



PERSONAL INFORMATION

Tatyana Koutzarova

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Sex Female | Nationality Bulgarian

WORK EXPERIENCE

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- 2008–Present **Assoc. Professor, Institute of Electronics, BAS**
Institute of Electronics, Bulgarian Academy of Sciences, Sofia (Bulgaria)
- 2014–Present **Head of Microwave Magnetics Laboratory, Institute of Electronics, BAS**
- 2013–10/2015 **Deputy Chairman of Scientific Council, Institute of Electronics, BAS**
Institute of Electronics, BAS
- 2012–2020 **Member of General Assembly of BAS**
- 2009–2013 **Secretary of Scientific Council, Institute of Electronics, BAS**
- 2009–Present **Member of Scientific Council, Institute of Electronics, BAS**
- 2004–2008 **Research Scientist**
Institute of Electronics, BAS
- 2001–2004 **Researcher and Post-doc Fellowship**
SURATECS group, University of Liege, Belgium, Liege (Belgium)
- 1995–1998 **Researcher, Institute of Electronics, BAS**
Sofia (Bulgaria)

EDUCATION AND TRAINING

-
- 1990–1995 **Student in Inorganic and Analytic Chemistry**
Sofia University St. Kliment Ohridski, Faculty of Chemistry, Sofia (Bulgaria)
Thesis: “Investigation of the phase diagram of the Y-Ba-Cu-K-O and K_2CO_3 - $BaCO_3$ systems” (1995)
- 1998–2001 **PhD student in Physics**
Institute of Electronics-BAS, Sofia (Bulgaria)
PhD degree in Physics, Institute of Electronics-BAS (2002)
Thesis: “Investigation of the influence of second phase and cation substitution on the magnetic and electric properties of copper oxides (HTSC and Ferrites)”
- 01/10/2001–30/06/2003 **Young Researcher**

SUPRATECS group at the University of Liege, Liege (Belgium)
 Research Training Network Project: SUPERMACHINES, HPRN-2000-00036, FP5

02/01/2004–31/03/2004 **Post doctoral position**
 SUPRATECS group at the University of Liege, Liege (Belgium)
 Research Training Network Project: SUPERMACHINES, HPRN-2000-00036, FP5

29/06/1998–10/07/1998
 Summer School of Superconducting Materials: Advances in Technology and Applications, Bologna (Italy)

09/07/2000–21/07/2000
 2nd Scenet School on Superconducting Materials and Application, Karlsruhe (Germany)

22/09/2001–04/10/2001
 3rd SCENET School on Superconducting Materials and Applications, Anavyssos (Greece)

01/06/2001–06/06/2001
 Summer School “Women In nano”, Coma-Ruga (Spain)

2012–2014 **Staff mobility for training**
 University of Liege, Liege (Belgium)
 “The use of grazing incidence X-ray diffractometry (BrukerD8) to characterize the crystallographic structure of polycrystalline magnetic thin films”, Lifelong Learning Programme - LLP, ERASMUS (13 days)

11/05/2011–12/05/2011 **Training Course on Applying for and Managing European Funded Projects**
 EuroPlan

PERSONAL SKILLS

Mother tongue(s) Bulgarian

Foreign language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C1	C1	C1	B2
Russian	C2	C2	C1	C1	C1
French	A2	A2	A2	A2	A1

Levels: A1 and A2: Basic user - B1 and B2: Independent user - C1 and C2: Proficient user
 Common European Framework of Reference for Languages - Self-assessment grid

Organisational / managerial skills Project leader or/and member of research teams in 9 national and 17 international projects in the field of magnetic and superconducting materials.
 Supervisor of 2 PhD-students.
 Head of Microwave Magnetics Laboratory, Institute of Electronics, BAS (2014 -).
 Deputy Chairman of Scientific Council, Institute of Electronics, BAS (2013 - 2015).
 Secretary of Scientific Council, Institute of Electronics, BAS (2009 - 2013).

Member of the Scientific Council of the Institute of Electronics, BAS (2009 -).

