



CURRICULUM VITAE

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EDUCATION: Tbilisi Physical and Mathematical School, 1963-1973.
Graduated from the Tbilisi State University, 1978, Diploma T-1 N 170485 (M.D) in Mathematics.
Post graduate study in I. Vekua Institute of Applied Mathematics, 1978-1980.
Ph.D. (Candidate of Sciences) in Mathematical Physics, Tbilisi State University, 1986 (Diploma KD N 005774)
Thesis:“ On the Dirichlet Problem for the Laplace Equation in the stripe with Cuts”. (Under supervision of prof. Andrew Bitsadze).
SPECIALITY: Mathematical Physics
EMPLOYMENT: 1980 – 1990 - Junior Scientific Researcher at VIAM
1990 – 1997 - Scientific Researcher at VIAM.
1997 – 2008 - Senior Scientific Researcher at VIAM. and lecturer at the faculty of Exact and Natural Sciences
2009 -to present- Scientific Researcher at VIAM.
CURRENT POSITION: Scientific Researcher and Research Director of the GNSF project “Investigation of the influence of different physical fields on the periodic and quasi-periodic structures” (project N 08_581_3_395) at VIAM

RESEARCH INTERESTS: Linear and nonlinear problems of Mathematical Physics, singular integral equations.

HONORES: Ph.D. of Physical and Mathematical Sciences (1986),
Member of AMS and SIAM

PUBLICATIONS

1. On One Property of Integral of Volume Potential Type. Trudi I.Vekua Inst. Prikl. Matem., 1980, Vol.7, pp.140-146 (in Russian).
2. On Dirichlet Problem for the Laplace Equation in Stripe with two cuts, Soobshch. Acad. Nauk. GSSR, , 1984, vol. 116, N 2, pp. 57-60 (in Russian).
3. On Dirichlet Problem for the Laplace Equation in Stripe with anumerable cuts, Soobshch. Acad. Nauk. GSSR, 1984, vol. 116, N 3, pp.466-471 (in Russian).
4. On Dirichlet Problem for the Laplace Equation in Stripe with three cuts. Trudi I.Vekua Inst. Prikl. Matem.,.1984, Vol. 2, pp. 339-345 (in Russian).
5. On Dirichlet Problem for the Laplace Equation in Stripe with cuts. Tbilis. Gos. Univ., Inst.Prikl. Matem., Tbilisi University Press, Tbilisi, 1985, 75 p. (in Russian).
6. On Dirichlet Problem for the Laplace Equation in Stripe with cracks. Trudi I.Vekua Inst. Prikl. Matem., Tbilisi, 1985, Vol. 1, N1, pp.210-213 (in Russian).
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7. On one system of singular integral equations , Rep. Enlarged Sess. Sem. I. Vekua Inst. Appl. Math., Tbilisi, 1987, Vol. 19, pp. 174-185 (in Russian).
8. On one plane problem of wave theory . Rep. Enlarged Sess. Sem. I. Vekua Inst. Appl. Math., Tbilisi, 1989, Vol. 4, N.1, pp.120-123. (in Russian).
http://www.viam.science.tsu.ge/enl_ses/vol4_1.htm
9. On the nonlinear plane boundary value problem, Rep. Enlarged Sess. Sem. I. Vekua Inst. Appl. Math., Tbilisi, 1995, vol.10, N 1, pp. 46-48.
http://www.viam.science.tsu.ge/enl_ses/vol10_1.htm
10. On one singular integral equation with the doubly periodic kernel. Proc. of the Symposium Dedicated to the 95-th Birthday Anniversary of V. Kupradze, Tbilisi, pp.80,1998.
11. The inversion of the Cauchy integral taken over a union of a countable number of segments, Bull. Georgian Academy of Sciences., 2000, vol. 162, N 1, pp. 22-25.
(<http://www.rmi.acnet.ge/moambe>)
12. On Stokes nonlinear integral wave equation, in Integral Methods in Science and Engineering (editors B. Bertram, C. Constanda, A. Struthers), CHAPMAN&HALL/CRC, Research Notes in Mathematics Series, 2000, pp. 200-204. (<http://crcpress.com>).
13. On one boundary value problem for doubly-periodic analytic functions. Rep. Enlarged Sess. Sem. I. Vekua Inst. Appl. Math., Tbilisi, 2001, vol. 16, N 1-3, pp. 12-16.
http://www.viam.science.tsu.ge/enl_ses/vol16_1-3/vol16.htm
14. On the singular integral equation with the doubly quasi-periodic kernel, Rep. Enlarged Sess. Sem. I. Vekua Inst. Appl. Math., Tbilisi, 2002, vol. 17, N 1, pp. 9-16.
http://www.viam.science.tsu.ge/enl_ses/vol17_1-2/vol17.htm

