

**Manana Siradze**  
**(Scientific works - 2013 – 2023 years)**

1. **Manana Siradze.** Fatty refining Technology. Manual.- Georgian Technical University. 2013, 129 p. ISBN 978-9941-20-311-4.
2. **M. Siradze, I. Berdzenishvili, N. Neparidze, I. Gokсадзе.** The structure and properties of synthetic ester wax. „Chemistry News“, vol. 1, №1, Tbilisi, 2013, pp. 28–29.
3. **I. Berdzenishvili, M. Siradze .** Osmosis and Living Cell. „Chemistry News“, vol. 1, № 1, Tbilisi, 2013, pp. 30–31.
4. **Manana Siradze.** Fundamentals of organic matter technology. Course of lectures (without Griffi), GTU, Tbilisi, 2013, 500 p.
5. **I. Berdzenishvili, M. Siradze, N. Rachvelishvili.** Thermodynamic Modeling of the Behavior of Aluminum in Solution. Georgia Chemical Journal, vol.14, №1, 2014, pp. 94-96.
6. **M. Siradze, I. Berdzenishvili, N. Neparidze.** Improvement of the technology of refining cottonseed oil. International Scientific and Practical Conference "Actual Problems of Food Production and Modern technologies" - Collection of works, Kutaisi - 2014, June, pp. 103-105.
7. **M. Siradze, N. Neparidze, I. Gokсадзе.** Method of measuring alkali content in solutions. Georgia Chemical Journal, vol.15, №2, 2015, pp. 28-29.
8. **M. Siradze, N. Neparidze, E. Chkhaidze.** Synthesis of biodegradable, unsaturated polyesteramides and study of their thermal and mechanical properties. Georgia Chemical Journal, vol.15, №2, 2015, pp. 48-56.
9. **M. Siradze, N. Neparidze, E. Chkhaidze.** The study of thermal properties of biodegradable copoly (ester amides) with lateral N-Alkyl substitutes. Proceedings of the Georgian National Academy of sciences, Chemical series. vol. 41, №3, 2015, pp. 215-226.
10. **M. Siradze, N. Neparidze, E. Chkhaidze.** Reactions of Chemical Transformation of Unsaturated Co-polyesteramide. Journal of Technical Science & Technologies – International Black Sea University – Vol. 4, Issue 2, 2015, pp.23-26.
11. **I. Berdzenishvili, M. Siradze .** Oriented solution increase the efficiency of major infrastructure projects. Georgian Technical University, Transactions, № 4(498), Tbilisi, 2015, pp.122-124.
12. **M. Siradze, N. Neparidze, I. Gokсадзе, O. Dioghidze .** The refining process of sunflower and cotton oils. Proceedings of the Georgian National Academy of sciences, Chemical series. vol. 41, №3, 2015, pp. 313-314.
13. **M. Siradze, N. Neparidze, I. Gokсадзе, E. Chkhaidze.** Stationary Catalyzer for cotton oil hydrogenation. Georgian Engineering news. vol. 76, №4, 2015, pp. 117-119.
14. **M. Siradze, I. Gokсадзе, O. Dioghidze .** Structure and properties of synthetic ester wax. Proceedings of the Georgian National Academy of sciences, Chemical series. vol. 41, №1-2, 2015, pp. 67-68.
15. **M. Siradze, I. Gokсадзе, O. Dioghidze .** Calculation of the drying process of soap bases. Proceedings of the Georgian National Academy of sciences, Chemical series. vol. 41, №1-2, 2015, pp. 65-66.