Job-related skills	<p>Magnetic oxides preparation – multiferroic materials, nano-powders, films, nano-composites and microwave absorbers; Superconductors – powders, polycrystalline bulk, single-domains, thick films; X-ray diffraction; DTA; Scanning Electron Microscopy; Transmission Electron Microscopy; Magnetic measurements; Magneto-electric measurements; Microwave measurements</p> <p>Processing and interpretation of the data obtained using the techniques listed above</p>
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ADDITIONAL INFORMATION

Publications

I. Book chapters

1. T. Koutzarova, S. Kolev, K. Krezhov, Ch. Ghelev, B. Vertruyen, L. M. Tran and A. Zaleski, **Chapter 3** "Preparation and Phase Transitions in Y-Type Magneto-Electric Hexaferrites", Advance in Materials Science Research, ed. by Maryann C. Wythers, vol. 41, Nova Science Publishers, Inc., Hauppauge, N.Y. USA, (2020) pp. 105-151. ISBN: 978-1-53617-785-5
2. T. Koutzarova, S. Kolev, Ch. Ghelev, B. Vertruyen, A. Zaleski, **Chapter 2** "Synthesis and investigation of the properties of hexaferrites obtained by microemulsion techniques", Microemulsions: Systems, Properties and Applications, ed. by Taylor Torres, Nova Science Publishers, Inc., Hauppauge, N.Y. USA, (2016) pp. 37-82. ISBN: 978-1-63485-890-8
3. T. Koutzarova, S. Kolev, Ch. Ghelev, K. Grigorov, I. Nedkov, **Chapter 10** "Structural and Magnetic Properties and Preparation Techniques of Nanosized M-type Hexaferrite Powders", Advances in Nanoscale Magnetism, eds. by B.Aktas and F.Mikhailov, Springer Berlin Heidelberg (2009) pp. 183-203.

II. Papers in journals

1. T. Koutzarova, S. Kolev, K. Krezhov, B. Georgieva, Ch. Ghelev, D. Kovacheva, B. Vertruyen, R. Closset, L.M. Tran, M. Babij, A. Zaleski, "Ni-substitution effect on the properties of $Ba_{0.5}Sr_{1.5}Zn_{2-x}Ni_xFe_{12}O_{22}$ powders", **J. Magn. Magn. Mater.** **505** (2020) Art. Number 166725.
2. S. Kolev, P. Peneva, K. Krezhov, T. Malakova, Ch. Ghelev, T. Koutzarova, D. Kovacheva, B. Vertruyen, R. Closset, L.M. Tran, A. Zaleski, "Structural, magnetic and microwave characterization of polycrystalline Z-Type $Sr_3Co_2Fe_{24}O_{41}$ Hexaferrite", **Materials** **13** (2020) Art. Number 2355.
3. T. Ivanova, A. Harizanova, T. Koutzarova, B. Vertruyen, R. Closset, "Structural and optical characterization of nitrogen and gallium co-doped ZnO thin films, deposited by sol-gel method", **Journal of Molecular Structure** **1206** (2020) Art. Number 127773.
4. T. Koutzarova, B. Georgieva, S. Kolev, Ch. Ghelev, K. Krezhov, D. Kovacheva, B. Vertruyen, R. Closset, L.M. Tran, A. Zaleski, "Structural study of thick hexaferrite films", **J. Phys.: Conf. Ser.** **1492** (2020) Art. Number 012064.
5. P. Dankov, S. Kolev, T. Koutzarova, "Dielectric and magnetic properties of $Sr_3Co_2Fe_{24}O_{41}$ thin hexaferrite samples in the microwave range", **J. Phys.: Conf. Ser.** **1492** (2020) Art. Number 012048.
6. P. Dankov, V. Levcheva, S. Kolev, T. Koutzarova, "Characterization of multilayer nano-absorbers", **J. Phys.: Conf. Ser.** **1492** (2020) Art. Number 012047.
7. T. Ivanova, A. Harizanova, T. Koutzarova, B. Vertruyen, "Electrochromic and optical study of sol-gel TiO_2 -MnO films", **J. Phys.: Conf. Ser.** **1492** (2020) Art. Number 012028.
8. T. Ivanova, A. Harizanova, T. Koutzarova, B. Vertruyen, "Deposition and study of N-In co-doped sol-gel ZnO films", **J. Phys.: Conf. Ser.** **1492** (2020) Art. Number
9. T. Koutzarova, S. Kolev, K. Krezhov, B. Georgieva, D. Kovacheva, Ch. Ghelev, B. Vertruyen, F. Boschini, A. Mahmoud, L.M. Tran, A. Zaleski, "Study of the structural and magnetic properties of Co-substituted $Ba_2Mg_2Fe_{12}O_{22}$ hexaferrites synthesized by sonochemical co-precipitation", **Materials** **12** (2019) Art. Number 1414 (9).
10. B. Georgieva, S. Kolev, K. Krezhov, Ch. Ghelev, D. Kovacheva, B. Vertruyen, R. Closset, L.M. Tran, M. Babij, A. Zaleski, T. Koutzarova, "Structural and magnetic characterization of Y-type hexaferrite powders prepared by sol-gel auto-combustion and sonochemistry", **J. Magn. Magn. Mater.** **477** (2019) 131-135.
11. T. Ivanova, A. Harizanova, T. Koutzarova, B. Vertruyen, B. Stefanov, "Structural and morphological characterization of sol-gel ZnO:Ga films: Effect of annealing temperatures", **Thin Solid Films** **646** (2018) 132-142.

