

Malkhaz Berezghiani

Scientific-technical papers:

139 papers in the fields of Chemical engineering Science, Biofuel Technologies, Alternative/Renewable Energy Sources Development, Chemical Cybernetics, Automation and Electronics. 13 Inventions in the same fields. Some relevant scientific publications are listed below:

1. Ya.N. Tavartkiladze, M.G. Berezghiani – mathematical Modelling of the Process of Batch Crystallization According to the Coalescence Phenomenon. Bulletin of the Academy of Sciences of the Georgian SSR. 115, N5, 1984, pp. 317-320. (Rus)
2. Ya.N. Tavartkiladze, M.K. Eristavi, M.G. Berezghiani – The Method of Prognosis of Duration of Crystallization Process from Solutions. Proceedings of the Academy of Sciences of the Georgian SSR, Chem. Series, 10, N3, 1984, pp. 223-225. (Rus)
3. Berezghiani M.G., Tavartkiladze Ya. N. - Identification of the kinetics of crystallization processes from melts. Theses of the All-Union conference-seminar "Methods of Cybernetics in Chemistry and Chemical Technology", Grozny, 1984, p. 34. (Rus)
4. Berezghiani M.G. - Mathematical modeling of crystallization from melts. Abstracts of the conference "Science-Practice", Tbilisi, "Metsniereba", 1984, pp.138-139: (Rus)
<http://www.mediafire.com/?9x19b252b49nx12>
5. N.Baleshiashvili, M.Berezghiani, Ya.Tavartkiladze – Identification of Electro-membrane Processes Kinetics on Base of the Mathematical Model. Proceedings of USSR all-Union Conference «Application of Electrodialysis in membrane-sorption Technology of Purification and Separation of substances, Batumi 1984», Cherkassy, 1984, pp. 98-99. (Rus)
6. M.Berezghiani and others – Modelling of Optimal temperature Regime for the Reversible Chemical Reactions. Proceedings of the Academy of Sciences of Georgia, Chemical Series. 1985, v.11, No 2, pp. 142-145. (Rus)
7. Berezghiani M.G. - Mathematical modeling of kinetics of crystallization of multicomponent systems. Theses of the conference dedicated to the 40th anniversary of the victory in the Great Patriotic War, Academy of Sciences of the Georgian SSR, Tbilisi, "Metsniereba", 1985, p.13: (Rus)
<http://www.mediafire.com/?4c8eyadrc1yjjj>
8. M.Berezghiani, Ya.Tavartkiladze – Method of Identification of Flow Structures in Devices of a Various Construction. Teor.Osn.Khem.Tekhnol. 1986, v.20, No 2, pp. 272-273. (Rus)
9. M.Berezghiani and others. – The Computing Device for Processing of Response Curves. USSR Inventor's Certificate 1385857, cl. G 06 G 7/18, (Secret), 1986, 4p. (Rus)
10. M.Berezghiani and others. – The Computing Device for Objects Image Processing. USSR Inventor's Certificate 1484156, cl. G 06 K 9/36, (Secret), 1987, 8p. (Rus)
11. V.Babakhanov, M.Berezghiani and others. – The Method of Automatic Control of Phases Chemical Conversion in Countercurrent packed Reactor. USSR Inventor's Certificate 1478433, cl. B 01 J 8/02, G 05 D 27/00, (Secret), 1987, 4p. (Rus)
12. Berezghiani M.G., Razmadze Z.Sh. - Mathematical modeling of the temperature field in a tubular reactor. Abstracts of the conference "Science and Technological Progress", Tbilisi, 1986, p.61-62.(Rus)
13. M.Berezghiani, Ya.Tavartkiladze – The Converter of a Complex Impedance. USSR Inventor's Certificate 1385085, cl. G 01 R 27/00, Bulletin No 12, 1988, 3p. (Rus)

