

**Dr, Associated prof., FARIDA N. TATARDAR**

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## WORK EXPERIENCE

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**Khazar University, School of Science and Engineering**

**Department: Physics and Electronics**

*Lecturer of Physics (Mechanics and Thermodynamics) and Communication systems, Telecommunication networks, Wireless communication, Optical communication, Physics for medicine and biology, General Physics, Physics (Mechanics, Molecular physics, Quantum physics, nuclear physics), Azerbaijan, 2014 (February) - present.*

**Khazar University, School of Science and Engineering**

**Head of Physics and Electronics Department – 2021 (present)**

**Azerbaijan National Academy of Sciences, Institute of Physics, “Physics of polymer nano- and active composites” laboratory. *Leading Researcher*, Azerbaijan, 2008 (September) – 2022**

## EDUCATION

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- 2002-2006      **BSc in Physics**, Baku State University, Azerbaijan, Baku
- 2006-2008      **MSc in Physics**, Baku State University, Azerbaijan, Baku
- 2009-2013      **Ph.D. in Physics**, Institute of Physics, Azerbaijan, Baku  
2017 **Associate professor**, Institute of Physics, Azerbaijan, Baku

## CONFERENCES

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1. International conference Electroceramics XII” /Trondheim, Norway, 2010;
2. International conference 7th Asian Meeting on Ferroelectricity and 7th Asian Meeting on ElectroCeramics” /Korea, 2010;
3. Congress and Exhibition on Advanced Materials and Processes “Materials Science and Engineering” / Darmstadt, Germany, 24-26 August 2010/;
4. The 10<sup>th</sup> Russia/CIS/Baltic/Japan Symposium on Ferroelectricity, RCBJSF – 10” /Yokohama, Japan 2012/;
5. 11<sup>th</sup> International Symposium on Ferroic Domains and Micro – to Nanoscopic Structures”, /Ekaterinburg, Russia, 2011;
6. 1<sup>st</sup> International scientific conference of young Scientists and specialists. The role of Multidisciplinary approach in solution of actual problems and applied sciences/ Baku, 2014/;
7. The 5<sup>th</sup> International Conference on Control and Optimization with Industrial Applications, 27-29 August 2015, Baku, Azerbaijan.
8. International conference, conference named after academician Latif Imanov, Shusha, September 2022
9. International Conference, Nakhchivan named after Emil Shakhhtakhtinsky, October 2022

10. The 3rd Republican scientific conference dedicated to the 100th anniversary of the birth of National Leader Heyder Aliyev on the topic "Actual issues of personnel training in the field of energy", Hadrut, 17 November 2023
11. III. Interdisciplinary Conference on Mechanics, Computers and Electrics Istanbul/Türkiye 21-22 Oct 2023

## LANGUAGES

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- Azerbaijan (native)
- Russian (fluent)
- English (fluent)
- Turkish (good)

## SELECTED HONORS and AWARDS

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- Honor Diploma, bachelor and master** degrees- Baku State University, Azerbaijan
- PhD diploma**- Azerbaijan National Academy of Science, Azerbaijan
- Associate Professor Academic title** - Azerbaijan National Academy of Science, Azerbaijan
- Certificate**, "Textbook Preparation and Evaluation", Khazar University, 2015
- Certificate**, "Development of interactive teaching materials based on learning outcomes", Khazar University, 2017-2018
- Certificate**, Appreciation Dunya IB School Science Fair, 2022
- Certificate**, "Skills for the future" Mentorship, "Innovation Center" of the State Agency for Citizen Service and Social Innovation under the President of the Republic of Azerbaijan, 2023

## GRANT ACTIVITY

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- Project No: EIF-BGM-2-BRFTE-1-2013-07/01/1-M-06. Title: Investigation of crazing effect in polyether fibbers and films. Approval data: 26.08.2013 *participant*
- Project No: EIF-KETPL-2-2015-1(25)-56/01/1-M-01. Title: Low-dimensional spin-orbit effects and additive effects in semiconductors and Superconductors: Approval data: 28.10.2016. *participant*
- Science Fund Project Competition of the State Oil Company of the Republic of Azerbaijan - ET, September 2019 - September 2020, "Addition and correlation in graphene, fullerene and other topological nanostructures. *manager*

