

Publications list

a) List of the most relevant publications achieved after obtaining the PhD degree in physics

1. Structural characteristics of B₂O₃-Bi₂O₃ glasses with high transition metal oxide content, **L. Baia**, R. Stefan, W. Kiefer, S. Simon, *J. Raman Spectrosc.*, **36**, 261-266, 2005.
2. Structural and morphological properties of silver nanoparticles-phosphate glass composites, **L. Baia**, M. Baia, W. Kiefer, J. Popp, S. Simon, *Chem. Phys.* **327**, 63-69, 2006.
3. Synthesis and nanostructural characterization of TiO₂ aerogels for photovoltaic devices, **L. Baia**, A. Peter, V. Cosoveanu, E. Indrea, M. Baia, J. Popp, V. Danciu, *Thin Solid Films*, **511-512**, 512-516, 2006.
4. Structural properties of silver nanoclusters-phosphate glass composites, **L. Baia**, D. Muresan, M. Baia, J. Popp, S. Simon, *Vib. Spectrosc.* **43**(2), 313-318, 2007.
5. Evaluating the thermal treatment parameters effect on the anatase nano crystallites size of titania aerogels, **L. Baia**, M. Baia, A. Peter, V. Cosoveanu, V. Danciu, *J. Opto. Adv. Mater.*, **9**(3), 668-671, 2007.
6. Efficient dual functionality of highly porous nanocomposites based on TiO₂ and noble metal particles, **L. Baia**, L. Diamandescu, L. Barbu-Tudoran, A. Peter, G. Melinte, V. Danciu, M. Baia, *J. Alloys & Comp.*, **509**(6), 2672-2678, 2011.
7. Hydrogen peroxide versus water synthesis of bioglass-nanocrystalline hydroxyapatite composites, G. Melinte, **L. Baia**, V. Simon, S. Simon, *J. Mater. Sci.*, **46**(23), 7393-7400, 2011.
8. Experimental assessment of the phonon confinement in TiO₂ anatase nanocrystallites by Raman spectroscopy, D. Georgescu, **L. Baia**, O. Ersen, M. Baia, S. Simon, *J. Raman Spectrosc.*, doi: 10.1002/jrs.3103, 2012.
9. Weighting the influence of TiO₂ anatase/brookite ratio in TiO₂-Ag porous nanocomposites on visible photocatalytic performances, V. Iancu, M. Baia, L. Diamandescu, Zs. Pap, A. M. Vlaicu, V. Danciu, **Baia, L.**, *Materials Chemistry and Physics*, **141**(1), 234-239, 2013.

b) PhD thesis

Theory and applications of confocal micro-Raman spectroscopy on hybrid polymer coatings and PDMS membranes and spectroscopic studies of doped B₂O₃-Bi₂O₃ glass systems

c) Books and book chapters

1. **L. Baia**, W. Kiefer, S. Simon, *Multispectroscopic studies of local structure in heavy metal glasses*, In: Recent Research Developments in Non-Crystalline Solids – Transworld Research Network, ISBN: 81-7895-152-5, Kerala, India, pp. 1-25, 2004.
2. **L. Baia**, S. Simon, *The structure of glass and glass ceramics by vibrational spectroscopy*, Casa Cartii de Stiinta, ISBN978-973-133-183-6, Cluj-Napoca, Romania, 2007, pp. 148.
3. **L. Baia** and S. Simon, *UV-VIS and TEM assessment of morphological features of silver nanoparticles from phosphate glass matrices*, Modern Research and Educational Topics in Microscopy, A. Mendez-Vilas, J. Diaz (eds.), Formatex, ISBN-13:978-84-611-9418-6, Spain, pp. 576-583, 2007.
4. **Lucian Baia**, *Theory and applications of confocal micro-Raman spectroscopy on hybrid polymer coatings and PDMS membranes and spectroscopic studies of doped B₂O₃-Bi₂O₃ glass systems*, Cluj University Press, ISBN: 978-973-610-563-0, Cluj-Napoca, Romania, 2007.
5. **L. Baia**, *Fenomene termoelectrice si aplicatii*, Casa Cartii de Stiinta, ISBN978-973-133-496-7, Cluj-Napoca, Romania, 2008, pp. 108.