15. On linear conjugation problem for the sectionally-holomorphic doubly quasi-periodic functions. Rep. Enlarged Sess. Sem. I. Vekua Inst. Appl. Math. Tbilisi, 2003, vol. 16, N 1-2, pp. 23-27. http://www.viam.science.tsu.ge/enl_ses/vol18_1-2/vol18.htm
16. Inversion of the Cauchy integral taken over the doubly periodic line, Georgian Math. J., 2003, vol. 10, N 1, pp.133-144. <http://www.jeomj.rmi.acnet.ge/gmj/vol12>
17. The Cauchy integrals taken over the doubly periodic line and boundary value problems connected with them. Proc. of I. Javakhishvili Tbilisi State University, 2002-2003, vol. 44, pp. 45-52.
18. On linear conjugation problems with the doubly-periodic jump line, Proc. A. Razmadze Math. Inst. 2004, vol.136, pp. 63-84. (<http://www.rmi.acnet.ge/proceedings>).
19. On linear conjugation problem with the doubly-periodic jump line (the case of open arcs), Georgian Math. J., 2005, vol. 12, N3, 461-474., <http://www.jeomj.rmi.acnet.ge/gmj/vol12>.
20. On Effective Solutions of Boundary Value Problem for the periodic analytic functions in the domains of special types, Bull. Georgian Academy of Science, 2005, vol. 172, N 1, pp. 30-32, (<http://www.rmi.acnet.ge/moambe>).
21. On a problem $\Phi^+ + \Phi^- = \varphi$ for the doubly quasi-periodic functions, Bulletin of TICMI, Tbilisi, 2005, Vol.9, pp.1-5. <http://www.emis.de/journals/TICMI/blt/bulletin.htm>
22. On Effective Solutions of Boundary Value Problem for the periodic analytic functions in the plane with the periodic cuts, Bull. Georgian Academy of Science., 2005, vol.172, N 2, pp.50-52. (<http://www.rmi.acnet.ge/moambe>).
23. On the Cauchy integral taken over the infinite line. Rep. Enlarged Sess. Sem. I. Vekua Inst. Appl. Math., Tbilisi, 2006, N 21, pp.86-89. http://www.viam.science.tsu.ge/enl_ses/vol21/khatiashvi.pdf
24. On some new representations of holomorphic functions in latticed domains. Proc. of the International Conference dedicated to I. Vekua, *Appl. Math. Inform. Mech.*, Vol. 12, No. 2, 2007, pp. 87-97, http://www.viam.science.tsu.ge/Ami/2007_1/Khatiashvili.pdf.
25. On the singular integral equation with the Weierstrass kernel. J. Complex Variables and Elliptic Equations, Taylor & Francis, 2008, vol. 53, N 10, pp. 915-943.
26. On One Non-Linear Boundary Value Problem for Holomorphic Functions. Rep. Enlarged Sess. Sem. I. Vekua Inst. Appl. Math., Tbilisi, 2009, Vol.34, pp.40-44.
27. The Conformal Mapping Method for the Helmholtz Equation. Integral Methods in Science and Engineering, Birkhauser, Vol. 1, pp. 173-178, 2010.
28. Some Finite-Difference Schemes for the Axi-Symmetric Problem. O. Komurjishvili, Z. Kutchava, V. Akhobadze, Proc. of Fifth Congress of Mathematicians of Georgia, Batumi, pp.106-107, 2010.
29. On the System of Integral Equations Connected with the Schrodinger Equation., Rep. Enlarged Sess. Sem. I. Vekua Inst. Appl. Math., Tbilisi, TSU Press, 2009-2010, Vol.59-60, pp.30-34. <http://www.viam.science.tsu.ge/publish/proceedings/vol59-60/khatiashvili.pdf>
30. On Approximate Solution of Three Dimensional Mixed Boundary Value Problem of Elasticity Theory and Some of Its Applications to Nanostructures. Papukashvili A., Khatiashvili N., Bolkvadze J., Rep. Enlarged Sess. Sem. I. Vekua Inst. Appl. Math., Tbilisi, 2009-2010, Vol.59-60, pp.35-42. <http://www.viam.science.tsu.ge/publish/proceedings/vol59-60/papukashvili.pdf>
31. On the Mathematical Model of Gas Exchange in a Human Capillary By Means of a Single Erythrocyte. Thesis of ICFD CONF., Univ. of Reading, ANSYS, 2010, pp. 160-161.

