

პუბლიკაციები (შერჩევით)

მონოგრაფიები (წიგნის თავების ჩათვლით):

1. გ. გიორგაძე, ზ. მელიქიშვილი. "კვანტური გამოთვლები" (თბილისი, 2009), 189 გვ., ISBN 978-9941-0-2110-7; UDC: 530.145+519.6+004.78
2. Medoidze, T.D., Melikishvili, Z.G., Tsintsadze, G.A., "Spectroscopy and Dynamics of Transitions in UV-Excited Tm^{3+} :YLiF₄ Laser System," In "*Focus on Lasers and Electro-Optics Research*," Nova Science Publishers, New York. 2004, pp. 93-147
3. Ivanov, M. Yu., and Melikishvili, Z.G., "Multiphoton matrix elements for interaction of an atom with polarized light," In "*Nonlinear Spectroscopy of Atoms and Diatomic Molecules*" (N. B. Delone, ed.). Council for Spectroscopy of Academy of Sciences of USSR, Moscow, 1988, pp.48-61 (in Russian).
4. Alimov, D. T. Il'kov, F.A., Krainov, V.P., and Melikishvili, Z.G. "Polarization effects in nonresonant multiphoton ionization of atoms," In "*Elementary Processes in the Laser Radiation Field*" (N. B. Delone, ed.). Council for Spectroscopy of Academy of Sciences of USSR, Moscow, 1987, pp. 154-183 (in Russian).

სამეცნიერო სტატიები:

1. Jaliashvili ZV, Medoidze TD, Melikishvili ZG and Gogilashvili KT, "Laser-induced fluorescence of oral mucosa cancer," *Laser Phys.* **27**(10), 105602 (2017). DOI: <https://doi.org/10.1088/1555-6611/aa828d> (იმპაქტაქტორიანი)
2. Giorgadze TG, Khutsishvili IG, Khuskivadze TB, Melikishvili ZG and Bregadze VG, "The Phenomena of Light Re-radiation and Electron Excitation Energy Transfer in Hydrolysis Reactions and for Analysis of the Quality of DNA Double Helix," *Adv Tech Biol Med* (2017). DOI: <10.4172/2379-1764.1000215> (იმპაქტაქტორიანი)
3. Bregadze VG, Melikishvili ZG, Giorgadze TG, Khutsishvili IG, Khuskivadze TB, Jaliashvili ZV and Sigua KI, "Laser-induced fluorescence resonance energy transfer for analysis of the quality of a DNA double helix," *Laser Phys. Lett.* **13** (2016) 115601 (7pp). DOI:<10.1088/1612-2011/13/11/115601> (იმპაქტაქტორიანი)
4. Bregadze VG, Melikishvili ZG, Giorgadze TG, Khutsishvili IG, Khuskivadze TB, Jaliashvili ZV, "Absorption Spectroscopy of Silver Atoms and Nanomolecular Studies of DNA and Some Organic Structures," *2016 XXI International Seminar/Workshop on Direct and Inverse Problems of Electromagnetic and Acoustic Wave Theory (DIPED)* pp.145-149, 2016. IEEE Catalog Number: Print ISBN: 978-1-5090-6175-4, Electronic ISBN: 978-1-5090-6176-1, DOI: <10.1109/DIPED.2016.7772239>
5. Bregadze VG, Melikishvili ZG, Giorgadze TG, Jaliashvili ZV, Chkhoberidze JG, Monaselidze JR, Khuskivadze TB, SiguaKI, "Nanoscale nonradiate energy transfer between intercalator molecules in DNA duplex" (2014). Publishing House "Technical University". ISBN 978-9941-20-478-4.
6. Bregadze VG, Giorgadze TG, Melikishvili ZG, "DNA and nanophotonics: original methodological approach," *Nanotechnology Reviews*, Volume 3, Issue 5, Pages 445–465 (2014). DOI: <10.1515/ntrev-2014-0021> (იმპაქტაქტორიანი)