d) Papers published in ISI journals

1. Raman and IR spectroscopic studies of manganese doped GeO₂-Bi₂O₃ glasses, **L. Baia**, T. Iliescu, S. Simon, W. Kiefer, *J. Molecular Struct.*, **599**, 9-13, 2001
2. Confocal micro-Raman spectroscopy: Theory and application to a hybrid polymer coating, **L. Baia**, K. Gigant, U. Posset, G. Schottner, W. Kiefer, J. Popp, *Appl. Spectrosc.*, **56**(4), 536-540, 2002
3. Confocal Raman investigations on hybrid polymer coatings, **L. Baia**, K. Gigant, U. Posset, R. Petry, G. Schottner, W. Kiefer, J. Popp, *Vib. Spectrosc.*, **29**, 245-249, 2002.

4. Structural investigations of copper doped B_2O_3 - Bi_2O_3 glasses with high bismuth oxide content, **L. Baia**, R. Stefan, W. Kiefer, J. Popp, S. Simon, *J. Non-Cryst. Solids*, **303**, 379-386, 2002.
5. Inorganic-organic cross-linking in UV curable hard coats based upon vinyltriethoxysilane-tetraethoxysilane-polyfunctional acrylate hybrid polymers: A Raman spectroscopic study, K. Gigant, U. Posset, G. Schottner, **L. Baia**, W. Kiefer, J. Popp, *J. Sol-Gel Science & Technology*, **26**, 369-373, 2003.
6. Characterization of diffusion processes of pharmacological relevant molecules through PDMS-membranes by means of confocal micro resonance Raman spectroscopy, M. Schmitt, B. Leimeister, **L. Baia**, W. Kiefer, B. Weh, I. Zimmermann, J. Popp, *Chem. Phys. Chem.*, **4**(3), 296-299, 2003.
7. Vibrational spectroscopy of highly iron doped B_2O_3 - Bi_2O_3 glass systems, **L. Baia**, R. Stefan, J. Popp, S. Simon, W. Kiefer, *J. Non-Cryst. Solids*, **324**, 109-117, 2003.
8. Spectroscopic studies on the structure of vanadium tellurite glasses, **L. Baia**, M. Bolboaca, W. Kiefer, E. S. Yousef, C. Rüssel, F. W. Breitbarth, T. G. Mayerhöfer, J. Popp, *Phys. Chem. Glasses*, **45**, 178-182, 2004.
9. Structure–property correlations in hybrid sol–gel coatings as revealed by Raman spectroscopy, U. Posset, K. Gigant, G. Schottner, **L. Baia**, J. Popp, *Optical Materials*, **26**(2), 173-179, (2004).
10. Surface-enhanced Raman scattering and density functional theoretical study of anthranil adsorbed on colloidal silver particles, M. Baia, **L. Baia**, W. Kiefer, J. Popp, *J. Phys. Chem. B*, **108**(45) 17491-17496, 2004.
11. Structural characteristics of B_2O_3 - Bi_2O_3 glasses with high transition metal oxide content, **L. Baia**, R. Stefan, W. Kiefer, S. Simon, *J. Raman Spectrosc.*, **36**, 261-266, 2005.
12. Gold nanostructured films deposited on polystyrene colloidal crystal templates for surface-enhanced Raman spectroscopy, M. Baia, **L. Baia**, S. Astilean, *Chem Phys. Lett.*, **404**, 3-8, 2005.
13. The influence of manganese cations on the structure of lead high bismuthate glasses and glass ceramics, A. Radu, **L. Baia**, W. Kiefer, S. Simon, *Vib. Spectrosc.*, **39**, 127-130, 2005.

