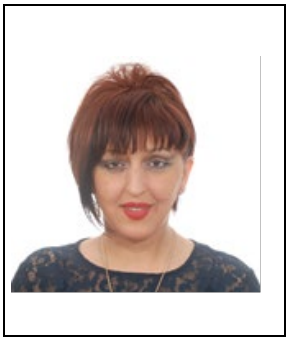
Georgian National Academy of Sciences



Personal Data (CV)

Surname	Zavradashvili	**First Name**	Nino
Address (work)	Kakha Bendukidze Campus, 240 David Aghmashenebeli Alley, Tbilisi, 0159, Georgia	**Date and place of birth**	26/09/1974 Sighnaghi
Citizenship	Georgia	**Contact phone number**	(+995 599) 30 10 42
E-mail	N.Zavradashvili@agruni.edu.ge		

1. Education

Institution	Learning Time
Georgian Technical University, BS	1993-1997
Georgian Technical University, MS	1998-2000
Georgian Technical University, PhD (2008)	2000-2004

2. Scientific or Academic Degree and Rank

	Title of the thesis	Date of conferment
Ph.D. thesis	Design and Synthesis of Biodegradable Functional Polyesteramides from α-Amino Acids for Biomedical Applications	2008
Doctoral thesis		
Academician Doctor	Design and Synthesis of Biodegradable Functional Polyesteramides from α-Amino Acids for Biomedical Applications	2008
Research Follow of the Academy	Pseudo-proteins: synthetic biodegradable polymers for versatile biomedical applications	2024
Corresponding Member of the Academy		
Member of the Academy		

3. Knowledge of Languages

Foreign languages	Level of language proficiency (fluent, intermediate, beginning with the help of a dictionary)
English	Fluent
Russian	Fluent
French	Intermediate

4. Work Experience (Including permanent positions abroad)

Date	Institution	Position
2013-present	Institute of Chemistry and Molecular Engineering, Agricultural University of Georgia	Senior research scientist
2009-2012	Institute of Medical Polymeric Materials, I. Javakhishvili Tbilisi State University	Scientist-Researcher
2000-2009	Research Center for Medical Polymers & Biomaterials, Georgian Technical University	Researcher

4.1 Teaching Activity

Date	Institution	Position
2013-2014	Faculty of chemical technology and metallurgy, Georgian Technical University	Invited Lecturer
2022	Institute for Catalysis (ICAT), Division of Macromolecular Science: Nakano Lab, Hokkaido University	Invited Lecturer
2023	Department of Macromolecular Chemistry (English language program), I. Javakhishvili Tbilisi State University	Invited Lecturer
2019-2022	Faculty of Agricultural and Natural Sciences, Agricultural University of Georgia	Assistant professor
2023-present	School of Natural Sciences and Biotechnology, Agricultural University of Georgia	Associate professor

4.2 Work Abroad (Long-term visits to international universities or research centers)

Date	Place and Institution
2010-2012	LMRP, École polytechnique fédérale de Lausanne, EPFL, Lausanne, Switzerland
2015-2016	Department of Pharmaceutical Sciences,The Center for Pharmaceutical Biotechnology and Nanomedicine, Northeastern University, Boston, MA, USA
2017-2019 2022-2023	Institute for Catalysis (ICAT), Division of Macromolecular Science: Nakano Lab, Hokkaido University, Sapporo, Japan

5. Scientific Interests

Polymer Chemistry, Biotechnology, Nanotechnology, Nanomedicine

Including: Synthesis and investigation of eco-friendly, biodegradable polymers (pseudoproteins, biomimetics) derived from natural α-amino acids and other non-toxic building blocks; Design and study of functional polymers, particularly poly(ester amide)s and poly(ester urea)s with tunable architecture and properties; Arginine-based cationic polymers as non-viral vectors for gene delivery; Polymer-based drug delivery systems with controlled release and targeted delivery capabilities; Polymeric nanoparticles and supramolecular systems for biomedical applications; Design and evaluation of antimicrobial and bioactive polymers for medical and pharmaceutical application; Structure–property-function relationships in macromolecular systems, with a focus on physico-chemical and biological performance