7. Ramishvili L, Bochorishvili I, Gabunia N, Kuchukashvili Z, Gordeziani M, Chigogidze T, Khazaradze A, Melikishvili Z, Kotrikadze N, "Laser Induced Fluorescence Studies of Blood Plasma and Tumor Tissue of Men with Prostate Tumors," *Journal of Cancer Therapy*, **5**, 1021-1030 (2014) <http://dx.doi.org/10.4236/jct.2014.511107> (იმპაქტფაქტორიანი)
8. Bregadze VG, Melikishvili ZG, Giorgadze TG, "Nanophotonics and DNA: New approaches," Cornell University Library [arXiv:1406.7272v1](https://arxiv.org/abs/1406.7272v1) [physics.bio-ph], 2014
9. Bregadze VG, Melikishvili ZG, Giorgadze TG, "Photo-induced DNA-dependent Conformational Changes in Silver Nanoparticles," *Advances in Nanoparticles*, Vol. 2, 176-181(2013). DOI: [10.4236/anp.2013.22026](https://doi.org/10.4236/anp.2013.22026) (იმპაქტფაქტორიანი)
10. Giorgadze G, Melikishvili Z, "Three-Level Identical Atoms in One and Two-Mode Quantum Fields I: Internal Electric Dipole and Quadrupole Coupling in Single Atom by Single Mode," Proceedings of I. Vekua Institute of Applied Mathematics, Vol. 61-62, 46 - 54, 2012.
11. Bregadze VG, Melikishvili ZG, Giorgadze TG, "Photo-induced DNA-dependant Conformational Changes in Silver Nanoparticles," 2nd International Conference "Nanotechnologies" Nano-2012, Tbilisi, Georgia, September 19-21, 2012; pp. 60-67.
12. Bregadze VG, Khuskivadze TB, Melikishvili ZG, Jaliashvili ZV, Giorgadze TG, Lomidze MM, „Original Multifunctional Optical System for R&D in Bio-nano-photonics,” Basic Paradigms In Science And Technology Development For The 21st Century, Tbilisi, Georgia, September 19-21, 2012; pp. 134-140.
13. Bregadze VG, Melikishvili ZG, Giorgadze TG, Monaselidze JR, Jaliashvili ZV, Khuskivadze TB, "Point Defects in Double Helix Induced by Interaction of Silver Nanoparticles with DNA," Cornell University Library arXiv:1206.4816v1 [physics.bio-ph], 2012.
14. Bregadze VG, Melikishvili ZG, Giorgadze TG, "Conformational Transitions in Silver Nanoparticals: DNA and Photoirradiation," Cornell University Library arXiv:1206.4815v1 [physics.bio-ph], 2012.
15. Bregadze VG, Melikishvili ZG, Giorgadze TG, "Photodiffusion of Silver Nanoparticles on DNA and Medicine," Proceeding of International Scientific Conference "Physical Research Methods in Medicine", 27-29 October, 2011, Tbilisi. pp. 20-23.
16. Bregadze VG, Melikishvili ZG, Giorgadze TG, Monaselidze JR, Jaliashvili ZV, Khuskivadze TB, "Interaction of Silver Nanoparticles with DNA and Point Defects." Proceeding of International Scientific Conference "Physical Research Methods in Medicine", 2011, 27-29 October, Tbilisi. pp. 27-31.
17. Bregadze V, Melikishvili S, Melikishvili Z, Jaliashvili Z, Petriashvili G, Giorgadze T, "Interactions between Silver Nanoparticles and DNA-Intercalator Complexes," Publishing House "Universal", Tbilisi. The Procedeengs of the First International Conferece on Nanochemistry-Nanotechnologies. 2011, pp 136-140.
18. Jaliashvili Z, Medoidze T, Melikishvili Z, Gvamichava R, Mardaleishvili K, 'Optical Spectroscopy of Biological Tissue for Medical Diagnostics," Proceeding of International Scientific Conference "Physical Research Methods in Medicine". 2011, 27-29 October, 2011, Tbilisi. pp. 171-175.
19. Chigogidze T, Alibegashvili M, Ramishvili L, Medoidze T, Melikishvili Z, Jaliashvili Z, Chikovani N, Managadze L, Kotrikadze N, UP-1.093: "The Study of Blood Plasma and Tumor Tissue by Laser Induced Fluorescence in