12. T. Koutzarova, Ch. Ghelev, P. Peneva, B. Georgieva, S. Kolev, B. Vertruyen, R. Closset, "Hexaferrite multiferroics: from bulk to thick films", **J. Phys.: Conf. Ser.** **992** (2018) 012058.
13. T. Ivanova, A. Harizanova, T. Koutzarova, B. Vertruyen, B. Stefanov, "Structural and morphological properties of sol-gel ZnO:Ni films", **J. Phys.: Conf. Ser.** **992** (2018) 012044.
14. B. Georgieva, H. Nichev, M. Petrov, T. Koutzarova, V. Georgieva, D. Dimova-Malinovska, "Influence of loading QCM with electrochemically deposited ZnO on its NO₂ sensing properties", **J. Phys.: Conf. Ser.** **992** (2018) 012026.
15. D. Staneva, T. Koutzarova, B. Vertruyen, E. Vasileva-Tonkova, I. Grabchev "Synthesis, structural characterization and antibacterial activity of cotton fabric modified with a hydrogel containing barium hexaferrite nanoparticles", **J. Molecular Structure** **1127** (2017) 74-80.
16. T. Ivanova, A. Harizanova, T. Koutzarova, B. Vertruyen, "Optical and structural study of Ga and In co-doped ZnO films", **Colloids and Surfaces A: Physicochemical and Engineering Aspects**, 532 (2017) 357-362.
17. T. Ivanova, A. Harizanova, T. Koutzarova, B. Vertruyen, "Sol-gel derived ZnO:Y nanostructured films: Structural and optical study", **Colloids and Surfaces A: Physicochemical and Engineering Aspects**, 532 (2017) 363-368.
18. P. V. Peneva, T. I. Koutzarova, S. M. Kolev, Ch. G. Ghelev, B. Vertruyen, R. Closset, C. Henrist, R. Cloots, A. Zaleski, "Effect of annealing temperature on the structural and magnetic properties of barium hexaferrite powders prepared by a modified co-precipitation technique", **Bul. Chem. Comm.**, 48, Special Issue G (2016) 151-155.
19. B. V. Georgieva, T. I. Koutzarova, S. M. Kolev, Ch. G. Ghelev, B. Vertruyen, R. Closset, R. Cloots, A. Zaleski, "Study of quasi-monophase Y-type hexaferrite Ba_{0.5}Sr_{1.5}Zn₂Al_{0.08}Fe_{11.92}O₂₂ powders", **Bul. Chem. Comm.**, 48, Special Issue G (2016) 147-150.
20. P. Peneva, T. Koutzarova, S. Kolev, Ch. Ghelev, B. Vertruyen, C. Henrist, R. Closet, R. Cloots, A. Zaleski "Influence of the preparation methods on the structure and magnetic properties of nanosized Al-substituted barium hexaferrite powders", AIP Conference Proceedings, 1722, 2016, Art. Number 220022
21. T. Ivanova, A. Harizanova, T. Koutzarova, B. Vertruyen, "Investigation of sol-gel yttrium doped ZnO thin films: structural and optical properties", **Journal of Physics: Conference Series** **682** (2016) 012023