6. Publications (Total number)

35

6.1 Citation Index

Scopus -105.00, h index 6.00
Google Scholar - 200.00, h index 9.00
Web of Sciences - 94.00, h index 6.00

6.2 Monographs

Years	

6.3 Principal Papers (no more than 50)

Years	
2025	T.Kantaria, D.Makharadze, T.Kantaria, N.Kupatadze, N.Zavradashvili, L.Kirtadze, J.Puiggali, L.J.del Valle, R.Katsarava. Pseudoprotein-Poly(ethylene glycol) Multi-purpose Graft Copolymers via Michael Addition Reaction. *Europ. Polym. J.*
2025	Nino Zavradashvili, Taia Kotorashvili, Tengiz Kantaria, Nino Kupatadze, Natia Ochkhikidze, Nino Medzmariashvili, Nazi Kutsiava, Manana Gurielidze, and Ramaz Katsarava. Polyamines and Arginine Based Cationic Polymers as Antimicrobial Agents. Book chapter in "Advances in Engineering Materials - Preparation for Sustainable Process Developmen" Editors: Tamara Tatrishvili and A. K. Haghi. *Apple Academic Press,* Ch.5, pp 71-82.
2024	Tem. Kantaria, Teng. Kantaria, N. Zavradashvili, D. Makharadze, D. Tugushi, R. Katsarava. A Novel Biodegradable Surfactant with Dual Function on the Basis of Amino Acid Based Epoxy-Poly(ester amide). *Bull. Georgian Nat. Acad. Sci,* 18(1), 61-69 (2024).
2024	Nino Zavradashvili, Nino Kupatadze, Lika Kirtadze, Guram Tatarashvili, Manana Pruidze, Irine Kvachadze, Nino Kharadze, Nino Khvitia, Maya Jonson, Nino Chikobava, Ramaz Katsarava. Pseudoproteins – biodegradable polymers for versatile medical application. *Proc. Georgian Nat. Acad. Sci., Biomed. Series,* vol. 50, No 4-6, 107-122.
2022	Nino Zavradashvili, Nazi Kutsiava, Ekaterina Chkhaidze, Nino Neparidze, Giuli Jokhadze, Nino Kebadze, Natia Ochkhikidze, David Tugushi, Ramaz Katsarava. Pseudo-Proteins – Artificial Biodegradable Polymers for Versatile Biomedical Applications. International Conference on Global Practice of Multidisciplinary Scientific Studies Dedicated to the 100th Anniversary of "Georgian Technical University - GTU", June 24-26, 2022, Tbilisi, Georgia. PROCEEDINGS BOOK; pp 391-403.
2021	Nino Zavradashvili, Giuli Otinashvili, David Tugushi, Tengiz Kantaria, Temur Kantaria, Nino Kupatadze, Ekaterina Chkhaidze, Nino Neparidze, Ashot Saghyan, Anna Mkrtchyan, Artavazd Poghosyan, Ramaz Katsarava. Synthesis of Pseudoproteins Based on Nonproteinogenic α-Amino Acids. *Bull. Georgian Nat. Acad. Sci.*, 2021, *15(3),* 41-47.