- Patients with Prostate Tumors," *Urology*, Vol. 74, Issue 4, (Supplement 4A), S199 (2009). (იმპაქტურიანი)
20. Bregadze VG, Khutishvili IG, Melikishvili SZ, Melikishvili ZG, "Nickel (II) Ions Interaction with Polynucleotides and DNA of Different GC Composition," Los Alamos Quantum Physics electronic reprint archive paper: arXiv: 0912.4866v1 [physics.bio-ph] (24 Dec 2009).
 21. Giorgadze G and Melikishvili Z, "Atom-photon interactions with respect to quantum computation: three-level atom in two-mode field." Journal of Mathematical Sciences, Vol., 153, #2, 2008, 167 – 185. (იმპაქტურიანი)
 22. Jaliashvili Z, Medoidze T, Mardaleishvili KM, Ramsden JJ, Melikishvili Z, "Laser induced fluorescence model of human goiter," *Laser Physics Letters*, vol.5, № 3, pp. 217-219 (2008). (იმპაქტურიანი)
 23. Akhmeteli KT, Ekaladze EN, Jaliashvili Z, Medoidze T, Melikishvili Z, Merkviladze NZ, Papava MB, Tushurashvili PR, "Study of vitamin A distribution in rats by laser induced fluorescence," *Laser Physics Letters*. 2008წ. vol.5, № 6, pp. 471-475 (2008). (იმპაქტურიანი)
 24. Jaliashvili Z, Medoidze T, Melikishvili Z, Merkviladze N, Tushurashvili P, "Optical Spectroscopy of Parotid Gland in Case of Adenopathy," *Georgian Medical News*, № 11(164), pp. 80-83 (2008). (იმპაქტურიანი)
 25. Giorgadze GK and Melikishvili ZG, "Control of atom-photon interactions in three-level system," in proceedings of Symposium on "Contemporary Mathematics and Its Applications", p. 14-16, September 17-21, 2007, Batumi, Georgia.
 26. Giorgadze GK, Melikishvili ZG, "Atom-photon interaction with respect to quantum computation: three-level atom in two-mode field." Los Alamos Quantum Physics electronic reprint archive paper number quant-ph\0604003 v1 (01 Apr 2006), accessible via the world wide web at <http://lanl.arxiv.org/abs/quant-ph/0604003>.
 27. Giorgadze G, Jaliashvili Z, Mardaleishvili KM, Medoidze T, Melikishvili Z, "Measurement of the abnormality degree in the biological tissue by the laser induced fluorescence," *Laser Physics Letters*, vol.3, № 2, pp. 89-91 (2006). (იმპაქტურიანი)
 28. L.E. Berdzenishvili and Z.G. Melikishvili, *Small Angle Light Scattering by Biological Objects*, Bulletin of the Georgian Academy of Sciences. 171, No 3, 2005, pp.46-48. (იმპაქტურიანი)
 29. L.E. Berdzenishvili and Z.G. Melikishvili, *Investigation of the biological objects by scattered waves*. Proceedings of Xth International Seminar/Workshop on Direct and Inverse Problems of Electromagnetic and Acoustic Wave Theory (DIPED-2005), September 12-15, 2005, Lviv, Ukraine, pp. 157-159.
 30. Z.V. Jaliashvili, T.D. Medoidze, Z.G. Melikishvili, K.M. Mardaleishvili, and J.J. Ramsden, *Real time noninvasive cancer diagnostics*. Los Alamos Physics/Medical Physics electronic reprint archive paper number physics/0502102 (22 Feb 2005), accessible via the world wide web at <http://lanl.arxiv.org/abs/physics/0502102>.
 31. G.K. Giorgadze, Z.V. Jaliashvili, T.D. Medoidze, Z.G. Melikishvili, S.Z. Melikishvili and G.M. Mrevlishvili, *Topology of DNA in bacteriophage*. Proceedings of International Seminar: Perspective of usage of bacteriophages preparations for prevention and treatment of infections caused by pathogenic and conditioned pathogenic microorganisms, 10-11 November, 2005, Tbilisi, Georgia, pp. 73-74.