## MEMBERSHIP

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- Member of Independent Trade Union, ANAS, Azerbaijan, 2008 - present

## QUALIFICATIONS

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- Office Programs, Windows 2000/XP, Microsoft Office 97/2000, 2003/2007, Internet Browsers, Adobe Reader
- Matlab, Origin 6.1, Origin 7.1, Origin 8.1

## RESEARCH INTEREST

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- Nanocomposites, Hybrid composites, Immobilization nanoparticles, Piezoelectric effects in composites, Craze effect, Electro-acoustic and acoustic-electric transducer, fiber nanocomposites

## PUBLICATIONS

2. M. K. Kerimov, I.S. Sultanahmedova, I. A. Faradzhzade, F.N. Tatardar, H.S.Aliyev, F. F. Yahyaev. Varistor Effect in Polymer–Semiconductor Composites// Semiconductors, 2010, Vol. 44, No.7, p. 904–911 (Impact Factor: 0.739-SCI).
3. G. A. Mamedov, A. E. Panich, I.Sultanakhmedova , F.N. Tatardar, A.A.Mekhtili, F. F. Yakhyaev. Piezoelectric Composites with a High Stability of the Piezo-electric Modulus under the Action of Mechanical and Temperature Fields// Physics of the Solid State, 2010, Vol. 52, No.6, pp.1138–1145.
4. Kurbanov M.A., Aliyev G.G., Tatardar F.N., Sultanahmedova I.S., Mehdili. A.A. New Technologies of the Nanoparticle Immobilization in the Polymer Solutions for Preparation of the Polymer Nanocomposites// Azerbaijan journal of Physics Volume XVI, 2010 number 2, Series; En, June, p. 38 – 41.
5. F. F. Yakhyayev, I.S.Sultanakhmedova, F.N. Tatardar, G. Kh. Kulieva. A Device for the Complex Study of the Modes of Crystallization and Processing of Polymeric Composites under Electric Discharge Plasma and Temperature Effects // Surface Engineering and Applied Electrochemistry, 2010, Vol. 46, No. 2, pp. 160–164.
6. Мамедов Г.А., Курбанов М.А., Рамазанова И.С., Мехтили А.А., Алиев Х.С., Алиев Г.Г., Татардар Ф.Н., Оруджев И.Н., Кулиева Г.Х. Новая технология иммобилизации наночастиц в полимерной матрице гибридных пьезоэлектрических композитов // “Nanotexnologiyalar və onların texnikada tətbiqi” I Beynəlxalq Konfrans materialları, Bakı – 2010, s. 14 – 19.
7. Мамедов Г.А., Курбанов М.А., Татардар Ф.Н., Гочуева А.Ф., Мехтили А.А., Мусаева С.Н., Алиев Х.С., Рамазанова И.С., Оруджев И.Н., Юсифова У.В.. Технологические особенности создания нового класса пьезоэлектрических материалов на основе гибрида нано- и микропьезоэлектрических композитов // “Nanotexnologiyalar və onların texnikada tətbiqi” I Beynəlxalq Konfrans materialları, Bakı – 2010, s. 19 – 23.
8. Мамедов Г.А., Курбанов М.А., Кулиева Г.Х., Мехтили А.А., Рамазанова И.С., Гочуева А.Ф., Яхъяев Ф.Ф., Оруджев И.Н., Юсифова У.В. Диагностирование наноструктурирования полимерной фазы гибридных композитов применением метода термоактивационной спектроскопии // “Nanotexnologiyalar və onların texnikada tətbiqi” I Beynəlxalq Konfrans materialları, Bakı – 2010, s. 34 – 39.
9. Ф.Н. Татардар. Пьезоэлектрические материалы на основе гибрида матричных нано – и микропьезоэлектрических композитов // Научной конференции аспирантов национальной академии наук Азербайджана, Bakı – «EIM» - 2010, с. 69 – 71.
10. Керимов М.К., Курбанов М.А., Мехтили А.А., Алиев Г.Г., Султанахмедова И.С., Татардар Ф.Н. и др. Пьезоэлектрические материалы на основе гибрида матричных нано - и микропьезоэлектрических композитов // ЖТФ., 2011, т. 81, вып. 8, с.127 – 134.
11. Kurbanov. M.A., Tatardar. F.N., Mextili A.A., Sultanaxmedova I.S., Aliev G.G., Yusifova U.V. New technology of the immobilization of nanoparticles in polymers and the development of the piezoelectrics based on hybrid matrix of nano- and micropiezoceramics compozites// Surface Engineering and Applied Electrochemistry, 2011, Vol. 47, No. 1, pp. 76-83.
12. Kurbanov M.A., Bayramov A.A., Safarov N.A., Tatardar F.N., Mextili A.A., Sultanaxmedova I.S. Hybrid piezoelectric composites with high electromechanical characteristics. US Patent No.8, 030,829 B1, 2011.
13. M.A. Kurbanov, A.A. Bayramov, N.A. Safarov, F.N. Tatardar, I.S.Sultanakhmedova. Hybrid