16. **M. Siradze, N. Neparidze.** Inter-phase activity of cotton oil co-substances. Proceedings of the Georgian National Academy of sciences, Chemical series. vol. 41, №4, 2015, pp. 366-369.
17. **M. Siradze, N. Neparidze, I. Goksadze.** Production of dietary sunflower flour. Georgia Chemical Journal, vol.15, №2, 2015, pp. 94-95.
18. **M. Siradze, I. Berdzenishvili, N. Neparidze.** Qualitative identification of phospholipids by the method of thin-layer chromatography. Proceedings of the Georgian National Academy of sciences, Chemical series. vol. 42, №2, 2016, pp. 125-126.
19. **M. Siradze, I. Berdzenishvili, N. Neparidze.** Thin-layer liquid chromatography of phospholipids. Proceedings of the Georgian National Academy of sciences, Chemical series. vol. 42, №2, 2016, pp. 155-159.
20. **M. Siradze, I. Berdzenishvili, N. Neparidze.** Micro-column liquid chromatography of sunflower oil phospholipids. Georgian Engineering news. vol. 78, №2, 2016, pp. 100-101.
21. **M. Siradze, N. Neparidze, E. Chkhaidze.** Characterization and properties of Polyester- Amides Containing Long-chain n-alkyl Substituents. - Journal of Technical Science & Technologies – International Black Sea University – Vol. 5 Issue 1, 2016, pp. 29-33.
22. **M. Siradze, I. Berdzenishvili.** To the Issue of Increasing the Efficiency of Operation of Energy Transmission Systems. - Journal of Energy and Power Engineering, USA, p-ISSN: 1934 – 8975, Vol. 10, Nam. 8, 2016, pp. 486-490.
23. **I. Berdzenishvili, M. Siradze.** Chemical equilibrium and qualitative assessment of its direction shift. Journal of the Georgian Ceramists Association, Ceramics, vol.19. 1(37). 2017, pp. 34-37.
24. **M. Siradze, I. Goksadze , N. Neparidze.** **Medicinal herbal raw materials. Manual.** Georgian Technical University. Tbilisi -2017, 216 p. ISBN 978 - 9941 - 20 - 764 – 8.
25. **I. Berdzenishvili, M. Siradze, N. Rachvelishvili.** Partition equilibrium and optimisation of solvent extraction process. **International Scientific-Practical Conference:** “Current Actual Scientific Issues of the Modernity”, Georgia, Gori, 2-3 June, 2017, pp. 345-348.
26. **M. Siradze, I. Berdzenishvili.** Improvement of the Process of Cottonseed Oil Refining. **International Journal of Food Science and Nutrition Engineering, USA,** p-ISSN: 2166-5168, 2017; 7(2): pp. 29-31.
27. **M. Siradze, I. Berdzenishvili.** **Vegetable oils. Chemical composition and improvement of refining technology. Monograph.** Tbilisi: Technical University. 2017, 159 p. ISBN 978-9941-20-859-1.
28. **M. Siradze, V. Tvaliashvili.** Phospholipids and their role in vegetable oil technology. GTU, 84th open international scientific conference of students, (collection of theses), Tbilisi – 2017.
29. **M. Siradze, V. Tvaliashvili.** Factors affecting the refining process of vegetable oils. GTU, 85th open international scientific conference of students, (collection of theses), Tbilisi – 2017.