32. Z.V. Jaliashvili, T.D. Medoidze, Z.G. Melikishvili, K.M. Mardaleishvili, and J.J. Ramsden, *Laser-excited fluorescence from normal and abnormal human thyroid cells: a pilot study.* Laser Physics Letters, vol.1, #10, 521-524 (2004). (იმპაქტ ფაქტორიანი)
33. T.D. Medoidze, Z.G. Melikishvili, G.A. Tsintsadze, in: Focus on Lasers and Electro-Optics Research, *Spectroscopy and Dynamics of Transitions in UV-Excited Tm³⁺:YLiF₄ Laser System*, Nova Science Publishers, New York. 2004.
34. T. D. Medoidze, Z. G. Melikishvili, *Ultraviolet and Visible Emission Cross-sections for Tm³⁺:YLiF₄ Laser System.* Laser Physics Letters #2, 2004, pp. 65-68. (იმპაქტ ფაქტორიანი)
35. A. Chanishvili, G. Chilaya, T. Medoidze, Z. Melikishvili, G. Petriashvili, G. Tsintsadze, *Optical Information Recording on a Luminescent Dye Doped Cholesteric Liquid Crystal Structure.* Proceedings of the Institute of Cybernetics, vol. 3, N1-2, 2004, pp. 259-263.
36. T.D. Medoidze, Z.V. Jaliashvili, Z.G. Melikishvili, G.A. Tsintsadze and M.F. Reid, *Branching ratios and radiative lifetimes for ³P₂, ³P₁, ³P₀ and ¹I₆ manifolds of Tm³⁺ in YLiF₄ crystal.* Bulletin of the Georgian Academy of Sciences. 167, No 3, 2003, pp.437-441. (იმპაქტ ფაქტორიანი)
37. T.D. Medoidze, Z.G. Melikishvili, A.G. Papashvili, G.A. Tsintsadze, T.I. Sanadze, Tm³⁺:YLiF₄ as an ultraviolet lasing system // in Technical Digest, International Quantum Electronics Conference IQEC/LAT 2002 (Moscow, Russian Federation, 2002), paper QMF7, p.239.
38. T.D. Medoidze, Z.G. Melikishvili, A.G. Papashvili, G.A. Tsintsadze. *Laser-Excited Ultraviolet Fluorescence in Tm³⁺:YLiF₄.* Laser Physics, Vol. 11, No 12, 2001, pp.1262-1269. (იმპაქტ ფაქტორიანი)
39. D. Buchsianidze, Z. Jaliashvili, T. Medoidze, Z. Melikishvili, A. Papashvili, T. Sanadze, G. Tsintsadze. *Absorption and Luminescence Spectra of Tm³⁺ Doped YLiF₄ Crystal: ¹I₆ and ³P_{0,1,2} Levels.* Bulletin of the Georgian Academy of Sciences, 164, No 1, 2001, pp. 41-44. (იმპაქტ ფაქტორიანი)
40. T.D. Medoidze, Z.G. Melikishvili, A.G. Papashvili, G.A. Tsintsadze. *Laser-excited Fluorescence in Tm³⁺:YLiF₄.* Prepublication Series for Coherent Optics. Institute of Cybernetics of Georgian Academy of Sciences. IC preprint # 07-2000, pp. 1-29.
41. V.I. Zhekov, G.G. Asatiani, Z.G. Melikishvili, G.A. Tsintsadze, T.I. Sanadze, T.D. Medoidze, G.I. Petriashvili and A.G. Papashvili. *Absorption Spectra and Selective Excitation of Y₃Al₅O₁₂:Tm³⁺ and YLiF₄: Tm³⁺ Laser Systems.* Laser Physics, Vol. 10, No 2, 2000, pp. 532-539. (იმპაქტ ფაქტორიანი)
42. M. I. Dzhibladze, Z. G. Melikishvili, and L. E. Berdzenishvili. *Quasi-cw Laser-Produced Plasma Generated by a Train of Giant Pulses on the Surface of a Solid Target.* Laser Physics, Vol. 10, No 3, 2000, pp. 727-729. (იმპაქტ ფაქტორიანი)
43. M. I. Dzhibladze, Z. G. Melikishvili, and V. Bykov. *The Interaction of Photon Clusters with Matter.* Laser Physics, Vol. 10, No 3, 2000, pp. 730-732. (იმპაქტ ფაქტორიანი)
44. V.I. Zhekov, G.G. Asatiani, T.D. Medoidze, Z.G. Melikishvili, G.A. Tsintsadze, A.G. Papashvili. *Spectra and Luminescence Dynamics of Y₃Al₅O₁₂:Tm³⁺ and YLiF₄: Tm³⁺ Laser Systems.* Laser Physics, Vol. 10, No 2, 2000, pp. 532-539. (იმპაქტ ფაქტორიანი)
45. T. Medoidze, Z. G. Melikishvili, A.G. Papashvili, G.A. Tsintsadze. *Spectroscopic Properties and Luminescence Dynamics from ¹D₂, ¹I₆ and ³P_{0,1,2} Levels of Tm³⁺ Doped YLiF₄ Crystals.* Georgian Academy of Sciences. Proceeding IC Vol. 1, No 1-2, 2000, pp. 150-159.
46. T. Medoidze, Z. G. Melikishvili, G.A. Tsintsadze. *Quantum Dynamics of Qubit with Polarization Switch.* Georgian Academy of Sciences. Proceeding IC Vol. 1, No 1-2, 2000, pp. 160-163.