- piezoelectric composites with high elektromechanical characterics // Scientific Israel – Technological Advantages, 2012, vol.14, no 1, p. 1 -7
14. Керимов М.К., Курбанов М.А., Байрамов А.А., Мехтили А.А., Татардар Ф.Н., Кулиева Г.Х., Оруджев И.Н., Рамазанова И.С. Электроакустические Преобразователи на основе нано- и микрогибридных пьезоэлектрических композитов // АМЕА – nin məruzələri, 2011, cild LXVII, № 2, s. 39 – 50.
  15. Керимов М.К., Курбанов М.А., Байрамов А.А., Мехтили А.А., Татардар Ф.Н., Кулиева Г.Х., Оруджев И.Н., Рамазанова И.С. Новая технология иммобилизации наночастиц в гибридном пьезоэлектрическом композите и диагностирование наноструктурирования полимерной фазы // АМЕА – nin məruzələri, 2011, cild LXVII, № 1, s. 63 – 73.
  16. Prof. Mirza Kurbanov, DrSc. Azad Bayramov, DrPh. Nuru Safarov, Irada Sultanahmedova, Farida Tatardar/ Formation of the piezoelectric and electret effect in composites of polymer-piezoceramic crystallized in a plasma of electric discharge. “International conference Electroceramics XII” Trondheim, Norway, 2010, s. 445
  17. Ch.O. Gajar, M.A. Kurbanov, A.A. Bayramov, I.S. Sultanahmedova, F.N. Tatardar, O.A. Aliiev, F.F. Yaxuyayev, Z.A. Dadashev/ Hybrid piezoelectric materials based on the polymer matrix nano- and microcomposites. 11<sup>th</sup> International Symposium on Ferroic Domains And micro –to Nanoscopic Structures. Ekaterinburg, Russia, 2012, pp. 183
  18. М. К. Керимов, А. А. Байрамов, Ф. Н. Татардар, Г. Х. Гулиева, О. А. Алиев. Влияние технологии модификации композитов полимер–пьезокерамика на них пьезоэлектрические свойства // Электронная Обработка Материалов №5 (49), 2013, с. 6 – 14
  19. А.А.Вауманов, F.N. Tatardar, F.F. Yaxuyayev, A.F. Nuraliyev A.A. Dadasgov, B. Kh. Khudayarov . Ultradisperse state of polymer phase as stabilizer in nanosized BaTiO<sub>3</sub> and polar and nonpolar polymer composities// Azerbaijan Journal of Physics, Fizika, v.XX, n 1, Section: En, April, 2014, p.55-59
  20. F.N. Tatardar. Immobilization of nanoparticles in polymer phase by plasma method. 1<sup>st</sup> international scientific conference of young scientists and specialists.The role of Multidisciplinary approach in solution of actual problems and applied sciences. Baku, 2014, pp. 251-253.
  21. М.А.Гурбанов, Ф.Н. Татардар, З.А. Дадашев, И.С.Рамазанова, А.А.Байрамов, Э.Г.Гашимов. Электретный композит полимер-сегнетопьезокерамика как источник энергии. Azərbaycan Milli Elmlər Akademiyasının Xəbərləri Fizika-texnika və riyaziyyat elmləri seriyası, fizika və astronomiya XXXVI, 2015, №5, с.100-105
  22. Levent Paralı, Mirza A. Kurbanov, Azad A. Bayramov, Farida N. Tatardar. Effects of electric Discharge plasma treatment on the thermal conductivity of polymer – metal nitride/carbide composites// Journal of ELECTRONIC MATERIALS DOI: 10.1007/s11664-015-4010-3 2015 The Minerals, Metals & Materials Society. (Impact Factor: 1.798-SCI)
  23. Navar A. Mamedov, Levent Paralı , Mirza A. Kurbanov, Farida.N. Tatardar, Azad A.Bayramov, İbrahim Şabikoğlu. Piezoresistive and Posistor Effects in Polymer-Semiconductor and Polymer-Ferropiezoceramic Composite// Физика и техника полупроводников(Semiconductors), 2016, том 50, вып. 5, с.633-638 (Impact Factor: 0.739-SCI)
  24. F. N. Tatardar., M.A. Kurbanov., Z.A. Dadashev. Relationship between composite Piezoelectric properties and crystal chemical parameters of piezofiller and polymer matrix/ The 5th international scientific conference on Control and Optimization with Industrial Applications, Baku, Azerbaijan, 27-29 August, 2016. Pp.432
  25. F.N. Tatardar. Development of new plasma method for Nano- dispersion of the polar and non-polar polymers/ Academic Science Week – 2015, Inrenational Multidisciplinary Forum. 02- 04