14. Infrared and Raman structural investigations of Bi₂O₃-PbO-B₂O₃ glasses, **L. Baia**, W. Kiefer, S. Simon, *Phys. Chem. Glasses*, **46** (3), 279-283, 2005.
15. Vibrational and EPR spectroscopic investigation of heavy-metal-oxide glasses and vitroceramics containing manganese, S. Simon, **L. Baia**, A. Radu, *J. Raman Spectrosc.*, **37**, 183-188, 2006.
16. Probing the enhancement mechanisms of SERS with p-aminothiophenol molecules adsorbed on self-assembled gold colloidal nanoparticles, M. Baia, F. Toderas, **L. Baia**, J. Popp, S. Astilean, *Chem. Phys. Lett.*, **422** (1-3), 127-132, 2006.
17. Surface-enhanced Raman scattering efficiency of truncated tetrahedral Ag nanoparticles arrays mediated by electromagnetic couplings, M. Baia, **L. Baia**, J. Popp, S. Astilean, *Appl. Phys. Lett.*, **88**, 143121, 2006.
18. Structural and morphological properties of silver nanoparticles-phosphate glass composites, **L. Baia**, M. Baia, W. Kiefer, J. Popp, S. Simon, *Chem. Phys.* **327**, 63-69, 2006.
19. Gold films deposited over regular arrays of polystyrene nanospheres as highly effective SERS substrates from visible to NIR, **L. Baia**, M. Baia, J. Popp, S. Astilean, *J. Phys. Chem. B*, **110**, 23982-23986, 2006.
20. Structural properties of silver nanoclusters-phosphate glass composites, **L. Baia**, D. Muresan, M. Baia, J. Popp, S. Simon, *Vib. Spectrosc.* **43**(2), 313-318, 2007.
21. Controlling Gold Nanoparticle Assemblies for Efficient Surface Enhanced Raman Scattering (SERS) and Localized Surface Plasmon Resonance (LSPR) Sensor, F. Toderas, M. Baia, **L. Baia**, S. Astilean, *Nanotechnology*, **18**(25), 255702, 2007.
22. Photocatalytic and structural properties of mixed titania and zirconia aerogels, V. Danciu, **L. Baia**, V. Cosoveanu, M. Baia, F. Vasiliu, L. Diamandescu, C.M. Teodorescu, M. Feder, J. Popp, *Optoel. Adv. Mater.-Rapid Communications*, **2**(2), 76-80, 2008.
23. Porous nanoarchitectures based on TiO₂ aerogels and Au particles as potential SERS sensor for monitoring of water quality, M. Baia, V. Cosoveanu, V. Danciu, **L. Baia**, *Vib. Spectrosc.*, **48**(2), 206-209, 2008.
24. Synthesis, structural characterization, and photocatalytic properties of iron-doped TiO₂ aerogels, M. Popa, L. Diamandescu, F. Vasiliu, C.M. Teodorescu, V. Cosoveanu, M. Baia, M. Feder, **L. Baia**, V. Danciu, *J. Mater. Sci.*, **44** (2), 358-364, 2009.

25. Semiconductor photoelectrodes for solar of splitting water, E. Indrea, S. Dreve, D. T. Silipas, G. Mihailescu, L. Olenic, A. Petru, V. Danciu, V. Cosoveanu, A. Nicoara, L. E. Muresan, E. J. Popovici, V. Popescu, N. Horea-Iustin, V. R. Tetean, **G. L. Baia**, T. Nyari, *J. Optoelect. Adv. Mater.*, **10**(9), 2213-2222, 2008.
26. Multilayer Structures of Self-Assembled Gold Nanoparticles as a Unique SERS and SEIRA Substrate, M. Baia, F. Toderas, **L. Baia**, L. S. Astilean, *ChemPhysChem*, **10**(7), 1106-1111, 2009.
27. Efficient dual functionality of highly porous nanocomposites based on TiO₂ and noble metal particles, **L. Baia**, L. Diamandescu, L. Barbu-Tudoran, A. Peter, G. Melinte, V. Danciu, M. Baia, *J. Alloys & Comp.*, **509**(6), 2672-2678, 2011.
28. Vibrational spectroscopic studies of germanium-high bismuthate glasses and vitroceramics, O. Ponta, **L. Baia**, M. Baia, S. Simon, *Zeitschrift fur Physikalische Chemie*, **225**(6-7), 647-659, 2011.
29. Photocatalytic activity of highly porous TiO₂-Ag materials, D. Georgescu, Z. Pap, M. Baia, I. C. Fort, V. Danciu, G. Melinte, **L. Baia**, S. Simon, *Studia Universitatis Babeş-Bolyai Chemia*, **3**, 51-58, 2011.
30. Morpho-structural characterization of TiO₂ nanosized powders with photocatalytic potential, M. Baia, M. Scarisoreanu, I. Morjan, I. P. Morjan, L. Baia, V. Cosoveanu, R. Alexandrescu, V. Danciu, *Studia Universitatis Babeş-Bolyai Chemia*, **3**, 5-13, 2011.
31. Hydrogen peroxide versus water synthesis of bioglass-nanocrystalline hydroxyapatite composites, G. Melinte, **L. Baia**, V. Simon, S. Simon, *J. Mater. Sci.*, **46**(23), 7393-7400, 2011.
32. Correlating the visible light photoactivity of N-doped TiO₂ with brookite particle size and bridged - nitro surface species, Zs. Pap, **L. Baia**, K. Mogyorósi, A. Dombi, A. Oszkó, V. Danciu, *Catal. Comm.*, doi: 10.1016/j.catcom.2011.10.003, 2011.
33. Silver effect on the structure of SiO₂-CaO-P₂O₅ ternary system, A. Vulpoi, **L. Baia**, S. Simon, V. Simon, *Mater. Sci. and Eng. C*, doi:10.1016/j.msec.2011.10.015, 2012.
34. Dynamic changes on the surface during the calcination of rapid heat treated TiO₂ photocatalysts, Z. Pap, E. Karácsonyi, Z. Cegléd, A. Dombi, V. Danciu, I. C. Popescu, **L. Baia**, K. Mogyorósi, *Appl. Catal. B: Environmental*, 111-112, 595-604, 2012.