2021	Zavradashvili, S. Kobauri, J. Puiggali and R. Katsarava. Functional Pseudo-Proteins. Book chapter in "Functionalized Polymers: Synthesis, Characterization and Applications" (1st ed.). CRC Press. Chauhan, N.P.S. (Ed.). (2021).
2021	Zavradashvili, Nino, Giuli Otinashvili, Temur Kantaria, Nino Kupatadze, David Tugushi, Ashot Saghyan, Anna Mkrtchyan, Sergey Poghosyan, and Ramaz Katsarava. New Cationic Polymers Composed of Non-Proteinogenic α-Amino Acids. Book chapter in "Advanced Materials, Polymers, and Composites", pp. 277-286. Apple Academic Press (2021)
2020	Yuting Wang, Nino Zavradashvili, Yue Wang, Adriana Pietropaolo, Zhiyi Song, Masayoshi Bando, Ramaz Katsarava, and Tamaki Nakano. Optically Active Polymers with Cationic Units Connected through Neutral Spacers: Helical Conformation and Chirality Transfer to External Molecule. *Macromolecules* 2020, 53, 22, 9916-9928.
2020	Nino Zavradashvili, Jordi Puiggali and Ramaz Katsarava. Artificial polymers made of α-amino acids – Poly(Amino Acid)s, Pseudo-Poly(Amino Acid)s, Poly(depsipeptide)s, and Pseudo-Proteins, *Current Pharmaceutical Design*, 2020, 26 (5): 566-593.
2019	Dmitry Lebedev, Elena Kryukova, Igor Ivanov, Natalia Egorova, Nikita Timofeev, Ekaterina Spirova, Elizaveta Tufanova, Andrei Siniavin, Denis Kudryavtsev, Igor Kasheverov, Marios Zouridakis, Ramaz Katsarava, Nino Zavradashvili, Ia Iagorshvili, Socrates Tzartos and Victor Tsetlin. Oligoarginine Peptides, a New Family of nAChR Inhibitors. *Molecular pharmacology*, 2019, *96(5)*, 664-673.
2019	Nino Zavradashvili, Can Sarisozen, Giorgi Titvinidze, Giuli Otinashvili, Tengiz Kantaria, Davit Tugushi, Jordi Puiggali, Vladimir P.Torchilin, Ramaz Katsarava. Library of Cationic Polymers Composed of Polyamines and Arginine as Gene Transfection Agents. *ACS Omega*, 2019, *4(1*), 2090-2101.
2018	Tengiz Kantaria, Temur Kantaria, Giorgi Titvinidze, Giuli Otinashvili, Nino Kupatadze, Nino Zavradashvili, David Tugushi, and Ramaz Katsarava. New 1,2,3-Triazole Containing Polyesters *via* Click Step-Growth Polymerization and Nanoparticles Made of Them. *International Journal of Polymer Science,* 2018, 1, 1-14.
2017	N.Zavradashvili, G.Jokhadze, M.Gverdtsiteli, D.Tugushi, R.Katsarava. Biodegradable functional polymers composed of naturally occuring amino acids. *Research & Reviews in Polymer*, 2017, 8(1), 105-128.