- November, 2015, Baku, Azerbaijan, pp 189 -190
26. Prof.Dr. Kurbanov Mirza (aztu), Dr.-ing. Tatardar Farida. Alternativ enerjinin generasiyası və elektrik şəbəkələrinə qoşulması. Magistr təhsili üçün- Elektroenergetika ixtisası üzrə. Tempus Projekt: 516678 Tempus-1-2011-1-De-Tempusjpcr) Anpassung Des Lehrbetriebs An Den Bologna Prozess Im Ingenieurstudium Für Aserbaidshan. Baku 2015, s.103
  27. N. A. Safarov, F.N. Tatardar, S. S. Amirov. The Hybride Composites Based New Materials For The Electromechanical And Acoustico-Electrical Converters/ Journal of Non-Oxide Glasses Vol. 9, No 1, 2017, p. 19 – 23. [https://chalcogen.ro/19\\_SafarovNA.pdf](https://chalcogen.ro/19_SafarovNA.pdf)
  28. E. Nakhmedov, O. Alekperov, F. Tatardar, Yu. M. Shukrinov, I. Rahmonov, and K. Sengupta. Effect of magnetic field and Rashba spin-orbit interaction on the Josephson tunneling between superconducting nanowires/ PHYSICAL REVIEW B 96, 014519 (2017). P. 1-15 <https://journals.aps.org/prb/abstract/10.1103/PhysRevB.96.014519>
  29. F.N. Tatardar, M. A. Kurbanov , N. A. Safarov , Sh. Sh. Amirov , O. A. Aliyev. Plasma methods for nanostructuring the polymer matrix of piezoelectric nanocomposites/ ajp fizika 2018 vol. XXiv №1, section: en. P. 18-23 [http://www.physics.gov.az/physart/168\\_2018\\_01\\_18\\_en.pdf](http://www.physics.gov.az/physart/168_2018_01_18_en.pdf)
  30. M. A. Kurbanov, F. N. Tatardara, N. A. Safarov, I. S. Ramazanova, Z. A. Dadashev, I. A. Faradzhzade, K. K. Azizova, and A. F. Gochueva. New Technology of High-Sensitivity Ferro/Piezoelectric Materials Based on Micro- and Nanostructured Hybrid Polymers. Technical Physics, 2019, Vol. 64, No. 5, pp. 693–697 <https://ui.adsabs.harvard.edu/abs/2019JTEPh..64..693K/abstract>
  31. E. Nakhmedov, E. Nadimi, S. Vedaei, O. Alekperov, F. Tatardar, A. I. Najafov, I. I. Abbasov, and A. M. Saletsky. Vacancy mediated magnetization and healing of a graphene monolayer, PHYSICAL REVIEW B 99, 125125 (2019) <https://journals.aps.org/prb/abstract/10.1103/PhysRevB.99.125125>
  32. E. Nakhmedov, B.D. Suleymanlic, O.Z. Alekperova, F. Tatardar, H. Mammadov, A. Konovko, A.M. Saletskye, Yu.M. Shukrinov, K. Senguptah, B. Tanatari. Josephson current between two p-wave superconducting nanowires in the presence of Rashba spin-orbit interaction and Zeeman magnetic fields. Physica C: Superconductivity and its applications 579 (2020) 1353753 <https://www.sciencedirect.com/science/article/abs/pii/S0921453420302495>