22. T. Ivanova, A. Harizanova, T. Koutzarova, B. Vertruyen, "Optical characterization of Sol-Gel ZnO:Al thin films", **Journal of Physics: Conference Series** **700** (2016) 012048
23. T. Ivanova, A. Harizanova, T. Koutzarova, B. Vertruyen, "Optical characterization of sol-gel ZnO:Al thin films", **Superlattices and Microstructures**, 85, (2015), pp. 101-111.
24. T. Ivanova, A. Harizanova, T. Koutzarova, B. Vertruyen, "Facile deposition of ZnO:Cu films: Structural and optical characterization", **Materials Science in Semiconductor Processing**, 30 (2015) pp. 561-570
25. R. Angelova, M. Iliev, L. Slavov, T. Koutzarova, R. Closset, I. Nedkov, V. Groudeva, "Formation of artificial sheaths of *Leptothrix* sp. under laboratory conditions", **J. BioSci. Biotechnol.** (2015), SE/ONLINE: 165-170
26. K. Vutova, T. Nurgaliev, T. Koutzarova, S. Tinchev, T. Milenov, "Nanomaterials and nanotechnologies for electronics", **J. Bulg. Acad. Sciences** 5: 3-14 (2015) ISSN 0007-3989
27. T. Koutzarova, S. Kolev, I. Nedkov, K. Krezhov, D. Kovacheva, C. Ghelev, B. Vertruyen, C. Henrist, R. Cloots, "Study of quasi-monophase Y-type hexaferrite Ba₂Mg₂Fe₁₂O₂₂ powder", **Journal of Micro and Nanosystems**, 6 (2014) pp. 14-20
28. T. Ivanova, A. Harizanova, T. Koutzarova, B. Vertruyen, "Sol-gel nanocrystalline ZnO:Ag films: Structural and optical properties", **Superlattices and Microstructures**, 70 (2014) pp. 1-6
29. S. Kolev, T. Koutzarova "Influence of the agglomeration in the initial suspension (ferrofluid) on the oriented magnetic structure", **Journal of Physics: Conference Series** **514** (2014) 012021
30. T. Ivanova, A. Harizanova, T. Koutzarova, B. Vertruyen, Z. Nenova "Effect of different technological approaches on the optical properties of ZnO sol-gel thin films", **Journal of Physics: Conference Series** **514** (2014) 012009
31. T. Ivanova, A. Harizanova, T. Koutzarova, B. Vertruyen, Z. Nenova "Study of sol-gel Cu-doped Al₂O₃ thin films: structural and optical properties", **J. Phys.: Conference Series** **514** (2014) 012008
32. T. Koutzarova, S. Kolev, Ch. Ghelev, I. Nedkov, B. Vertruyen, R. Cloots, C. Henrist, A. Zaleski, "Differences in the structural and magnetic properties of nanosized barium hexaferrite powders prepared by single and double microemulsion techniques", **J. Alloy Compd**, 579 (2013), pp. 174-