35. Experimental assessment of the phonon confinement in TiO₂ anatase nanocrystallites by Raman spectroscopy, D. Georgescu, **L. Baia**, O. Ersen, M. Baia, S. Simon, *J. Raman Spectrosc.*, doi: 10.1002/jrs.3103, 2012.
36. Bioactivity and protein attachment onto bioactive glasses containing silver nanoparticles, A. Vulpoi, C. Gruian, E. Vanea, **L. Baia**, S. Simon, H.-J., Steinhoff, G. Göller, V. Simon, *J. Biomedical Materials Research - Part A*, **100 A**, (5), 1179-1186, 2012.
37. Gold nanoparticles developed in sol-gel derived apatite - Bioactive glass composites, S. Simon, R. Ciceo-Lucacel, T. Radu, **L. Baia**, O. Ponta, A. Iepure, V. Simon, *J. Mater. Sci.: Materials in Medicine*, **23**(5), 1193-1201, 2012.
38. The anchoring of fibrinogen to a bioactive glass investigated by FT-IR spectroscopy, K. Magyari, K., **L. Baia**, O. Popescu, S. Simon, V. Simon, *Vib. Spectrosc.*, **62**, 172-179, 2012.
39. The photocatalytic activity of TiO₂/WO₃/noble metal (Au or Pt) nanoarchitectures obtained by selective photodeposition, É. Karácsonyi, **L. Baia**, A. Dombi, V. Danciu, K. Mogyorósi, L. C. Pop, G. Kovács, V. Cosoveanu, A. Vulpoi, S. Simon, *Zs. Pap, Catal. Today*, DOI: 10.1016/j.cattod.2012.09.038, 2013.
40. TiO₂/WO₃/Au/MWCNT composite materials for photocatalytic hydrogen production: advantages and draw-backs, *Zs. Pap*, É. Karácsonyi, **L. Baia**, L. C. Pop, V. Danciu, K. Hernádi, K. Mogyorósi, A. Dombi, *Phys. Status Solidi B.*, DOI: 10.1002/pssb.201200095, 2013.
41. New insights regarding the calcination as a critical parameter in the synthesis of sol-gel made titania powders, K. Mogyorósi, É. Karácsonyi, *Zs. Cegléd*, A. Dombi, V. Danciu, **L. Baia**, *Zs. Pap, J Sol-Gel Sci Technol.* DOI: 10.1007/s10971-012-2897-1, 2013.
42. Behavior of gold nanoparticles in a titania aerogel matrix: Photocatalytic activity assessment and structure investigations, *Zs. Pap*, A. Radu, I. J. Hidi, G. Melinte, L. Diamandescu, T. Popescu, **L. Baia**, V. Danciu, M. Baia, *Chinese J.Catalysis*, **34**(4), 734-740, 2013.
43. Weighting the influence of TiO₂ anatase/brookite ratio in TiO₂-Ag porous nanocomposites on visible photocatalytic performances, V. Iancu, M. Baia, L. Diamandescu, *Zs. Pap*, A. M. Vlaicu, V. Danciu, **Baia, L.**, *Materials Chemistry and Physics*, **141**(1), 234-239, 2013.