14. M.Berezhiani and others. – The Method of Automatic Control of Chemical Reaction Zone Location in Reactor. USSR Inventor's Certificate 1529514, cl. B 01 J 19/00, G 05 D 27/00, (Secret), 1988, 3p.(Rus)
15. M.Berezhiani and others. – The Computing Device for Signals Front Analysis. . USSR Inventor's Certificate 1554641, cl. G 06 G 7/02, (Secret),1988, 5p. (Rus)
16. M.Berezhiani and others. – The Method of Automatic Control of Product Takeoff from Countercurrent Packed Isotopes Separation Column. USSR Inventor's Certificate 1619476, cl. B 01 D 3/42, G 05 D 27/00, (Secret),1988, 4p. (Rus)
17. Babakhanov V.R., Berezhiani M.G., Gvedashvili G.A. - Automated workplace for research of technological processes of separation of stable isotopes in packed columns. Abstracts of the report on VI. meeting on automated control systems "On the progress of the implementation of the SPECTR program", Leningrad, October 26-29, 1988, Moscow: 1988, p.133-134. (Rus)
18. Babakhanov V.R., Berezhiani M.G., Stratiev D.A.- Analog commutator for the automated system of tolerant control of technological parameters. Information sheet on scientific and technical achievements N 88-2299, heading 50.09.41, M .: VIMI, 1988, 2p. (Rus)
19. M.Berezhiani, and others. – The Investigation of a Flow Structure in the Packed Column. Proceedings of the Academy of Sciences of Georgia, Chemical Series. 1989, v.15, No 3, pp. 215-220. (Rus)
20. M.Berezhiani and others. – Method of Calculation of Chemical Reaction Products Fractional Conversion. Proceedings of Georgian Polytechnic Institute «Theoretical and Experimental Investigation in Chemical Engineering», Tbilisi, 1989, No 1 (343), pp. 63-66. (Rus)
21. M.Berezhiani, Ya.Tavartkiladze – Mathematical Modelling of Kinetics of Melt Crystallization Processes. Proceedings of the Academy of Sciences of Georgia, Chemical Series. 1992, v.18, No 2, pp. 138-142. (Rus)
22. M.Berezhiani and others – System for investigation of Solid Materials thermophysical properties. USSR Inventor's Certificate 1793347, cl. G 01 N 25/18, Bulletin No 5, 1993, 4p. (Rus)
23. M.Berezhiani and others – Computer System for Radar Data Acquisition and Processing. Georgian Patent N 293, cl. G 01 S 13/95, Bulletin No 2, 1996, 7p. (Geo)
24. M.Berezhiani, B.Janjgava - Gas flowmeter. Georgian Patent N 400, cl. B 01 F 1/00, Bulletin No 3, 1996, 4p. (Geo)
25. T.Abzianidze, M.Berezhiani and others - Installation for Nitrogen-15 Isotope and Copper Sulfate Co-production. Georgian Patent N 421, cl. B 01 D 59/28, C 01 G 3/10, Bulletin No 9(35), 1998, 5p. (Geo)
26. M.Berezhiani, Ya.Tavartkiladze - Crystals Growth kinetics during countercurrent melt Crystallization process. Proceedings of Georgian Technical University, 1998, No 6(422), p. 30-35. (Rus)
27. Partskhaladze G.Sh., Berezhiani M.G., Chkhaidze B.Sh., Dudauro T.V. – Low-Power Engine Generator Operating on Biogas. Georgian Engineering News, 2002, No 4, pp. 92-96.
28. NATO Science for Peace Program Project SFP 973986: BIOREACTOR, 2003.
29. T. Aladashvili, M. Berezhiani, T. Dudauro, G. Partskhaladze, B. Chkhaidze – Biomass for Fuel Cells: Promising Option for Clean Energy Production. Georgian Engineering News, 2004, No 1, pp. 95-103.
30. T. Aladashvili, M. Berezhiani, B. Chkhaidze, T. Dudauro, M. Orjonikidze, G. Partskhaladze, V. Ugrehelidze – Fuel Cell Power from Biogas. Georgian Engineering News, 2004, No 4. pp. 57-61.