180.

33. T. Ivanova, A. Harizanova, T. Koutzarova, B. Vertruyen, "Optical and structural characterization of TiO_2 films doped with silver nanoparticles obtained by sol-gel method", **Optical Materials**, 36 (2013) pp. 207-213
34. Nedkov I., Koutzarova T., "Magneto-electronics and some challenges for new applications of nanotechnologies", **J. Bulg. Acad. Sciences** 6: 49-54 (2013) ISSN 0007-3989
35. T. Ivanova, A. Harizanova, T. Koutzarova, B. Vertruyen, "Preparation and characterisation of Ag incorporated Al_2O_3 nanocomposite films obtained by sol-gel method", **Cryst. Res. Technol.** 47 (2012) pp. 579 – 584
36. Ch. Ghelev, T. Koutzarova, S. Kolev, I. Nedkov, K. Krezhov, D. Kovacheva, B. Blagoev, B. Vertruyen, C. Henrist, R. Cloots, A. Zaleski, V. Nizhankovskii, "Magnetic properties of nanosized $MgFe_2O_4$ powders prepared by auto-combustion", **Journal of Physics: Conference Series** 356 (2012) 012048
37. T. Koutzarova, S. Kolev, I. Nedkov, K. Krezhov, D. Kovacheva, B. Blagoev, Ch. Ghelev, C. Henrist, R. Cloots, A. Zaleski, "Magnetic properties of nanosized $Ba_2Mg_2Fe_{12}O_{22}$ powders obtained by auto-combustion", **J. Supercond. Novel Magnetism** 25 (2012) pp. 2631-2635.
38. T. Ivanova, A. Harizanova, T. Koutzarova, B. Vertruyen, "Preparation and characterization of $ZnO-TiO_2$ films obtained by sol-gel method", **J. Non-Cryst. Solids** 357 (2011) pp. 2840 - 2845
39. T. Ivanova, A. Harizanova, T. Koutzarova, B. Vertruyen, "Effect of annealing temperatures on properties of sol-gel grown $ZnO-ZrO_2$ films", **Cryst. Res. Technol.** 45 (2010) pp. 1154 – 1160.
40. T. Ivanova, A. Harizanova, T. Koutzarova, B. Vertruyen, "Study of ZnO sol-gel films: Effect of annealing", **Materials Letters**, 64 (2010) pp. 1147-1149
41. T. Koutzarova, S. Kolev, K. Grigorov, Ch. Ghelev, A. Zaleski, R. E. Vandenberghe, M. Ausloos, C. Henrist, R. Cloots, I. Nedkov, "Structural and magnetic properties of nanosized barium hexaferrite powders obtained by microemulsion technique", **Solid State Phenomena**, 159 (2010) pp. 57-62.
42. V. Pencheva, S. Penchev, I. Nedkov, T. Koutzarova, V. Naboko, "Modulated optical reflectance method for analysis of magnetoelectric nanomaterials", **Journal of Physics: Conference Series** 223(2010) 012041.
43. V. Pencheva, S. Penchev, I. Nedkov, T. Koutzarova, V. Naboko, "Analysis of modulated optical reflectance applied to magnetoelectric nanomaterials", **Comptes Rendus de L'Academie Bulgare Des Science** 63 (2010) pp. 1111-1116.
44. T. Ivanova, A. Harizanova, T. Koutzarova, N. Krins, B. Vertruyen, "Electrochromic TiO_2 , ZrO_2 and TiO_2-ZrO_2 thin films by dip-coating method", **Materials Science and Engineering B**, 165 (2009) pp. 212–216.
45. S. Kolev, T. Koutzarova, A. Yanev, Ch. Ghelev, I. Nedkov, "Microwave properties of polymer composites containing combinations of micro- and nano-sized magnetic fillers", **J. Nanoscience and Nanotechnology**, 8 (2008) pp. 650–654.
46. T. Koutzarova, S. Kolev, K. Grigorov, Ch. Ghelev, I. Nedkov, M. Ausloos, R. Cloots, T. Midlarz, A. Zaleski, "Nanosized Barium Hexaferrite Powders Obtained by a Single Microemulsion Technique", **Solid State Phenomena**, 140 (2008) pp. 55-60.
47. I. Nedkov, T. Koutzarova, Ch. Ghelev, P. Lukanov, D. Lisjak, D. Makovec, R.E. Vandenberghe, A. Gilewski, "Influence of microstructure and preparation methods on the magnetocrystalline structure and magnetic properties of submicron $BaFe_{12}O_{19}$ powders", **J. Mater. Res.**, 21 (2006) pp. 2606-2610.
48. T. Koutzarova, S. Kolev, Ch. Ghelev, D. Paneva, I. Nedkov, "Microstructural study and size control of iron oxides nanoparticles produced by microemulsion technique", **phys. stat. sol. (c)**, 3 (2006) pp. 1302-1307.
49. V. Pencheva, S. Penchev, V. Naboko, T. Donchev, S. Kolev, T. Koutzarova, "Laser heterodyne measurement of photothermal displacement for material surface characterization", **Plasma Process. Polym.**, 3 (2006) pp. 253-256.
50. R. Cloots, T. Koutzarova, J-P. Mathieu, M. Ausloos, "From RE-211 to RE-123. How to control the final microstructure of superconducting single-domains", **Supercond. Sci. Technol.**, 18 (2005) pp. R9-R23.
51. J-P. Mathieu, T. Koutzarova, A. Rulmont, J-F. Fagnard, Ph. Laurent, B. Mattivi, Ph. Vanderbemden, M. Ausloos, R. Cloots, "Investigation of $DyBa_2Cu_3O_{7-d}$ superconducting domains grown by the infiltration technique starting with small size Dy-211 particles", **Supercond. Sci. Technol.**, 18 (2005) pp. S136-S141.
52. J-P. Mathieu, I. G. Cano, T. Koutzarova, A. Rulmont, Ph. Vanderbemden, D. Dew-Hughes, M. Ausloos, R. Cloots, "The contribution of 211 particles in the mechanical reinforcement mechanism of