  33. M.Ə.Qurbanov, F.N. Tatardar, İ.S. Ramazanova, A.F.Nurəliyev, Z.A.Dadaşov. Polimer – nanoölçülü və polimer– mikroölçülü kompozitlərin hibridinin yaradılması üçün pyezoelektrik fazalı altlığın alınması texnologiyası. AJP FİZİKA 2021 volume XXVII №3, section: Az [http://physics.gov.az/physart/299\\_2021\\_03\\_03\\_az.pdf](http://physics.gov.az/physart/299_2021_03_03_az.pdf)
  34. Bahruz Suleymanli , Enver Nakhmedov , Oktay Alekperov, Farida Tatardar , Bilal Tanatar. Motion of two-dimensional quantum particle under a linear potential in the presence of Rashba and Dresselhaus spin–orbit interactions/ Solid State Communications, [Volume 342](#), 1 February 2022, 114582. [1-s2.0-S0038109821003665-main.pdf](https://doi.org/10.1016/j.ssc.2021.114582)
  35. B. Emdadi , A. Asimov , F. Tatardar. Graphene-Based Cathode Materials For Dye-Sensitized Solar Cells: A Review/ AJP FIZİKA 2022 volume XXVIII № 2, section En. <http://physics.gov.az/archen.html>
  36. B. Emdadi, A. Asimov, F. Tatardar. QUANTUM DOTS DYE-SOLAR CELLS SENSITIZED: A REVIEW <http://www.physics.gov.az/archen.html>
  37. F.N. Tatardar. New materials for the electromechanical and acoustoelectric transducers/ AJP FIZİKA 2022 section C: Conference L.M. Imanov [http://www.physics.gov.az/index\\_main2.html](http://www.physics.gov.az/index_main2.html)
  38. F.N. Tatardar. Effects Of Electric Discharge Plasma Treatment on The Polymer Composites/ AJP FIZİKA 2022 section C: Conference M.H. Shahtakhtinski [http://www.physics.gov.az/index\\_main2.html](http://www.physics.gov.az/index_main2.html)
  39. Bahruz Suleymanlia, , Enver Nakhmedov , Farida Tatardar, and Bilal Tanatar. The diagrammatic method of Berezinskii for one-dimensional disordered wire with spin-orbit interaction/ Physica E:

Low-dimensional Systems and Nanostructures. 2023

<https://ui.adsabs.harvard.edu/abs/2023PhyE..14615550S/abstract>

40. F.N Tatardar, M.A Kurbanov, I.S Ramazanova, G.K Guliyeva, A. Nuraliyev, Z.A Dadashov. New materials for the electromechanical and acoustoelectric transducers/ Ferroelectrics. Volume 606, Issue 1. Page 30-38, 2023  
<https://www.tandfonline.com/doi/abs/10.1080/00150193.2023.2189840>
41. Levent Paralı, Farida Tatardar, Muhterem Koç, Ali Sarı, Rasoul Moradi. The piezoelectric response of electrospun PVDF/PZT incorporated with pristine graphene nanoplatelets for mechanical energy harvesting, Volume 35, article number 41, 2024.  
<https://link.springer.com/article/10.1007/s10854-023-11798-5>