. M. Albu, G. Socol, F. Stanculescu, M. Socol, N. Preda, O. Rasoga, **M. Girtan**, I. Iulian *MAPLE deposited thin monomer films of maleimidic derivatives for photonics* Journal of Optoelectronics and Advanced Materials, 12 (3) (2010) p.731-736
66. M. Socol, O. Rasoga, F. Stanculescu, **M. Girtan**, A. Stanculescu, *Effect of the morphology on the optical and electrical properties of TPyP thin films deposited by vacuum evaporation*, Optoelectronics and Advanced Materials – R. Comm., 4, (12), (2010), p.2032-2038
67. **A. Taouri**, H. Derbal, R. Mountasser, **M. Girtan**, A. Stanculescu, **M. Sylla** *Study of multiphoton absorption processes in a perylenediimide derivative using thermal lensing technique* Optoelectronics and Advanced Materials – R. Comm., 4 (1), (2010) p.83-85

68. **M. Girtan**, M. Kompitsas, R. Mallet, I. Fasaki *On Physical Properties of Undoped and Al and In Doped Zinc Oxide Films Deposited on PET Substrates by Reactive Pulsed Laser Deposition* European Physical Journal - Applied Physics 51, 3, (2010) art.no. 33212
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2. J. Hladik, **M. Girtan**, H. Adam, J. L. Guignard, et al. *Les énergies renouvelables aujourd'hui et demain*, Ellipses, ISBN-10: 2729864482, ISBN-13: 978-2729864484, (2011) 520 pages
3. Felicia Iacomi, Diana Mardare, **M. Girtan**, *FIZICĂ GENERALĂ - Lucrări de laborator. Întrebări. Probleme* Editura Gama, Iasi, 1997, ISBN 973-97937-9-7

INVITED TALKS (29)

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Conferences and webinars

1. M.Girtan, On the Physical Properties of CH₃NH₃PBI₃ Thin Films for Solar Energy Conversion Systems (Web), Invited talk, 3rd June 2021, EMRS , Strasbourg
2. M.Girtan, Understanding the energy concept and the perspectives for future solar energy devices (Web), Invited talk, 24 March 2021, Pristina, Kosovo
3. M.Girtan, Les energies vertes en France et en Europe (Web), 27 November 2020, Skopje, Macedonia
4. M.Girtan, Plenary talk, Invited lecture, The 8th International Conference on Modern Manufacturing Technologies in Industrial Engineering, Modtech, Eforie Nord 23-27 June 2020
5. M. Girtan, Electronics and photonics towards new solar energy devices, 26 February 2020, Utrecht, Netherlands
6. M. Girtan, *Future solar energy devices*, 20-th International Conference-School Advanced Materials and Technologies, August 27-31, 2018, Palanga, Lithuania, Invited lecture, Chair person
7. M. Girtan, L. Hrostea, B. Negulescu, *Ellipsometric modelling in the optimization of thin films fabrication processes*, Invited lecture, Training School 6-8 February 2018, Sofia, Invited lecture
8. M. Girtan , B. Negulescu, L. Hrostea , M. Boclinca , *Reduction and replacement of critical raw material used for transparent electrodes in flat screens, transparent electronics and solar cells*, EMRS-fall Meeting, 18-21 September 2017, Warsaw, Invited lecture
9. M. Girtan, *Solar cells and photonic devices*, Invited talk, ROCAM, 11-14 July, 2017, Bucharest, Invited lecture, Chair person
10. M. Girtan, *Electronics and photonics towards plasmonics and new solar energy devices*, PAMS-2, Cluj-Napoca, 8-14 Sept. 2016, Invited lecture
11. M. Girtan, *Electronics and photonics towards plasmonics and new solar energy devices*, International Year of Light 2015, 70th anniversary of UNESCO, "Lights of the World" Bucharest, 30 Oct. - 1 Nov. 2015, Invited lecture, Chair person
12. M. Girtan, *On the Electrical and Photoelectrical Properties of Conducting Polymers for Organic Solar Cells*, International Summer School on Materials for Energy Conversion, 6-11 July, 2015, Bucharest, Romania, Invited lectures
13. M. Girtan, *Trends in the new generation solar cells research*, ROCAM, 7-10 July 2015, Bucharest, Romania, Invited lecture, Chair person
14. M. Girtan *Electronics and Photonics: Two Sciences in the Benefit of Solar Energy Conversion* Advanced Workshop on Solar Energy Conversion, 21-23 May, 2012, Bucharest Invited lecture

15. M. Girtan *The Role and the Properties of Organic and Inorganic Transparent Conducting Films for Organic and Hybrid Solar Cells* 10th International Symposium on Advanced Organic Photonics, 1st International Symposium in Super-hybrid Materials, 28thSept. - 2nd Oct. 2010, Tokyo, Japan, Invited lecture, Chair person
16. M. Girtan *Transparent conductors for organic electronics applications* Japan-Europe Joint Workshop - The 9th International Symposium on Advanced Organic Photonic, ISAOP-9, 3rd and 4th Sept. 2009, Bunratty, Shannon, Ireland, Invited lecture