44. Photocatalytic Efficiency of Zeolite-Based TiO₂ Composites for Reduction of Cu (II): Kinetic Models, Peter, A., Mihaly-Cozmuta, L., Mihaly-Cozmuta, A., Nicula, C., Barbu Tudoran, L., Vulpoi, A., **Baia, L.**, *Int. J. Appl. Ceramic Tech.*, DOI: 10.1111/ijac.12046, 2013.
45. The study of the structure and bioactivity of the B₂O₃•Na₂O•P₂O₅ system, I. J. Hidi, G. Melinte, R. Stefan, M. Bindea, **L. Baia**, *J. Raman Spectrosc.*, **44**, 1187-1194, 2013.

e) Papers published in international conference proceedings

1. Synthesis and nanostructural characterization of TiO₂ aerogels for photovoltaic devices, **L. Baia**, A. Peter, V. Cosoveanu, E. Indrea, M. Baia, J. Popp, V. Danciu, *Thin Solid Films*, **511-512**, 512-516, 2006.
Symposium on Thin Film and Nanostructured Materials for Photovoltaics held at the 2005 EMRS Meeting Location: Strasbourg, FRANCE Date: MAY 31-JUN 03, 2005.
2. Iron doped and undoped TiO₂ catalysts for advanced water treatment, V. Danciu, M. Popa, Z. Pap, **L. Baia**, M. Baia, V. Cosoveanu, F. Vasiliu, L. Diamandescu, M. Feder, R. Alexandrescu,
e-Proceeding of the 1st International Conference Environmental Applications of Advanced Oxidation Processes (EAAOP-1), Chania, Grecia, 2006, P041-49.
3. Tunable Surface-Enhanced Raman Scattering (SERS) from Noble Metal Films Deposited on Polystyrene Colloidal Crystal and Nanoparticle Arrays Fabricated by Nanosphere Litography, S. Astilean, M. Baia, **L. Baia**, C. Farcau, D. Maniu,
Meeting Digest of the EOS Topical Meeting on Molecular Plasmonic Devices, Engelberg, Elvetia 2006, pp. 74-76.
4. Self-assembled multilayers of gold nanoparticles as versatile platforms for molecular sensing by Fourier transform-surface enhanced scattering (FT-SERS) and surface enhanced infrared absorption (SEIRA), F. Toderas, S. Boca, M. Baia, **L. Baia**, D. Maniu, S. Astilean, S. Simon, *J. Opto. Adv. Mater.*, **9**(3), 625-628, 2007.
International Conference on Advanced Spectroscopies on Biomedical and Nanostructured Systems Location: Cluj Napoca, ROMANIA Date: SEP 03-06, 2006