32. On One Mathematical Model of Electron Transport in a Carbon Nanostructures. N.Khatiashvili, V. Akhobadze, T. Makatsaria, Proc. Of the Conf. NANO-2010, Tbilisi, St. Andrew University, 2010, pp. 204-208.
33. On the 3D Helmholtz Equation in a Periodic Domains with Cuts. (with A.Papukashvili, O.Komurjishvili, M. Tevdoradze), Book of Abstracts of I International Conference of GMU, Sep. 12-19, 2010, Batumi, Rustaveli State University, pp. 82-83.
34. On the Mathematical Model of Vascular Endothelial Growth Connected with Tumor Proliferation, N. Khatiashvili, Chr. Pirumova, V. Akhobadze, *Proceedings of World Academy of Science, Engineering and Technology*, 436,79, Paris, 2011, pp. 545-548.
35. On The Numerical Treatment Of 3D System Of Partial Differential Equations Connected With The Schrodinger Equation and Some Applications To the Particle Transport At the Cubical Latticed Nanostructures, N. Khatiashvili, R. Shanidze, O. Komurjishvili, Z. Kutchava., *Appl. Math. Inform. Mech.*, Vol.14 No.1, TSU Press, 2010, pp.11-18. http://www.viam.science.tsu.ge/Ami/2010_2/khatiashvili_AMIM_2010_2.pdf
36. On Numerical Solution of Axisymmetric Reaction-Diffusion Equation and Some of its Applications to Biophysics, N. Khatiashvili, O. Komurjishvili, Z. Kutchava, K. Pirumova, *Appl. Math. Inform. Mech.*, Vol.15, No.1, TSU Press, 2011, pp. 36-43. http://www.viam.science.tsu.ge/Ami/2011_1/khatiashvili_AMIM11.pdf
37. On the Nonlinear Schrodinger Type Equation., N. Khatiashvili, R. Shanidze, O. Komurjishvili, *International J. of Physics and Math. Sciences*, Vol 2, N1, 2012, pp. 206-213. www.cibtech.org/jpms.htm
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40. On some Effective Solutions of Stokes Axisymmetric Equation for a Viscous Fluid, N. Khatiashvili, K. Pirumova, D. Janjgava, *Proceedings of World Academy of Science, Engineering and Technology*, ISSUE 79, London, 2013, pp. 690-694.
41. On the approximate solution of one non-linear integral equation, Rep. Enlarged Sess. Sem. I. Vekua Inst. Appl. Math., Tbilisi, TSU Press, 2012, Vol.26, pp.29-33. http://www.viam.science.tsu.ge/enl_ses/vol26/khatiashvili.pdf
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43. On the Numerical Treatment of the Axi-symmetric Turbulent-Diffusion Equation, N. Khatiashvili, O.Komurjishvili, Z. Kutchava, *Appl. Math. Inform. Mech.*, TSU Press, 2013, Vol. 18, N2, pp.55-61. http://www.viam.science.tsu.ge/Ami/2013_1/Nina_khatiashvili_AMIM_2013.pdf
44. On the Hexagonal Quantum Billiard, Reports Sem. I. Vekua Inst. Appl. Math., Tbilisi, 2014, Vol.40, pp.14-27. <http://www.viam.science.tsu.ge/old/report/vol40/khatiashvili.pdf>