2014	Tamar Memanishvili, Nino Zavradashvili, Nino Kupatadze, David Tugushi, Marekh Gverdtsiteli, Vladimir P. Torchilin, Christine Wandrey, Lucia Baldi, Sagar S. Manoli and Ramaz Katsarava. Arginine-based biodegradable ether-ester polymers of low cytotoxicity as potential gene carriers. *Biomacromolecules*, 2014, *15(8)*, 2839-2848.
2014	N.Zavradashvili, T.Memanishvili, N.Kupatadze, D.Tugushi, C.Wandrey, L.Baldi, X.Shen, R.Katsarava. Cell compatible arginine containing cationic polymer: one-pot synthesis and preliminary biological assessment. *Springer Book Series-Advances in experimental medicine and biology: Infectious Diseases and Nanomedicine,* Adhikari R. and Thapa S., Eds. 2014, *807*, 59-73.
2013	Nino Zavradashvili, Giuli Jokhadze, Marekh Gverdtsiteli, Giuli Otinashvili, Nino Kupatadze, Zaza Gomurashvili, David Tugushi, Ramaz Katsarava. Amino acid based epoxy-poly(Ester Amide)s - a class of functional biodegradable polymers: synthesis and chemical transformations. *J. Macromol. Sci., P. A, Pure & Appl. Chem.* 2013, 50, 449-465.
2012	S.Kobauri, N.Zavradashvili, M.dgebuadze, D.Tugushi, R.Katsarava. Novel Hydrophobic Biodegradable Ester-Polymers Obtained *via* Azlactone Chemistry. *Macromol. Symp.* 2012, *315*, 112-114.
2010	S.Kobauri, N.Zavradashvili, M. Dgebuadze, D.Tugushi, R.Katsarava. New biodegradable co-poly(amide/ester amide)s – promising materials for constructing drug-delivering micro- and nano-containers. *Proceedings of the Georgian National Academy of Sciences, Chem. Ser.*, 2010, *36*, 336-344.
2010	S.Kobauri, N.Zavradashvili, T.Kviria, M.Machaidze, R.Katsarava. Novel Hydrophobic biodegradable polymers on the basis of bis-azlactones. *Georgian Chem. J.,* 2010, *10*, 295-305.
2008	N. Zavradashvili, G. Jokhadze, T. Kviria, R. Katsarava. Thermally- and photo-chemically curable biodegradable poly(ester amide)s with double bond moieties in the lateral chains. In: Chemistry of Advance Compounds and Materials, Editors: N. Lekishvili, G.E. Zaikov. *Published by Nova Science Publishers, Inc. New York,* 2008, 173-179.
2007	M. Machaidze, N. Zavradashvili, G. Jokhadze, G. Chumburidze, R.Katsarava. Thermal transformations of new epoxy-poly(esteramide)s composed of naturally occurring α-amino acids, and their *in vitro* biodegradation. Georgian chemical journal, 2007, 7(4), pp. 374-377.
2006	N. Zavradashvili, G. Jokhadze, N.Ochkhikidze, S.Kobauri, R. Katsarava. Thermo- and photo-reactive biodegradable poly(ester amide)s with double bond moieties in the lateral chains. *Proceedings of Iv. Javakhishvili Tbilisi State University*, 2006, 3 61, pp 65-71.
2006	N.Neparidze, M.Machaidze, N.Zavradashvili, N.Mazanashvili, V.Tabidze, D.Tugushi, R.Katsarava, Biodegradable copoly(ester amide)s with hydrophobic lateral substituents. *Polimery i Meditsina (Russia),* 2006, *2,* 27-33.