30. **M. Siradze, I. Berdzenishvili, S. Dzneladze.** Effect of sunflower husk on the quality of produced oil. "Science and Technologies" - scientific-refereed journal of Sakar-Tvelo Academy of Sciences. № 3 (729), 2018, pp. 57-64. ISSN 0130-7061, Index 76127.
31. **M. Siradze, I. Berdzenishvili, S. Dzneladze.** Properties of sunflower at different stages of maturity and storage. "Science and Technologies" - scientific-refereed journal of Sakar-Tvelo Academy of Sciences. № 3 (729), 2018, pp. 65-69. ISSN 0130-7061, Index 76127.
32. **M. Siradze, I. Berdzenishvili.** Novel Nonfluor Corrosion Resistant Coatings Based on Material Resources of Georgia. **International Journal of Advanced Materials Research.** Vol.4, No.3, 2018, pp. 35-39. ISSN: 2381-6805 (Print); ISSN: 2381-6813 (Online). **American Institute of Science.**
33. **M. Siradze, G. Kvartskhava, S. Dzneladze.** Sources of food protein products. **International scientific and practical conference** "Modern science and innovative technologies", Volume II. Kutaisi - 2018, Page 121-123.
34. **M. Siradze, I. Berdzenishvili.** Prospects for the utilization of cocoa production residues. **International scientific-practical conference** "Actual problems of food production and contemporary technologies". A collection of works. Kutaisi, February 20-21, 2020. pp. 358-360.
35. **M. Siradze, I. Berdzenishvili.** Analysis of the heterogeneous equilibrium "Gas – Solution – Mine. **International scientific-practical conference** "The development of mining and geology is a prerequisite for the revival of the economy".A collection of works. Tbilisi, May 28-29, 2020. pp. 147-149.
36. **M. Siradze, G. Kvartskhava, S. Dzneladze.** Sunflower for industrial cultivation. Bulletin of the Academy of Agricultural Sciences, Publishing house "Agro", Tbilisi, №2 (44), 2020, pp. 26-28. ISSN 1512-2743.
37. **M. Siradze, G. Kvartskhava, S. Dzneladze.** The study of the composition of promising varieties of cotton seeds in the process of maturation. Bulletin of the Academy of Agricultural Sciences, Publishing house "Agro", Tbilisi, №2 (44), 2020, pp. 23-25. ISSN 1512-2743.
38. **M. Siradze, G. Kvartskhava, S. Dzneladze.** Sunflower flour is a food source of protein products. "Science and Technologies" scientific-refereed journal of the Academy of Sciences of Georgia. - 2020, p. 82-84.
39. **M. Siradze, G. Kvartskhava, S. Dzneladze.** Cotton Kernel protein Flour. "Science and Technologies" scientific-refereed journal of the Academy of Sciences of Georgia. - 2020, p. 86-89.
40. **M. Siradze, G. Kvartskhava, S. Dzneladze.** The relationship between the defectiveness of oily raw materials and the acid number of the oil. "Science and Technologies" scientific-refereed journal of the Academy of Sciences of Georgia. - 2020, pp. 104-106.
41. **M. Siradze, G. Kvartskhava, S. Dzneladze.** Changes in the protein complex in the process of moisture-thermal treatment of oilseeds. Georgian engineering news. No. 2, Volume 91, 2020, p. 87-89. ISSN 1512-0287.
42. **M. Siradze, G. Kvartskhava, S. Dzneladze.** The most important properties of phospholipids in the neutralization process of sunflower oil. Georgian engineering news. No. 1, Volume 90, 2020, p. 113-117. ISSN 1512-0287.