45. Cancer Proteins and Blood Flow. (with K. Pirumova, V. Akhobadze, M. Tevdoradze), Abstracts of VI International Conference of the Georgian Mathematical Union, July 8-12, 2015, Batumi, Georgia, 112.
46. On Some Pathologies Connected with the Crystallization Process at the Human body (Gallstones Formation), (with Akhobadze V., Gamrekeli D., Pirumova ,K.),Rep. Enlarged Sess. Sem. I. Vekua Inst. Appl. Math., Tbilisi, 2015, Vol. 29,pp. 1-4.
http://www.viam.science.tsu.ge/enl_ses/vol29/akhobadze.pdf
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48. On Some Aspects of Quantum Biophysics, (with Gamrekeli D, Akhobadze V.), Rep. Enlarged Sess. Sem. I. Vekua Inst. Appl. Math.Tbilisi, 2015, vol. 29, pp.38-41.
http://www.viam.science.tsu.ge/enl_ses/vol29/gamrekeli.pdf
49. On the Stokes Nonlinear Waves in 2D. Proceedings of the WSEAS Int. conference Mathematical, Computational and Statistical Sciences (MCSS'16), Barcelona, 14-16 Feb., 2016.

MONOGRAPHY

On Dirichlet Problem for the Laplace Equation in Stripe with cracks. Tbilis. Gos. Univ., Inst.Pricl. Mat., Tbilisi, 1985, 75 p. (in Russian).

PARTICIPATION IN CONFERENCES AND OTHER FORUMS

1. International Symposium Dedicated to the 90-th Birthday Anniversary of I. Vekua, Tbilisi, 1997, p.137. Presentation: On one nonlinear integral equation.<http://www.rmi.acnet.ge/DEMPH>.
2. International Symposium Dedicated to the 95-th Birthday Anniversary of V. Kupradze, Tbilisi, 1998, Presentation : On one singular integral equation with the doubly periodic kernel. <http://www.rmi.acnet.ge/DEMPH>.
3. International conference on Integral Methods in Science and Engineering. Michigan Technological University, Houghton, Michigan, USA, 1998. Presentation: On Stokes nonlinear integral wave equation.
4. International conference on Boundary Integral methods. University of Bath, Bath, UK, 2000. Presentation: On singular integral equation with the doubly-periodic kernel.
5. Pedagogical Workshop on Geometry and Topology of Fluid Flows. University of Cambridge, Isaac Newton Institute for Mathematical Sciences, Cambridge, UK, 2000. Presentation : On conformal mapping method in hydrodynamics.
6. Conference of Georgian Mathematicians. Sukhumi Branch of Tbilisi State University, 2001. Presentation: On Inversion of the Cauchy integral.
7. Meeting of Georgian Mathematical Union. Tbilisi Iv.Javakhishvili State University , Tbilisi, 2001, Presentation: Inversion of the Cauchy integral taken over the doubly-periodic line

8. International Symposium Dedicated to the 100-th Birthday Anniversary of V. Kupradze, Tbilisi, 2003, Presentation: On Linear conjugation problem for the sectionally-holomorphic doubly periodic functions.
9. Meeting of Georgian Mathematical Union. A. Razmadze Mathematical Institute, Tbilisi, 2005, Presentation: On boundary value problems for the sectionally-holomorphic periodic functions.
10. 95th Statistical Mechanics International Conference. Rutgers University (USA), May 7-9, 2006,: On two Dimensional Fluid Flow Problem with a free Boundary, (<http://www.math.rutgers.edu>)
11. International Symposium Dedicated to the 90-th Birthday Anniversary of I. Vekua, Tbilisi, 2007, Presentation: On some new representation of analytic functions in the latticed domains.
12. International conference on Integral Methods in Science and Engineering, University of Santander, Spain, 2008, Presentation :On the conformal mapping method for the Helmholtz Equation.
13. 100th Statistical Mechanics International Conference, Rutgers University (USA), 2008 , Presentation : On 2D quantum billiard.
14. XVI International Congress on Math. Physics. Aug 3-8, 2009, Prague, Presentation: On the Hexagonal Quantum Billiard.
15. Fifth Congress of Mathematicians of Georgia, Oct. 9-12 , 2009, Batumi/Kutaisi, Presentation: On Some Finite Difference Schemes for the Axy-Symmetric Problem.
16. International Conference: Physics At The Future Colliders 2009, Grena-2009, Oct. 12-18, Tbilisi, Presentation: On the Approximate Solution of Particle Transport Equation, N. Khatiashvili, R. Shanidze (<http://pfc2009.grena.ge>).
17. International Conference on Nanochemistry and Nanotechnologies, NANO2010, March 23-24, 2010, Tbilisi, St. Andrew University. Presentation: On the Mathematical Model of Electron Transport at Carbon Nanostructures.
18. International Conference on Numerical Methods for Fluid Dynamics, (ICFD), 2010, Apr. 12-16, Univ. of Reading, UK. Presentation: On the Mathematical Model of Gas Exchange in a Human Capillary By Means of a Single Erythrocyt.
19. TIKMI Workshop on Boundary Value Problems for Partial Differential Equations, 23-24 June, 2010, TSU. Presentation: On the periodic problems in 3D.
20. I International Conference of GMU, Sep. 12-19, 2010, Batumi, Rustaveli State University, Presentation: On the 3D Helmholtz Equation in a Periodic Domains with Cuts.
21. Third International Conference of AMITANS, 2011, June 20-25, Bulgaria, Presentation: On the Mathematical Model of Cancer Growth in Connection to the new Capillary Network Formation at the Human Brain, <http://eacAmiTans.org>
22. WASET International Conference on Biomathematics, 27–29 july, Paris, 2011. Presentation: On the Mathematical Model of Vascular Endothelial Growth Connected with a Tumor Proliferation.