- 123 superconducting single domains", **Supercond. Sci. Technol.**, **17** (2004) pp. 169-174.
53. T. Koutzarova, I. Nedkov, M. Auslos, R. Cloots, T. Midlarz, M. Nogues "The influence of the polycrystalline state and partial Dy-substitution on the YBCO superconducting properties", **phys. stat. sol. (a)**, **191** (2002) pp. 235-242.
54. I. Nedkov, T. Merodiiska, L. Milenova, T. Koutzarova "Modified ferrite plating of Fe_3O_4 and $CuFe_2O_4$ thin films", **J. Magn. Magn. Mater.**, **211** (2000) pp. 296-300.
55. I. Nedkov, T. Merodiiska, T. Koutzarova, "Magneto-optical behavior of magnetite films obtained by modified ferrite plating", **J. Magnetic Society of Japan**, **22** (1998) pp.378-380.
56. T. Koutzarova, S. Miteva, I. Nedkov, M. Nouges "Magnetic properties of Dy-substituted YBCO ceramics", **Balk. Phys. Lett., Special Issue**, (2002).

III. Papers in conference proceedings

1. B. Georgieva, T. Koutzarova, S. Kolev, K. Krezhov, D. Kovacheva, Ch. Ghelev, B. Vertruyen, L.M. Tran, A. Zaleski, "Study of Y-type hexaferrite $Ba_{0.5}Sr_{1.5}ZnNiFe_{12}O_{22}$ powders", AIP Conference Proceedings, 2075 (2019) 160032.
2. T. Ivanova, A. Harizanova, T. Koutzarova, B. Vertruyen, "Optical and structural properties of sol-gel derived ZnO:F thin films", AIP Conference Proceedings, 2075 (2019) 140005
3. T. Koutzarova, S. Kolev, Chapter "Nanosized ferrite materials for absorption of and protection from MW radiation", Advanced Nanotechnologies for Detection and Defence against CBRN Agents, eds. by Petkov P., Tsiulyanu D., Popov C., Kulisch W., NATO Science for Peace and Security Series B: Physics and Biophysics, Springer, Dordrecht, (2018), p. 273-283
4. B. Georgieva, S. Kolev, Ch. Ghelev, T. Koutzarova, D. Kovacheva, B. Vertruyen, R. Closset, "A comparative study of the morphology of y-type hexaferrite powders obtained by sol-gel autocombustion and ultrasonic co-precipitation", Advanced Nanotechnologies for Detection and Defence against CBRN Agents, eds. by Petkov P., Tsiulyanu D., Popov C., Kulisch W., NATO Science for Peace and Security Series B: Physics and Biophysics, Springer, Dordrecht, (2018), p. 31-36
5. T. Koutzarova, Ch. Ghelev, P. Peneva, B. Georgieva, S. Kolev, B. Vertruyen, R. Closset, "Hexaferrite multiferroics: From bulk to thick films", J. Phys.: Conf. Ser. 992 (2018) Art. num. 012058
6. P. Peneva, S. Kolev, K. Krezhov, Ch. Ghelev, D. Kovacheva, B. Vertruyen, R. Closset, L. M. Tran, A. Zaleski, T. Koutzarova, "Structural properties and magnetic phase transitions in Z-type $Sr_3Co_2Fe_{24}O_{41}$ hexaferrites", Nanoscience & Nanotechnology: Nanostructured materials application and innovation transfer, 18 (2) (2018) 19-22.
7. T. Koutzarova, B. Georgieva, S. Kolev, K. Krezhov, D. Kovacheva, Ch. Ghelev, B. Vertruyen, F. Boschini, A. Mahmoud, L. M. Tran, A. Zaleski, "Study of the properties of Co-substituted $Ba_2Mg_2Fe_{12}O_{22}$ hexaferrites", Proceedings of The 3rd International Electronic Conference on Materials Sciences, (2018) 05229.
8. B. Georgieva, K. Krezhov, S. Kolev, Ch. Ghelev, D. Kovacheva, M. Fabian, E. Svab, T. Koutzarova, "Characterization of Y-type hexaferrite $Ba_2Mg_2Fe_{12}O_{22}$ powders", IEEE Proc. 40th International Spring Seminar on Electronics Technology (2017) pp. 39-44