31. M.Berezhiani, T.Dudaury, N.Kalandadze, G.Partsckhaladze, Ya.Tavartkiladze, V.Ugrekheldidze - Computation of Packed Column for Ethanol Rectification. GEORGIA CHEMICAL JOURNAL, No 5(1), 2005, pp. 60-64. (Rus)
32. M. Berezhiani, D. Patarkalishvili, G. Patarkalisvili, L. Chankvetadze – Production of Paclitaxel from Yew Needles. Georgian Patent N P 3842, 03-07-2005, Cl C07D 305/14, Buletin N 1(197), 2006, pp. 13-14. (Geo)
33. Berezhiani M., Chachkhiani M., Dudaury T., Partsckhaladze G., Tsiklauri L., Ugrekheldidze V., Zakariashvili N. – Fermentation of Mechanically Pretreated Cellulostic Wastes with *Pleurotus Ostreatus*. PROCEEDINGS of the Georgian Academy of Sciences, Biological series B. Vol. 3, No. 2, 2005, pp. 33-36.
34. Partsckhaladze G.Sh., Chkhaidze B.Sh., Dudaury T.V., Berezhiani M.G., Kalandadze N.K., Ugrekheldidze V.D. – Prospects for Application of Stirling Engine Working on Two-phase Actuation Medium. Georgian Engineering News, , 2005, No 2. pp. 134-137.
35. Ugrekheldidze V.D., Dudaury T.V., Partsckhaladze G. Sh., Berezhiani M.G., Tsiklauri G.N., Metreveli B.G. Combined Production Of Methane And Hydrogen Through Two Phase Anaerobic Fermentation Of Organic Wastes. Theses of International Seminar: "From Ecological Research - to Ecological Technology", Russia, Cheliabinsk, A.Miller Library, 2006, pp. 133-137.
36. ISTC Project #G-827: ULTRA HIGH PURITY XENON, 2007.
37. ISTC Project #G-891: WASTELESS BIOTECHNOLOGICAL CYCLE FOR REPROCESSING MUNICIPAL WASTES, 2007.
38. T. Dudaury, M. Chachkhiani, G. Partsckhaladze, G. Tsiklauri, N. Zakariashvili, V. Ugrekheldidze, M. Berezhiani – Method for Production of Hydrogen and Methane by Two-stage Anaerobic Digestion of Biomasses. Georgian Patent N P 4369 , 04-13-2006, Cl. C12P 3/00; C01B 3/02; C02F 3/28; C02F 11/04. Buletin N 1(245), 2008, pp. 16-17. (Geo)
39. M.Berezhiani, T.Dudaury, G. partsckhaladze – Use of Biohydrogen in Low Temperature Fuel Cells. Proceedings of the Academy of Sciences of Georgia, Chemical Series. 2007, v.33, No 2, pp. 231-235. (Rus)
40. A. Turmanidze, M. Berezhiani, V. Servianov, T. Gergedava - Design of Distributed Process Control Systems Based on Programmable Logic Controllers. Proceedings of the International Scientific Conference "ITC'07 - Information Technologies in Control", Tbilisi, 10.10.2007-12.10.2007, Vol. 1, pp. 47-50. (Geo)
41. M. Berezhiani, I. Tavartkiladze – Mathematical Modelling of Chemical and Phase Conversion Processes Macrokinetiks. Proceedings of the International Scientific Conference "ITC'07 - Information Technologies in Control", Tbilisi, 10.10.2007-12.10.2007, Vol. 1, pp. 143-148. (Geo)
42. M. Berezhiani, A. Berejiani – Aspects of Ecological Justified Reprocessing of Madneuli Copper Concentrate in Georgia. Proceedings of the Academy of Sciences of Georgia, Chemical Series. 2008, v.34, No 2, pp. 193-196. (Geo)
43. T. Dudaury; G. Partsckhaladze; M. Berezhiani; L. Tsiklauri; B.Metreveli; N. Zakariashvili; A. Berezhiani – Perennial Grass –Silphium One of the Prosspective Energy Crops for Georgia. Proceedings of the Academy of Sciences of Georgia, Chemical Series. 2008, v.34, No 2, pp. 187-192. (Geo)
44. M.G. Berezhiani, T.V. Dudaury, N.G. Zakariashvili, B.G. Metreveli, A.M. Berejiani – The Use of Computer Data Asquisition System for Study of Waste Biomass Fermentation Process. Proceedings

- of the International Scientific Conference “IT 2008 - Information Technologies”, Tbilisi, 27.06.2008-28.06.2008, pp. 154-157. (Geo)
45. M.G. Berezhiani, M.Ya. Tavartkiladze, A.M. Berejiani – Computer Modelling of Heat Exchange Processes. Proceedings of the International Scientific Conference “IT 2008 - Information Technologies”, Tbilisi, 27.06.2008-28.06.2008, pp. 158-161. (Geo)
 46. M. Berezhiani, S. Shalamberidze, A. Berejiani - Mathematical Modelling of Melt Crystallization Kinetics. Proceedings of the International Scientific Conference “Material Science and Manufacturing Technology - MITECH 2009”, 25-26 June 2009, Prague, Czech Republic, pp. 20-25.
