

## Curriculum Vitae

1. Name *Tamaz Mdzinarashvili*
2. Education – degree, discipline, institution, year
  - 1999 Doctor of Phys.-Math. Science, Ivane Javakhishvili Tbilisi State University, Republic of Georgia*
  - 1990 Ph.D (speciality biophysics), Institute of Physics of National Academy of Sciences, Georgia*
  - 1974 M.S., Ivane Javakhishvili Tbilisi State University, Tbilisi, Republic of Georgia*
3. Academic experience – Full Professor
4. Non-academic experience – Director of Institute of Medical and applied Biophysics at Faculty of Exact and Natural Sciences.
  - *Director of Institute of Medical and applied Biophysics at Faculty of Exact and Natural Sciences.*
  - *1985-1990 Senior researcher, Ivane Javakhishvili Tbilisi State University, Department of Physics,*
  - *Chair of Physics of Macromolecules, Republic of Georgia*
  - *1977-1985 Senior Research Assistant, Institute of Physics of National Academy of Science, Republic of Georgia*
5. Research activity:
  - Biophysical study of the structural properties, dynamics & energetical parameters of the main molecules - proteins and nucleic acids (T. Mdzinarashvili, M. Khvedelidze)
  - Observation of Bacteria multiply process and investigate how different antimicrobial agents influence on this process. Physiology of Bacteria in different physics-chemistry environments (T. Mdzinarashvili, N. Shengelia, M. Khvedelidze)
  - Biophysical Research of the Structural Organization of Bacteriophages; Early mechanism of Phage –Bacteria interaction; Determination of DNA ejection mechanism from phage particles. (T. Mdzinarashvili, M. Khvedelidze)
  - Biophysical Investigation of the Nanoparticles: stability, structural organization of phospholiposomes -DPPC, DPPA, DMPC; PLGA et al. Structural organization of complex Nanoparticles with Biological active Molecules. Nanoparticles as a Drug Delivery System; Preparation of Nanoparticles for New Drug Protection (M. Khvedelidze, T. Mdzinarashvili).
6. Current membership in professional organizations -
  - The editorial board members for the Journal “Advances in Modern Oncology Research” (AMOR).
  - Editorial member of "journal of Biological Physics and Biochemistry";

- members of "Phage Ecology Group"

7. Last period Honors and awards:

- 2017-2019 Horizon2020 e-COST action CA16112 project “NutRedox and aging problems” MC comity member from Georgia
- 2017-2019 Volkswagen funding project in Theoretical and Elementary particles physics - member
- 2014-2016 Shota Rustaveli national science foundation and CNRS (France) joint grant N° 04/21  
“Bacteria and biofilmes against antimicrobial cocktails”
- 2013-2015 Regional Training Network in Theoretical Physics.
- 2009-2012 Georgian National Scientific Foundation grant, GNSF/ST08-369, “Biophysical investigation of interaction mechanism for bacteriophage and bacterial membrane”, Senior Research Scientist. (Manager)
- 2009-2011 GNSF/CNRS - Call 2009, grant N° 09/560 “Study of Bacterial Reproduction Speeds and Action in Biologically Active Materials: Turbidity research”, Senior Research Scientist. (Manager)
- 2009-2010 GNSF/ST08-374. Change –transfer VS stability patterns of globular proteins: Focus on the bilateral role of conformational flexibility.
- 2005-2006 Georgian National Scientific Foundation grant, N° 76, “Thermodynamic, radiospectroscopy and hydrodynamic study of protein, nucleic acids and their complexes”, Senior Research Scientist.

Briefly list the most recent professional development activities (workshops/seminars/conferences attended, technical projects, etc.

- E.Shekiladze, T.Mdzinarashvili, M.Khvedelidze, „Calorimetric study the stability of DPPC liposomes and C and E vitamins complexes“ *Experimental and Clinical medicine*, Vol.2, pp. 71-73, 2017.
- T.Mdzinarashvili, M.Khvedelidze, E.Shekiladze, R.Machaidze “Novel technology for the fast production of complex nanoliposomes” *Journal of Biological Physics and Chemistry*, Vol.16/4, pp. 172-176, 2016.
- Papukashvili I, Lomadze E, Mdzinarashvili T. (2016). The Action of Bacteriophages and  $\beta$ -Lactam Antibiotic on *P. aeruginosa* Biofilm Formation *Bull. Georg. Natl. Acad. Sci.*, vol. 10, no. 1, pp 91-96;
- M.Khvedelidze, T.Mdzinarashvili, E.Shekiladze, M.Schneider, D.Moersdorf, I.Bernhardt “Structure of drug delivery DPPA and DPPC liposomes with ligands and their permeability through cells” *Journal of Liposome Research*, Vol. 25, N°1, pp. 20-31, 2015.