9. T. Ivanova, A. Harizanova, T. Koutzarova, B. Vertruyen, Stefanov B., "Morphological study of sol-gel derived ZnO: In thin films", IEEE Proc. 40th International Spring Seminar on Electronics Technology (2017) pp. 448-453
10. T. Ivanova, A. Harizanova, T. Koutzarova, B. Vertruyen, "Investigation of indium and gallium co-doped ZnO films, derived by sol-gel method", IEEE Proc. 40th International Spring Seminar on Electronics Technology (2017) pp. 454-459
11. T. Ivanova, A. Harizanova, T. Koutzarova, B. Vertruyen, "Characterization of sol - gel in doped ZnO films: Structural and optical properties", Proc. 15th IEEE International Conference on Nanotechnology (IEEE NANO 2015), (2016) 225 - 228 ISBN 978-1-4673-8155-0
12. T. Ivanova, A. Harizanova, T. Koutzarova, B. Vertruyen, "Sol - gel Ni doped ZnO films: Effect of annealing temperature", Proc. 15th IEEE International Conference on Nanotechnology (IEEE NANO 2015), (2016) 250 - 253 ISBN 978-1-4673-8155-0
13. S. Gateva, T. Koutzarova, S. Kolev, Ch. Ghelev, P. Peneva, I. Nedkov, "Magnetic oxides and multiferroics for microwave and magnetoelectronic applications", Proceedings of the first VAST-BAS workshop on science and technology, Ha Long-Vietnam, 20-21 November, 2014, pp.87-96 (2014) ISBN: 978-604-913-304-6
14. P. Peneva, T. Koutzarova, S. Kolev, Ch. Ghelev, B. Vertruyen, C. Henrist, A. Zaleski, "Structure and Magnetic Properties of Nanosized Al-substituted Barium Hexaferrite Powders Obtained by

- Single Microemulsion Method*", Proc. "Electronica 2015" 14-15 May 2015, Sofia, pp. 73-78.
15. P. Peneva, T. Koutzarova, S. Kolev, Ch. Ghelev, "Influence of the preparation methods on the structure and magnetic properties of nanosized Al-substituted barium hexaferrite powders", University of Plovdiv „Paisii Hilendarski" Scientific Studies, vol. 39, FASC. 4, 2015 PHYSICS, pp. 91-96
 16. A. Nikolov, R. Nikov, N. Nedyalkov, T. Koutzarova, M. Alexandrov, D. Karashanova, C. Ristoscu, I. Mihailescu, "Influence of the scanning conditions on the characteristics of the nanostructures fabricated by laser ablation in liquid", Proc. SPIE9447, 18th International School on Quantum Electronics: Laser Physics and Applications, 94470L (January 8, 2015); doi:10.1117/12.2175651
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Conferences Participation in more than 40 international and national conferences

Memberships Member of the Union of Physicists in Bulgaria

Projects Ongoing projects

1. DO 08/4 "Novel functional ferrites-based magneto-electric structures", (2016-), coordinator.
2. KP-06- India-2 - 2019 „Exploiting the Zn-ferrite thin films material: an assortment of spintronics devices", India–Bulgaria Inter-Governmental Programme of Cooperation in Science and Technology, (2019-)
3. "Studies of the structural and microwave properties of magnetic nanocomposites for microwave absorption applications", Joint Research Project between IE-BAS and Liege University, Belgium (2018-2020), coordinator.
4. "Investigation of structural and magnetic phase transitions in multifunctional materials – oxides and alloys with applications in electronics and medicine", Joint Research Project between IE-BAS and Institute of Low Temperature and Structural Research, Polish Academy of Sciences (12018-2020), coordinator.