 47. Genadi Partskhaladze, Tamar Dudaui, Malkhaz Berezhiani, Ana Berezhiani, Besarion Metreveli, Tamar Svanidze - CO₂ BASED FREEZE-EXPLOSION METHOD FOR INCREASING HYDROLYSIS OF CELLULOSE. Proceeding of International Conference TAE2010 “Trends in Agricultural Engineering 2010”, Czech University of Life Sciences Prague, 7-10 September, Prague, Czech Republic, 2010, pp. 73-77. Collections of Abstracts, p. 112:
http://www.conference.cz/TAE2010/downloads/Abstracts_TAE_2010.pdf
 48. Dudaui T.B., Chachkhiani M.T., Berezhiani M.G. Partskhaladze G.Sh., Tsiklauri L.N., Ugrehelidze V.D., Zakariashvili N.G., Berejiani A.M. - Cellulosic Materials Processing by Chilling and Mechanical Milling Method. in Book “New Developments in Materials Science”, Chapter 17, Series: Materials Science and Technologies, Nova Sciences Publishers Inc., Hauppauge NY, USA, Pub. Date: 2011, ISBN: 978-1-61668-852-3.
https://www.novapublishers.com/catalog/product_info.php?cPath=23_29&products_id=14239
 49. Kvesitadze G., Partskhaladze G., Sadunishvili T., Dudaui T., Chachkhiani M., Berezhiani M., Ugrehelidze V., Tsiklauri G., Metreveli B., Zakariashvili N. - Environmentally friendly biorefinery for reprocessing non-presorted municipal solid wastes with production of energy and organic-mineral fertilizers including recovery of metals. Report on the 7th annual International New Exploratory Technologies Conference “NEXT 2010”, Turku, Finland, October 19-21, 2010, 27 p.:
 50. Berezhiani M.G. – Mathematical Modelling of Phase Transition Processes. Articles of International Scientific-Technical Conference “New Technologies in Modern Industry”, Tbilisi, Georgian Technical University, April 29-30, 2010, pp. 146-149.