5. Evaluating the thermal treatment parameters effect on the anatase nano crystallites size of titania aerogels, **L. Baia**, M. Baia, A. Peter, V. Cosoveanu, V. Danciu, *J. Opto. Adv. Mater.*, **9**(3), 668-671, 2007.
International Conference on Advanced Spectroscopies on Biomedical and Nanostructured Systems Location: Cluj Napoca, ROMANIA Date: SEP 03-06, 2006
6. Structural properties of some transition metal highly doped carbon aerogels, L.C. Cotet, M. Baia, **L. Baia**, I.C. Popescu, V. Cosoveanu, E. Indrea, J. Popp, V. Danciu, *J. Alloys & Comp.* **434-435**, 854-857, 2007.
12th International Symposium on Metastable and Nano-Materials (ISMANAM-2005) Location: Paris, FRANCE Date: JUL 03-07, 2005.
7. Synthesis, morpho-structural and photocatalytic properties of TiO₂ aerogel–Au colloidal particle composites, A. Peter, **L. Baia**, F. Vasiliu, L. Diamandescu, M. Baia, V. Cosoveanu, I. C. Popescu, M. Feder, V. Danciu, Proceedings of the 5th Conference New Research Trends in Material Science ARM-5, Sibiu, Romania, 2007, pp. 799-803.
8. Multiwalled carbon nanotubes in carbon aerogel highly doped with iron, M. Baia, L. C. Cotet, **L. Baia**, L. Barbu-Tudoran, V. Cosoveanu, V. Danciu, J. Popp, JOAM-Symposia, 9-12, 2008.
Proceedings of The International Conference Advanced Spectroscopies On Biomedical And Nanostructured Systems, September 7-10, Cluj-Napoca, Romania
9. Type I collagen-TiO₂ aerogel based biocomposites, **L. Baia**, M. Baia, V. Danciu, M.G. Albu, V. Cosoveanu, D. Iordachescu, V. Trandafir, *J. Opto. Adv. Mater.* **10**(4),933-936, 2008.
Conference: 5th International Conference on New Research Trends in Materials Science Location: Sibiu, ROMANIA Date: SEP, 2007
10. Zirconia Aerogel - Polyxometalate Composites Synthesis with Applications in Solid Oxide/Acid Fuel Cells, A. Nicoara, V. Cosoveanu, I. Ladiu, **L. Baia**, M. Baia, L. Muresan, I. Stamatina, V. Danciu, CLEAN TECHNOLOGY 2008: BIO ENERGY, RENEWABLES, GREEN BUILDING, SMART GRID, STORAGE, AND WATER, 298-301, 2008.
Conference: Clean Technology and Sustainable Industries Conference and Trade Show Location: Boston, MA Date: JUN 01-05, 2008.

11. Photocatalytic Activity Assessment of Some Transition Metal Doped Titania Aerogels via Morpho-Structural Analysis, M. Popa, **L. Baia**, C. Ghica, M. Baia, E. Indrea, V. Danciu, CLEAN TECHNOLOGY 2008: BIO ENERGY, RENEWABLES, GREEN BUILDING, SMART GRID, STORAGE, AND WATER, 388-391, 2008.
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Location: Boston, MA Date: JUN 01-05, 2008.
12. TiO₂-Ag Porous Nanocomposites for Advanced Photocatalytic Processes, **L. Baia**, M. Baia, F. Vasiliu, L. Diamandescu, A. Peter, V. Cosoveanu, V. Danciu, CLEAN TECHNOLOGY 2008: BIO ENERGY, RENEWABLES, GREEN BUILDING, SMART GRID, STORAGE, AND WATER, 683-686, 2008.
Conference: Clean Technology and Sustainable Industries Conference and Trade Show
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13. Highly porous nanocomposites based on TiO₂-noble metal particles for sensitive detection of water pollutants by SERS, M. Baia, G. Melinte, L. Barbu-Tudoran, L. Diamandescu, V. Iancu, V. Cosoveanu, V. Danciu, **L. Baia**, *Journal of Physics: Conference Series* **304** 012059 doi:10.1088/1742-6596/304/1/012059, 2011.
Conference: Nanosafe2010: International Conference on Safe Production and Use of Nanomaterials
14. The Influence of the Au Nanoparticles Dimension on the Photocatalytic Performances of TiO₂-Au Porous Composites, G. Melinte, M. Baia, D. Georgescu, **L. Baia**, V. Iancu, L. Diamandescu, T. Popescu, L. C. Cotet, L. Barbu-Tudoran, V. Danciu, S. Simon, S., ACTA PHYSICA POLONICA A **121**(1), 208-210, 2012,
Conference: 1st International Congress on Advances in Applied Physics and Materials Science (APMAS) Location: Antalya, TURKEY Date: MAY 12-15, 2011

f) Other papers published in non-ISI journals

1. Spectroscopic studies of iron doped B₂O₃-Bi₂O₃ glasses, **L. Baia**, D. Maniu, T. Iliescu, S. Simon, S. Schluecker, W. Kiefer, *Asian J. Physics*, **9**, 51-57, 2000.