Selected projects

1. NATO Reintegration Grant EAP.RIG 981472 "Nanocomposites – Magnetic Superconductors and Ferroxides for Microwave Applications", (2004-2007), coordinator.
2. European Supermachines Research Training Network "Advanced rotating electrical machines exploiting high temperature superconducting components" (HPRN-CT-2000-0036),
3. "Nanosized ferrite materials for microwave absorption and protection from MW radiation", Word Federation of Scientists, (2009-2010), supervisor.
4. Project DO 02-99/2009 "Preparation of thick ferrite coatings by deposition in magnetic field" (Bulgarian – Slovenian Scientific cooperation – 2009-2010), coordinator
5. Project DHTC 01/4/2011 "Room temperature multiferroics based on Y-type hexaferrites" (Bulgarian – Slovenian Scientific cooperation – 2011-2013)
6. DO 02-224/2008 "Novel magnetic and magnetoelectric materials for next generation electronic components", (BNSF)
7. T02-17_2014 "Preparation and study of nanosized biogenic iron oxides/oxihydroxides for applied in catalys, electronics, ecology", (BNSF)
8. DID 02-38 "New materials for electronics and ecology based on biogenic iron oxides" , (BNSF)
9. TN-1/01 "Nano-structures for microwave and optical measurements", (BNSF)
10. MUF-1301 "Influence of FMR of nanostructured oxides fillers on the properties of microwave absorbers", (BNSF)
11. F-639 "Investigation of thin oxides films obtained by plasma spraying", (BNSF)
12. TS-539 "Investigation of polycrystalline thin films and layers of Fe- and Cu-oxides", (BNSF)
13. TS-496 "Investigation of the phase diagram of the YBCO-Me₂CO₃systems", Bulgarian National Science Fund (BNSF)
14. Project "Smart magnetic materials for application in electronics and spintronics", BAS (2015-2017)
15. Project "Magnetic materials for application in electronics (multiferroic and microwave ferrites)",BAS (2012-2014)
16. Joint Research Project between IE-BAS and Liege University, Belgium "The synthesis and characterization of multifunctional magnetic oxides – diluted magnetic semiconductors and multiferroics" (2015-2017), coordinator.
17. Joint Research Project between IE-BAS and Institute of Low Temperature and Structural Research, Polish Academy of Sciences "Studies of the structural and magnetic properties of hexaferrites-based highly anisotropic magnetic structures for microwave applications" (2015-2017), coordinator.

18. Joint Research Project between IE-BAS and Liege University, Belgium "Structural Contributions on the Ferroelectric and Ferromagnetic Effects of Y-type Multiferroics" (2013-2014)
19. Joint Research Project between IE-BAS and Liege University, Belgium " Synthesis and properties of magnetoelectric effects on multiferroics Y-type hexaferrite materials" (2010-2012)
20. Joint Research Project between IE-BAS and Liege University, Belgium "Optical and microwave remote characterization of dynamic small-size submicron-structured systems in life sciences and industry" (2006-2009)
21. JointResearchProjectbetweenBASandSUPRATECS, University of Liege, Belgium "Caractérisations optiques, gamma et microon des departicules de très petite taille structurée dynamiquement, rencontrées dans less ciences de la vie et l'industrie" (2004-2006)
22. Joint Research Project between IE-BAS and Liege University, Belgium "Doping effects in HTSC ceramics" (2002-2005)
23. Joint Research Project between IE-BAS and Liege University, Belgium "Investigations of alkaline metals doped HTSC" (1997-2001)

Honours and awards

Acad. Djakov Award for research in the fields of physical electronics, quantum electronics and radio sciences - 2006