 51. Berezhiani M., Chankvetadze L., Patarkalishvili D., Berejiani A. - Paclitaxel Production from Yew. Proceedings of Conference “Natural and Synthetic Bioactive Compounds”, Georgian National Academy of Sciences, Tbilisi, 30.03.2010, pp. 44-45. (Geo)
 52. Berejiani A.M., Berezhiani M.G., Dudaui T.B., Partskhaladze G.Sh., *Rukhadze T.K. - BIOFUEL FROM FOOD – PETROLEUM FROM CAVIAR? Proceedings of International Conference “Sustainable Development and Protection of Environment”, Tbilisi, Georgia, 10-12 November, 2010, pp. 45-48. (Geo)
 53. Berezhiani M., Turmanidze A. - Control Systems Engineering Based on Programmable Logic Controllers of Company GE Intelligent Platforms. Proceedings of International Conference “Information and Computer Technologies, Modelling, Control”, Tbilisi, Georgia, 1-4 November 2010, pp. 112-113. (Geo)
 54. Berezhiani M.G., Berejiani A.M., Dudaui T.B., Rukhadze T.K. - COMPUTER-BASED ENGINEERING OF FUEL ETHANOL DISTILLATION. Articles of International Scientific-Technical Conference “New Technologies in Modern Industry”, Tbilisi, Georgian Technical University, April 29-30, 2010, pp. 116-118. (Geo)

55. Turmanidze A.G., Berezhiani M.G. - Data Acquisition Modules vs. Chart Recorders. Articles of International Conference "Innovative Technologies and Contemporary Materials", Akaki Tsereteli State University, Kutaisi, Georgia, June 17-18, 2010, pp. 451-453. (Geo)
56. Berezhiani M. – Simulation of Melt Crystallization Kinetics. International Journal of Material Forming , 2011, No. 4, pp. 421-428; <http://dx.doi.org/10.1007/s12289-010-1016-5> ;
<http://www.springerlink.com/content/u55655185h7u3683>
57. Malkhaz Berezhiani - Investigation of Phase Transition Kinetics in Condensed Systems. Abstracts of International Scientific Conference "Modern Issues of Applied Physics", Georgian Technical University, Tbilisi, 30 March, 2011, pp. 12-13. (Geo)
58. M. Berezhiani, A. Turmanidze, T. Gergedava - HMI / SCADA CIMPLICITY engineering software package for simulation of technological processes and management systems. Abstracts of International Scientific Conference "Automated Control Systems and Modern Information Technologies". Georgian Technical University, Tbilisi, May 20-22, 2011, pp. 74-76. (Geo)
59. Berezhiani Malkhaz, Turmanidze Alex - development of control systems for isotope separation processes – Transactions of International Scientific Conference "Basic Paradigms in Science and Technology Development", Georgian Technical University, Tbilisi, September 19-21, 2012, pp. 150-154. (Geo)
60. ISTC Project #G-1624: BIOPROCESS FOR FUEL ETHANOL, 2012.
61. STCU Project #P-416: DEVELOPMENT OF TECHNOLOGY FOR THE PRODUCTION OF HIGH PURITY CRYSTALLINE BORON (LANL T2 215 GE), 2012.
62. L. Kokaia, I. Berdzenishvili, M. Berezhiani, A. Aphakidze, D. Kiknadze – Study of Forming and Corrosion Kinetics of Non-Nickel Single-Layer Glass Enamels. Journal of the Georgian Ceramists Association "Ceramics", 2(28). 2012, 1(29). 2013, pp. 141-145.
63. M. Berezhiani, S. Shalamberidze – Use of Stable Isotopes in Medicine. Proceedings of II Conference "Natural and Synthetic Bioactive Compounds", Georgian National Academy of Sciences, Tbilisi, November 25-26, 2013, pp. 49-51. (Geo)
64. M. Berezhiani, S. Shalamberidze - Experimental and Theoretical Investigation of Melt Crystallization Kinetics in Multicomponent Systems. International Conference "Innovative Technologies in Metallurgy and Materials Science", Tbilisi, Georgian Technical University, July 16-18, 2015, pp. 170-173.
65. M.G. Berezhiani, D.G. Kotrikadze - Computer Simulation of Fluid Flow Hydrodynamic Regimes. Publications of International Scientific-Practical Conference "MODERN ENGINEERING TECHNOLOGIES AND ENVIRONMENTAL PROTECTION", Akaki Tsereteli State University, Kutaisi, Georgia, 19-20.05.2016, Part II, pp. 612-615. (Geo)
66. M.G. Berezhiani, T.Sh. Gergedava - CONTROL SYSTEMS ENGINEERING FOR ISOTOPE SEPARATION PROCESSES. Abstracts of International Scientific Conference "Modern Researches and Their Use in Chemistry, Chemical Engineering and Related Fields". September 21-23 2016, Ureki, Georgia, p. 134.