47. G. Asatiani, V. Zhekova, Z. Melikishvili, G. Tsintsadze, T. Sanadze, T. Medoidze. *On Possibility of YAG:Tm³⁺ Anti-Stokes Laser Operation.* Bulletin of the Georgian Academy of Sciences, 160, No 1, 1999, pp. 70-73. (იმპაქტ ფაქტორიანი)
48. M. Dzhibladze, Z. Melikishvili, L. Berdzenishvili, T. Sanadze. *Quasicontinuous Laser Plasma in The Process of Interaction of Train of Giant Pulses with Solid Target.* Bulletin of the Georgian Academy of Sciences, 160, No 1, 1999, pp. 66-68. (იმპაქტ ფაქტორიანი)
49. M. Dzhibladze, Z. Melikishvili, V. Bykov, T. Sanadze. *The Interaction of Photon Cluster with Matter.* Bulletin of the Georgian Academy of Sciences, 160, No 2, 1999, pp. 66-68. (იმპაქტ ფაქტორიანი)
50. O. Nemsadze, G. Asatiani, Z. Melikishvili, Z Chichua, M. Eradze. *Plasmatic Therapy in Maxillofacial Surgery.* International Journal of Oral & Maxillofacial Surgery, Supplement No.1, Vol. 28, 1999, pp.103. (იმპაქტ ფაქტორიანი)
51. V.I. Zhekova, G.G. Asatiani, G.A. Tsintsadze, Z.G. Melikishvili. *A Selectively Pumped Y₃Al₅O₁₂:Tm³⁺- Crystal (³F₄ → ³H₅) Laser.* Laser Physics, Vol. 8, No 2, 1998, pp. 955-938. (იმპაქტ ფაქტორიანი)
52. M.I. Dzhibladze, Z.G. Melikishvili, S.D. Uchaneishvili. *Lasertherapy by Noncoherent Light Field of Radiation,* Biomedical Sciences Instrumentation, **34**, 1997, pp.235-239. (იმპაქტ ფაქტორიანი)
53. M.I. Dzhibladze, Z.G. Melikishvili. *The Interaction of the Optical Photon Clusters with Matter.* Proceedings of the 7th International Conference on Multiphoton Processes (ICOMP VII), September 30 – October 4, 1996. Garmisch-Partenkirchen, Germany. 3 p.
54. Z. Melikishvili, E. Teplitsky. *On the Theory of Nonlinear Photoionization of Atoms.* Bulletin of the Georgian Academy of Sciences, 150, No 2, 1994, pp. 247-252. (იმპაქტ ფაქტორიანი)
55. Z.G. Melikishvili, E.S. Teplitsky. *Theory of Nonlinear Interaction of Atoms with High Intensity Laser Pulses.* Multiphoton Processes. Ed.s D.K. Evans & S.L. Chin, World Scientific (Singapore, New Jersey, London, Hong Kong), 1993, pp. 111-113.
56. Z.G. Melikishvili, D. T. Alimov, F.A. Ilkov. *Polarization dependence of direct three-photon ionization for Ca, Sr and Ba atoms,* J. Phys. B: At. Mol. Opt. Phys. **24**, 1991, pp. 1949-1952. (იმპაქტ ფაქტორიანი)
57. Z. Melikishvili, E Teplitsky, I Kuldjanishvili. Classical Model of Nonlinear Interaction of Electromagnetic Field with the Space Limited Plasma Medium. Bulletin of the Academy of the Georgia, 1991, Vol. 143, No 3, pp. 257-260. (იმპაქტ ფაქტორიანი)
58. მ ჯიბლაძე, ზ. ელიძიშვილი. უნიკალური თუ არა ჩვენი დედამიწა? მეცნიერება და ტექნიკა 1990, No 12, გვ. 52-55.
59. V.P. Krainov, Z.G. Melikishvili. *Dependence of the probability of the direct process of atomic multiphoton ionization on the polarization of the radiation,* Optics and Spectroscopy, Volume 65, Issue 4, October 1988, pp.579-580. (Optics and Spectroscopy - An English translation of the journal, Optika i Spektroskopiya). (იმპაქტ ფაქტორიანი)
60. MI Dzhibladze, SK Isaev, ZG Melikishvili, ZG Esiashvili. Spectral Characteristics of a Fiber Glass Neodymium Laser. Soviet Journal of Quantum Electronics, Vol. 16, No 6, pp. 832-833. (იმპაქტ ფაქტორიანი)