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Seminars

17. M.Girtan, *Manufactured technologies for solar cells fabrication: from first to third generation* , Al. Cuza University, Iasi, 8 December 2021
18. M. Girtan, *Ellipsometric modelling as a solution to reduce the experimental tests and the waste of materials in the optimization of multilayers thin films fabrication process*, 08/11/2018, Invited seminar, Dublin Institute of Technology
19. M. Girtan, *Solar energy and photonics devices*, Invited seminar, 22/08/2018, Uppsala University
20. M. Girtan, *Solar energy conversion systems*, Invited seminar, 14/06/2018, Dublin Institute of Technology
21. M. Girtan, *Future solar energy devices*, Invited seminar, 11/06/2018, Trinity College Dublin
22. M. Girtan, *Solar cells and photonics devices*, Invited seminar, 24/05/2018, INSA – Rennes
23. M. Girtan, *Trends on the new generation solar cells research*, Invited seminar, 19/12/2016, Vilnius University
24. M. Girtan, *On the polymer : fullerene organic solar cells*, 05/03/2014, Physics Department, University College Dublin
25. M. Girtan, *On the electrical and photo-electrical properties of some conducting polymers used in organic solar cells*, 12/07/2013, Department of Chemistry, University of Athens
26. M. Girtan, *On the stability of the electrical and photoelectrical properties of P3HT:PCBM solar cells thin films components*, 29/10/2012, National Hellenic Research Foundation, Athens
27. M. Girtan, *Transparent and conducting thin films with applications in organic solar cells*, 30/07/2010, National Institute of Materials Physics, Bucharest, Romania
28. M. Girtan, *Le rôle des oxydes transparents et conducteurs dans les cellules solaires de troisième génération*, 17/06/2010, XLIM, Limoges
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INTERNATIONAL CONFERENCES - (151)

1. M. Girtan, R. Mallet, M.Socol, A.Sanculescu, *Organic semiconductors thin films as alternative transparent conductors*, (Web), 1st June 2021, EMRS, Symp. C., Strasbourg
2. M.Girtan, R. Mallet, *On the photoelectrical properties of MAIPbI₂ perovskites thin films*, NanoGe, 4-8 November 2019, Berlin (p)
3. M. Girtan, *Technologies for future solar energy devices*, ModTech, 19-22 June 2019, Iasi, (o)
4. M. Girtan, L. Hrostea, I. Leontie, *Ellipsometric modelling as a solution to the optimization of thin films devices fabrication process*, ModTech, 19-22 June, 2019 Iasi (o)
5. J. Walshe, G. Amarandei, J. Doran, M. Girtan, *Development of Plasmonic Enhanced Luminescent down Shifting (pLDS) and 'Bragg-Type' Layers for Photovoltaic Applications*, 20th International Conference-School Advanced Materials and Technologies, Aug. 27-31, 2018, Palanga, Lithuania (p)
6. M. Girtan, *Future Solar Energy Devices*, SPIE Photonics Europe, 22-26 April 2018, Strasbourg (Spie Digital library oral video presentation available) (o)
7. M. Girtan, *Electronics and photonics towards plasmonics and new solar energy devices*, SPIE Photonics Europe, 22-26 April 2018, Strasbourg (p)
8. M. Girtan, *Abundance and scarcity of elements on earth and universe*, EMRS-fall Meeting, 18-21 September 2017, Warsaw (p)
9. L. Hrostea, M.L. Grilli, M. Girtan, *Indium free Oxide/Metal/Oxide for solar cell applications*, EMRS-fall Meeting, 18-21 September 2017, Warsaw (p)
10. M. Girtan, *Trends in the new generation solar cells research*, ICPAM, 8-14 Sept. 2016, Cluj-Napoca, Romania (o)
11. M. Boclinca, L. Hrostea, B. Negulescu, A. Stanculescu, L. Leontie, M. Girtan, *On the physical properties of TiO₂/Au/TiO₂ multilayer films structures*, ICPAM, 8-14 Sept. 2016 Cluj-Napoca, Romania (p)
12. L. Hrostea, M. Boclinca, M. Socol, R. Mallet, L. Leontie, M. Girtan, *Optical, structural and morphological properties of Bi₂O₃/Au/Bi₂O₃ multilayer films structures*, ICPAM, 8-14 Sept. 2016 Cluj-Napoca, Romania (p)
13. M. Girtan, *The influence of metallic cathode geometry on the performances of organic solar cells*, EMRS, 2-6 mai, 2016, Lille, France, Symp. T (p)
14. J. Merigeon, O. Maalej, B. Boulard, M. Girtan, *Rare Earth Down Converter Glasses for Solar Cells Encapsulation*, EMRS, 2-6 mai, 2016, Lille, France, Symp. T (p)
15. M. Girtan, G. Mousdis, et al, *Studies of the morphological and optical properties of CH₃NH₃PbI₃ nanowires prepared by spin-coating*, EMRS, 2-6 mai, 2016, Lille, France, Symp. T (p)
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38. M. Girtan *Comparison of ITO/metal/ITO and ZnO/metal/ZnO transparent electrodes for plastic solar cells* EMRS, 14-18, May, 2012, Strasbourg, France (p)
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45. M. Girtan, *Structural and Optical properties of In doped ZnO thin films*, IS-TCO, 2nd International Symposium on Transparent Conductive Oxides, 22-26 October 2008, Crete, Greece (p)
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49. G. G. Rusu, M.Rusu, M. Girtan, *Optical Characterization of Vacuum Evaporated CdZnTe Thin Films Deposited by Stacked Layer Method* 6th Iberian Vacuum Meeting IVM-6, June 26-28, 2006, Salamanca, Spain (p)
50. M. Girtan, P.O. Logerais, Anne Bouteville, S. Gurlui, G.G. Rusu, *Thermal stability of electrical and optical properties of transparent conducting substrates for solar cells* 7th International Balkan Workshop - Applied Physics, July 5-7th, 2006, Constanta, Romania (p)
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56. G.G.Rusu, M. Girtan, M.Rusu, N.Apetroaie, *Effect of the heat treatment on the structure and optical properties of Cu-doped CdTe thin films* Workshop on Fundamental and Applied Research in Physics, Iasi, Oct. 30th 2004 (p)
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