67. M.G. Berezhiani, Y.K. Metreveli, A.M. Berezhiani - Materials of nuclear power and Madneuli copper ore - the potential of integrated technologies. Proceedings of IV Scientific Conference "Energy: Regional Problems and Development Opportunities", Akaki Tsereteli State University, Kutaisi, Georgia, 29.10.2016, pp. 236-240. (Geo)

68. M. Berezhiani, V. Piriashvili, A. Djaparidze – Production and Use of C-13 Isotope in Medical Diagnostics. Proceedings of III Conferense “Natural and Synthetic Bioactive Compounds”, Georgian National Academy of Sciences, Tbilisi, October 24-25, 2016, pp. 165-167. (Geo)
69. Sh. Andguladze, A. Berejiani, M. Berezhiani, G. Mchedlishvili - COMPUTER SIMULATION OF THE FLUIDIZED BED HYDRODYNAMICS IN GRANULAR BARITES REDUCTION PROCESS. Proceedings of the Academy of Sciences of Georgia, Chemical Series. 2017, v.43, No 1, pp. 38-40. (Geo)
70. M. Berezhiani, V. Ugrekhelidze, V. Piriashvili – Production of O-17 Isotope in Georgia and Prospects for Use in Biological-pharmacological Studies and Medical Diagnostics. Proceedings of IV Conferense “Natural and Synthetic Bioactive Compounds”, Georgian National Academy of Sciences, Tbilisi, October 22-23, 2018, pp. 155-157. (Geo)
71. Malkhaz Berezhiani - FUEL BIOETHANOL DISTILLATION PROJECT. International Conference of European Academy of Science, Bonn, Germany, April-May, 2019, pp. 57-59.
72. Berezhiani M.G., Rukhadze T.K., Kemertelidze K.M. - Analysis of Brandy Alcohol Distillation Modes by Computer Modeling. CONFERENCE `THE INNOVATIVE RESEARCH ASPECTS IN AGRICULTURAL SCIENCE~, Collection of Works. Tbilisi, Georgian technical University, 2021, pp. 190-194. ISBN 978-9941-28-858-6. (Geo)
73. Berezhiani M.G., Jamagidze I.I., Jinoria E.V. - Statistics of the Experiment or Beans Fortune Telling. CONFERENCE `THE INNOVATIVE RESEARCH ASPECTS IN AGRICULTURAL SCIENCE~, Collection of Works. Tbilisi, Georgian technical University, 2021, pp. 383-387. ISBN 978-9941-28-858-6. (Geo)
74. Malkhaz Berezhiani, Teimuraz Rukhadze, Eter Jinoria - Grape Juice - a Source of Carbohydrates in Food Technology. WORLD VITICULTURE AND ENOLOGY – THE HISTORY, MODERNITY AND PERSPECTIVES OF SUSTAINABLE DEVELOPMENT, From a Series of Monographs. Tbilisi, Georgian technical University, 2022. pp. 21-26. ISBN 978-9941-28-946-0; (Geo)
<https://doi.org/10.36073/978-9941-28-946-0>
75. Berezhiani Malkhaz-1 KG IRON VS 1 KG COTTON WOOL: THE OBJECTIVITY OF EXAMINATION TESTS. Deutsche internationale Zeitschrift für zeitgenössische Wissenschaft, N 72, 2024. pp. 56-58. ISSN 2701-8377. DOI: 10.5281/zenodo.10532372
76. Berezhiani M.- BANANA EQUIVALENT – RADIOACTIVITY OF BIOPRODUCTS. Scientific Discussion, N 87, 2024, pp. 6-8. ISSN 3041-4245. DOI: 10.5281/zenodo.10957401 (Rus)
77. Berezhiani M.G., Eliashvili L.Z., Parulava L.P. - Isotopic Measurements Data Acquisition Computer System for Mass Spectrometer MI-1201, Georgian Engineering News, 2024, Vol.100, No 1, pp. 53-56. ISSN 1512-0287 , <https://doi.org/10.36073/1512-0287>. (Geo)
78. Malkhaz Berezhiani - Radioactivity due to the ⁴⁰K isotope in biomaterials. 5th scientific conference "Natural and synthetic biologically active substances-2024". National Academy of Sciences of Georgia, May 13-14, 2024, p. 55-99. (Geo)