6.4 Textbooks, Additional Manuals, and other Methodological Literature and Training means

Years	

6.5 Participation in Scientific Symposiums, Conferences for the last 5 years

Years	Title	Name of Event
2025	Pseudo-proteins: Biodegradable Polymers for Versatile Medical Applications (Plenary Lecture)	International Conference on IMPLANTS 2025, Sopot, Poland
2024	Biologically active nanoparticles using leucine based pseudo-proteins	7th International Conference “Nanotechnology” (GTU nano 2024), Tbilisi, Georgia.
2023	Pseudo-proteins: design and biomedical applications (Plenary Lecture)	6-th International Conference of Young Scientists "Chemistry, Agrochemistry and Biology: Modern Trends and Achievements" dedicated to anniversary of David Sarajishvili, Tbilisi, Georgia.
2023	Library of cationic polymers for versatile biomedical application	8th International Caucasian Symposium on Polymers and Advanced Materials (ICSP & AM8), Tbilisi, Georgia.
2023	Highly charged biodegradable cationic polymers: synthesis and biological assessment	International Scientific Conference "Chemical and Technological Aspects of Biopolymers" - CHTAB2023, Batumi, Georgia

2023	Hybrid cationic polymers based on non-proteinogenic α-amino acids	INTERNATIONAL SCIENTIFIC CONFERENCE "Science, Education, Innovations and Chemical Technologies – From Idea to Implementation", Tbilisi, Georgia.
2022	Hybrid biomimetic polycations containing proteinogenic and non-proteinogenic α-amino acids	XI International Scientific-Technical Conference "Advance in Petroleum and Gas Industry and Petrochemistry" (APGIP-11), Lviv, Ukraine (Online)
2022	Pseudo-proteins – artificial biodegradable polymers for versatile biomedical applications	International Conference on Global Practice of Multidisciplinary Scientific Studies Dedicated to the 100th Anniversary of "Georgian Technical University - GTU", Tbilisi, Georgia.
2021	Synthesis of biomimetic polymers based on nonproteinogenic α-amino acids	7th International Caucasian Symposium on Polymers and Advanced Materials (ICSP&AM7), Tbilisi, Georgia
2021	Synthesis of new 1,2,3-triazole containing poly(ester amide)s and poly(ester ether amide)s	7th International Caucasian Symposium on Polymers and Advanced Materials (ICSP&AM7), Tbilisi, Georgia
2021	Design of Biomimetic Polycations Containing Nonproteinogenic α-Amino Acids (Plenary Lecture)	3rd International Conference on Infectious Diseases and Nanomedicine – 2021 (ICIDN – 2021), Kathmandu, Nepal (Online)
2020	Optically Active Polymers Composed of Chiral/Achiral Cationic Units Connected through Neutral Spacers: Helical Conformation and Chirality Transfer to External Molecule	Molecular Chirality Asia 2020 Tokyo, Japan (Online)

7. Inventions (Author's Certificate, Patents)

Years	Name
2021 - 2024	Multiamines and L-arginine based biodegradable cationic pseudo-proteins and method of their synthesis, National Intellectual Property Center of Georgia P 2021 7213 B
2007	Epoxy-Containing Poly(Ester Amides) and Methods of Use, US Patent Application 11/893,719
2007	Epoxy-Containing Poly(Ester Amides) and Methods of Use, PCT Application PCT/US07/018386

8. International and Local Scientific grants

Years	Name
2024-present	Production of special purpose, multifunctional composites and determination of technological parameters, SHOTA RUSTAVELI NATIONAL SCIENCE FOUNDATION OF GEORGIA (SRNSF)
2022-2025	Target-directed synthesis and screening of antiviral (anti-SARS-CoV) and antibacterial compounds based on non-proteinogenic amino acids, peptides and polymers, ISTC
2018-2020	Synthesis and screening of a new generation of optically active non-proteinogenic α-amino acids, peptides and polymers containing unsaturated groups in the side chain, ISTC
2017-2019	New biodegradable cationic polymers composed of arginine and spermine-versatile biomaterials for various biomedical applications, STCU / SRNSF
2014-2016	New arginine and spermine based cationic polymers as antimicrobial and gene transfection agents. SRNSF, GRDF, CRDF Global (Individual grant)
2012-2014	The elaboration of simple, cheap, and ecologically friendly technology of the synthesis of functional poly(ester amide)polyacids for biomedical applications, SRNSF
2010-2013	Novel polyelectrolyte based materials including biodegradable ones for medical, pharmaceutical and battery applications, Swiss NSF
2007-2009	Synthetic biodegradable polymers modified papaya protease complex in order to create the potential drug for injection, STCU/ SRNSF
2005-2006	Photo-reactive Amino Acid Based Biodegradable Poly(ester amide)s: Synthesis and Phototransformation Study, CRDF
2003-2005	Biodegradable Epoxy-Poly(Ester Amide)s and Functional Polymers Based on them, ISTC

9. Scientific-Commercial Activity, Implementation

Years	Name

10. Other Activities

	Name	Years
Supervision of Theses work		
Participation in International, State and Regional Programs		

11. Membership in international scientific organizations

Years	Name

12. Awards and Prizes

Date	Name of Awards, Prizes
2024	Academy Scholarship Holder (Georgian National Academy of Sciences)

13. Honorary Title

Date	Honorary Title