43. **M. Siradze, G. Kvartskhava.** Oily raw materials. Composition, features of production and processing. Monograph. Tbilisi: Technical University. 2021, 154 p.
44. **M. Siradze, G. Kvartskhava, S. Dzneladze.** Influence of sunflower seed processing regimes on the content of phospholipids in oil. Bulletin of the Academy of Agricultural Sciences, Publishing house "Agro", Tbilisi, №1 (45), 2021, pp. 107-109. ISSN 1512-2743.
45. **M. Siradze, G. Kvartskhava, S. Dzneladze.** Preparation of sunflower seeds for processing. Bulletin of the Academy of Agricultural Sciences, Publishing house "Agro", Tbilisi, №1 (45), 2021, pp. 110-111. ISSN 1512-2743.
46. **M. Siradze, S. Dzneladze, I. Berdzenishvili.** Factors affecting the processing efficiency of sunflower raw materials. To Mark the 80 th Ann-iversary of the Gaas professor/academician Guram Tkemaladze International Scientific - practical Conference "The Innovative Research aspects in Agricultural science". Tbilisi, November 20-21, 2021. Pp. 78-81.
47. **M. Siradze, S. Dzneladze, I. Berdzenishvili.** Nutritional value and quality enrichment of vegetable oils. To Mark the 80 th Ann-iversary of the Gaas professor/academician Guram Tkemaladze International Scientific - practical Conference "The Innovative Research aspects in Agricultural science". Tbilisi, November 20-21, 2021. Pp. 132-135.
48. **M. Siradze, I.Berdzenishvili, G.Mamedova.** Choice of effective measures to prevent the "Waxing" of pipes. Journal World Science Publisher RS Global Sp. z O.O., Poland, 17 January 2022, Scholarly Publisher RS Global Sp. z O.O. p-ISSN 2413-1032, e-ISSN 2414-6404.
49. **M. Siradze, Dzneladze, G. Antia.** Use of catalysts in the esterification of soapstock fatty acids. Georgian Engineering news. № 2, vol. 96, 2022, p. 105-106. ISSN 1512-0287.
50. **M. Siradze, I.Berdzenishvili, A. Aphakidze.** Review of the complex technology of cha-nasakh processing to obtain physiologically valuable corn oil. Georgian Engineering news. № 1, vol. 95, 2022, p. 139-141. ISSN 1512-0287.
51. **M. Siradze, I.Berdzenishvili.** Ultraviolet radiation and ozone layer. XXV International scientific and practical conference "Innovative trends of science and practice, tasks and ways to solve them". Athens, Greece. June 28-Jule 01, 2022. ISBN 979-8-88680-823-0.
52. **M. Siradze, I.Berdzenishvili.** Nutritional value and physiological activity of corn oil. From the birth of Academician Givi Tsintsadze International scientific conference dedicated to the 90th anniversary - Chemistry-achievements and perspectives, April 20, Tbilisi Georgia, 2023, pp. 220-227.  
**ISSN 1512-0996. DOI:<https://doi.org/10.36073/1512-0996>.**
53. **Siradze Manana, Berdzenishvili Irine<sup>1</sup>, Chkhaidze Ekaterina<sup>1</sup>, Antia Giorgi** Study of the process of countercurrent extraction of vegetable oils via mathematical modeling. Advanced materials and composites, new research on properties, techniques, and Applicationt. Tailor - Francis Group, 2023. England – London,

pp.341-346. Apple academic Press, goldenrod circle, palm by FL USA, laurentian drive, unit 19, on L7N, OA 4, Canada.

**54. M. Siradze, I.Berdzenishvili.** Methodical approaches for the study of structurally sensitive reactions. From the birth of Academician Givi Tsintsadze International perspectives, April 20, 2023. Tbilisi Georgia. Pp. 27-34. **ISSN 1512-0996.**  
**DOI:**<https://doi.org/10.36073/1512-0996>.

**55. Siradze Manana, Berdzenishvili Irine<sup>1</sup>, Chkhaidze Ekaterina<sup>1</sup>, Antia Giorgi**  
Assessment of Tecnogenic Raw Materials for the production of Glass Materials and course on “Green” Growth. Advanced materials and composites, new research on properties, techniques, and Applicationt. Tailor - Francis Group, 2023. England – London, pp.203-208. Apple academic Press, goldenrod circle, palm by FL USA, laurentian drive, unit 19, on L7N, OA 4, Canada.

**56. M. Siradze, G. Kvartskhava, S. Dzneladze.** Method of refining vegetable oils. Copyright application number 2023 16175, GTU. **Patent.**

**57. M. Siradze.** Technology of synthetic detergents (manual-lecture course). Tbilisi, publishing house “Technical Univrsity”, 2023, 101 p. ISBN 978-9941-512-04-9 (PDF), <http://www.gtu.ge>.

**58. M. Siradze.** Chemistry and technology of essential oils and aromatic compounds (manual-lecture course). Tbilisi, publishing house “Technical Univrsity”, 2023, 141 ISBN 978-9941-512-04-9 (PDF), <http://www.gtu.ge>.

**59. Manana Siradze, Teimuraz Rukhadze, Sofia Dzneladze and others.**

Development of the production technological line of Meskhur Tenil cheese. Association for Science - Georgian Scientists, vol. 5, №2, 2023, pp. 34-38.  
E-ISSN 2667 – 9760.