2. Raman structural investigation of iron doped B₂O₃-Bi₂O₃ glass matrices, **L. Baia**, S. Schluecker, W. Kiefer, D. Maniu, T. Iliescu, S. Simon, *Studia UBB Cluj-Napoca, Physica*, **XLV**, 1, 21-28, 2000.
3. Shallow localized states in CdS thin layers by conductivity and Hall effect measurements, Gh. Cristea, E. Indrea, S. Colis, **L. Baia**, *Rom. J. Phys.*, **48**(7-10), 915-919, 2003.
4. Structural investigations of iron doped Bi₂O₃-GeO₂ glasses by means of micro-Raman and infrared spectroscopies, **L. Baia**, R. Stefan, W. Kiefer, S. Simon, *Studia Universitatis Babes-Bolyai, Physica*, **XLVIII**, 2, 476-478, 2003.
5. Optical and structural investigations of ordered metallic nanostructures for SERS experiments, M. Bolboaca, **L. Baia**, I. Chicinas, D. Maniu, T. Iliescu, S. Astilean, *Studia Universitatis Babes-Bolyai, Physica*, **XLVIII**, 2, 357-359, 2003.
6. The influence of manganese and iron cations on Bi₂O₃-GeO₂ glass structures, **L. Baia**, W. Kiefer, S. Simon, *Rom. Reports. Phys.*, **56**(3), 481-486, 2004.
7. IR and Raman investigations of B₂O₃-Bi₂O₃-Fe₂O₃ glasses and glass ceramics, **L. Baia**, R. Stefan, S. Simon, *Asian Chemistry Letters*, **7**(4), 171-176, 2004.
8. IR and Raman spectroscopic investigations of the iron doping effect on the structure of phosphate glasses, **L. Baia**, D. Muresan, E. Burean, V. Simon, W. Kiefer, S. Simon, *Studia Universitatis Babes-Bolyai, Physica*, **XLIX**, 3, 101-104, 2004.
9. Infrared absorption, Raman and SERS investigations of 2,1-benzisoxazole, M. Baia, **L. Baia**, *Studia UBB, Physica*, **L** 2, 113-122, 2005.
10. Synthesis and morpho-structural investigations of titania-collagen aerogels based biocomposites, **L. Baia**, V. Trandafir, V. Danciu, M. Baia, V. Cosoveanu, J. Popp, *Asian J. Phys.*, **15**(2), 201-207, 2006.
11. Synthesis and structural characterization of SiO₂-CaO-P₂O₅ sol-gel derived bioglasses, G. Melinte, M. Tamasan, **L. Baia**, V. Simon, *Studia Universitatis Babes-Bolyai, Physica*, **LIV**, 2, 9-14, 2009.
12. Nanosize Effect In TiO₂ Porous Nanostructures, D. Georgescu, **L. Baia**, S. Simon, *Studia Universitatis Babes-Bolyai, Physica*, **LIV**, 2, 33-40, 2009.
13. Synthesis and morpho-structural analysis of TiO₂-Au composites, V. Iancu, G. Melinte, **L. Baia**, L. Barbu-Tudoran, C. Cotet, V. Danciu, V. Cosoveanu, M. Baia, *Studia Universitatis Babes-Bolyai, Physica*, **LVI**, 2, 69-78, 2010.

14. Annealing induced textural particularities on TiO₂-Au nanocomposites, G. Melinte, M. Baia, V. Danciu, **L. Baia**, *Studia Universitatis Babes-Bolyai, Physica*, **LVI**, 2, 2011.
15. Phosphorus effect on the textural properties of sol-gel Si₂O-CaO-P₂O₅ bioactive glass system, K. Magyari, **L. Baia**, O. Popescu, S. Simon, V. Simon, *Studia Universitatis Babes-Bolyai, Physica*, **LVII**, 2, 31-39, 2012.
16. Study of lyophilized fibrinogen, collagen and serum albumin by Fourier Transform Infrared Spectroscopy, K. Magyari, **L. Baia**, O. Popescu, S. Simon, V. Simon, *Studia Universitatis Babes-Bolyai, Physica*, **LVII**, 2, , 91-98, 2012.
17. Structural properties of porous composites based on TiO₂ and Ag nanoparticles and their capability to detect water by pollutants by SERS, A. Radu, I. J. Hidi, V. Iancu, **L. Baia**, and M. Baia, *Studia Universitatis Babes-Bolyai, Physica*, **LVII**, 1, 77 – 85, 2012
18. Nanoarchitectures based on TiO₂ aerogels and noble metal particles for chemical pollutants detection, V. Iancu, **L. Baia**, V. Danciu, M. Baia, *Asian Chem Letters*, **16**(3), 2012.