23. TIKMI Workshop: 1D Nanostructures - Theory and Technology, 13-14 September, 2011, TSU, Presentation: On Some Mathematical Models of Nanostructures.
24. International Conference Dedicated to the 70-th Anniversary of the Georgian National Academy of Sciences, Sep. 15-19, 2011, Batumi, Rustaveli State University, Presentation: On the Spectrum of the Helmholtz Equation for the hexagonal type Stripe.
25. International conference on Mathematical Modeling of Environment Pollution Problems and Assessment of Risk Factors, 14-15 December, 2011, Tbilisi, Georgia, Presentation: On the Mathematical Model of Gas Exchange at the Human Brain and Neurodegenerations Mediated by Toxins.
26. II Annual Meeting of the Georgian Mechanical Union, Dec. 15-17,2011, Tbilisi, VIAM, Presentation: On the Approximate Solution of 3D Mixed Boundary Value Problem of the Elasticity Theory and Some of Its Applications to Micromechanics.
27. TIKMI Workshop: Applications of Mathematics in Biology and Medicine, 19-20 December, 2011, Tbilisi, Georgia. Presentation: On the Oxygen Diffusion Process at the Human Brain.
28. III International Conference of GMU, Sep. 12-19, 2012, Batumi, Rustaveli State University, Presentation: On the Solution of one Non-Linear Elliptic Equation .
29. International Conference Physics and Mathematics of the nonlinear Phenomena,17-29 June, 2013,University of Sallento, Italy. Presentation: On some effective solutions of the non-linear Schrodinger equation
30. World Congress on Engineering, 3-5 July, 2013, Imperial College, London. Presentation: On the Stokes Flow over Ellipsoidal Type Bodies.
31. International Conference on “Modern Problems in Applied Mathematics”, VIAM-45, TSU-95,4-9 Sep., 2013, Iv.Javakhishvili Tbilisi State University. Presentation: On the Mathematical Model of Artificial Crystal Growth.
32. IV International Conference of GMU, Sep. 9-15, 2013, Batumi, Rustaveli State University, Presentation: On the Stokes Flow over Axi-Symmetric Bodies with the Changeable Boundary.
33. Caucasian Mathematics Conference CMC 1& V International Conference of GMU, Sep. 8-12, 2014, Batumi, Rustaveli State University, Presentation: On the mathematical model of growth of tumors of different forms.
34. VI International Conference of GMU, July 8-12, 2015, Batumi, Rustaveli State University, Presentation: Cancer Proteins and Blood Flow.
35. Joint Mathematics Meetings, Jan.10-13, 2015, San Antonio. Presentation: On the Quantum Billiard in the Hexagonal Type Areas.
36. [SIAM Conference on Analysis of Partial Differential Equations \(PD15\)](#), held December 7-10, 2015, at the DoubleTree Resort by Hilton Paradise Valley – Scottsdale, Scottsdale, Arizona, USA. Presentation: On the Nonlinear Elliptic Equation Connected with the Solitary Waves.