- *T.Mdzinarashvili, I.Papukashvili, N.Shengelia, M.Khvedelidze "Features of membrane receptors in bacterial multiplication process and necessary conditions for phage infection of bacteria" Current Microbiology, Vol. 69, №6, pp. 858-865, 2014.*
- *T.Mdzinarashvili, M.Khvedelidze, E.Shekiladze "Structural organization of DPPA and DPPC liposomes with ligands and permeability of incorporated Gold nanoparticles into cells" Second Scientific Conference in Exact and Natural Sciences ENS-2014, Tbilisi, Georgia, January 29th-31th, 2014.*
- *T.Mdzinarashvili, M.Khvedelidze, E.Shekiladze "Thermodynamic properties of DPPA and DPPC liposomes" Second Scientific Conference in Exact and Natural Sciences ENS-2014, Tbilisi, Georgia, January 29th-31th, 2014.*
- *T.Mdzinarashvili, Partskhaladze T., M.Khvedelidze, J.Kereselidze, G.Bogatkevich. "Thermodynamic properties of DNA in different acidity environment and about possible recognition DNA district models" International Conference "Physical Concepts of Nucleic-Acid Structure and Behavior Funded by VolkswagenStiftung, the State Committee of Science (Armenia) and ICTP network NET68", Yerevan, Armenia, May 27th-29th, pp. 46-47, 2013.*
- *Tamaz Mdzinarashvili • Irina Papukashvili •Tamar Partskhaladze • Nino Shengelia •Mariam Khvedelidze Study of Environmental and Antimicrobial Agents Impact on Features of Bacterial Growth. Cell Biochem Biophys. (2013) 66:759-764*
- *T. Mdzinarashvili, T. Partskhaladze, M. Khvedelidze, J. Kereselidze, G.S. Bogatkevich. Thermodynamic properties of DNA in different acidity environment and about possible recognition DNA district models. International Conference Physical Concepts of Nucleic Acid, 27-29 May 2013, Yerevan, Armenia.*
- *T.Mdzinarashvili, Papukashvili I., Shengelia N., M.Khvedelidze "Bacteriophages and Antibiotic Comcentration effects in Relationship to Bacterial Growth" 19th Evergreen International Phage Biology Meeting, Olimpia, August 7th-12th, p. 92, 2011.*
- *T.Mdzinarashvili, M.Khvedelidze, Papukashvili I., Shengelia N. "Turbidity method for fast determination the species viruses of infectious diseases" International Scientific Conference "Physical Research Methods in Medicine", Tbilisi, October 27th-29th, p. 92, 2011.*
- *M.Khvedelidze, T.Mdzinarashvili, M.Schneider and U.F.Schaefer "Drug delivery Nanoparticles biophysical investigation" International Scientific Conference "Physical Research Methods in Medicine", Tbilisi, October 27th-29th, p. 71-72, 2011.*
- *M.Khvedelidze, T.Mdzinarashvili, E.Sarukhanyan, T.Partskhaladze, N. Nafee, U.F. Schaefer, M. Schneider "Influence of conditions of preparation on PLGA nanoparticles' thermal stability" Journal of Biological Physics and Chemistry, , Vol.10(2), 2010.*
- *M.Khvedelidze, T.Mdzinarashvili, T.Partskhaladze, N.Nafee, C.-M.Lehr, U.F.Schaefer, M.Schneider "Calorimetric and spectrophotometric investigation of PLGA nanoparticles and their complex with DNA" Journal of Thermal Analysis and Calorimetry (Impact Facot 1.63), Vol.99, №1, pp. 337-348, 2010.*
- *T.Mdzinarashvili, T.Partskhaladze, M.Khvedelidze, T.Lomidze "Conseques of an acidic environment for the structural and functional abilities of DNA" Journal of Biological Physics and Chemistry, Vol.9, pp. 77-82, 2009.*
- *T.Mdzinarashvili, M.Khvedelidze, T.Partskhaladze, N.Nafee, U.F.Schaefer, C.-M. Lehr, M.Schneider "Biophysical approach for evaluate DNA transfer by PLGA nanoparticles" Journal of Biological Physics and Chemistry, Vol.9, pp. 83-87, 2009.*

- *T.Mdzinarashvili, M.Khvedelidze, T.Partsckhaladze, M.Schneider, U.F.Schaefer, N.Nafee, C.-M. Lehr "Typical Physical and Chemical Properties of Drug Delivery Nanoparticles: Calorimetric and Spectrophotometric approaches" Book: Advanced Biologically Active Polyfunctional Compounds and Composites: Health, Cultural Heritage and Environmental Protection, Nova Science Publishers © Copyright 2004 - 2009 ([https://www.novapublishers.com/catalog/product\\_info.php?products\\_id=10787](https://www.novapublishers.com/catalog/product_info.php?products_id=10787))*
- *T.Mdzinarashvili, M.Khvedelidze, A.Ivanova, T.Partsckhaladze, N.Shengelia "Biophysical properties and mechanisms of phage DNA ejection" 7th European Biophysics Congress, Genoa, Italy, July 11-15, p.44 (also published in European Biophysics Journal, Vol. 38), 2009.*
- *M.Khvedelidze, T.Mdzinarashvili, T.Partsckhaladze, N.Nafee, M.Schneider "Biophysical investigation of PLGA nanoparticles and their interaction with DNA" 7th European Biophysics Congress, Genoa, Italy, July 11-15, p.87 (also published in European Biophysics Journal, Vol. 38), 2009.*
- *M.Schneider, M.Khvedelidze, T.Mdzinarashvili, T.Partsckhaladze, N.Nafee, U.F.Schaefer "Thermal behavior of polymeric drug delivery system composed of PLGA" Analyse, Manipulation und Simulation auf der Nanometerskala, Kurzvortrag - Biophysikalische Chemie, Deutsche Bunsen-Gesellschaft für Physikalische Chemie, Bunsentagung, Saarbrücken, Germany, May 1-3, p.47, 20*