

# CURRICULUM VITAE

## 1. BIOGRAPHICAL STATEMENT

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First Name: FARRUKH  
Family Name: MUKHAMEDOV  
Date of Birth: 1975, 2 JANUARY  
Birth Place: TASHKENT, UZBEKISTAN  
Gender: MALE  
h-index (SCOPUS): 20  
h-index (Google scholar): 27  
Status: MARRIED & THREE CHILDREN  
Nationality: UZBEKISTAN  
Position: PROFESSOR  
Affiliation: DEPARTMENT OF MATHEMATICAL SCIENCES  
Mailing Address: COLLEGE OF SCIENCE, UNITED ARAB EMIRATES UNIVERSITY  
Postal Code: P.O. BOX, 15551  
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Country: UAE  
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## 2. EDUCATION

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- (a) Master thesis (MSc) with "distinction" *Models with interactions*, Tashkent State University, June, 1996,  
Supervisor: Prof. Nasir Ganikhodjaev
- (b) Doctoral thesis (PhD) *Markov states and quadratic operators defined on von Neumann algebras*, Institute of Mathematics of Academy Sciences of Uzbekistan, 27/05/1998,  
Supervisor: Prof. Nasir Ganikhodjaev  
Referees: 1. Prof. Vladimir Chilin,  
2. Dr. Furkat Zakirov  
Leading Organization: Faculty of Mechanics & Math., Lomonosov Moscow University (Russia)

- (c) Habilitation thesis (Doctor of Science) *Quantum lattice models, quantum quadratic processes and their ergodic properties*,  
National University of Uzbekistan, 05/05/2005  
Referees: 1. Prof. Shavkat Ayupov,  
2. Prof. Igor Volovich  
3. Prof. Ahtam Dzhaliolov  
Leading Organization: Faculty of Mechanics & Math.,  
Kazan Federal University (Russia)
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### 3. ACADEMIC VISITS ABOARD

Host institution, country:	Reason for visit	From (d/m/y):	To (d/m/y):
1. Institute for information transmission Problems, Moscow, Russia	For discussion of results	19/06/2000	24/06/2000
2. Institute for information transmission problems, Moscow, Russia	for discussion of results	20/06/2002	27/06/2002
3. The Abdus Salam Inter. Centre for Theoretical Physics, Trieste, Italy	Math. Fellowship	16/09/2002	14/11/2002
4. Mathematical Department, University of Tor Vergata, Rome, Italy	Italian-CNR-Fellowship	28/07/2003	28/01/2004
5. The Abdus Salam Inter. Centre for Theoretical Physics, Trieste, Italy	Math. Fellowship	04/02/2004	29/04/2004
6. Centro Vito Volterra University of Tor Vergata, Rome, Italy	Collaboration	15/03/2004	30/03/2004
7. Art and Science Faculty, Harran University, Sanliurfa, Turkey	NATO-TUBITAK Fellowship	17/05/2004	11/08/2004
8. Statistical Lab. Cambridge University, UK	Visitor	2/11/2004	16/11/2004
9. Centro Vito Volterra, Italy University of Tor Vergata, Rome, Italy	Collaboration	18/06/2006	22/06/2006

10. Mathematical Modeling Center, Växjö University, Sweden	Collaboration	10/12/2006	18/12/2006
11. Art and Science Faculty, Harran University, Sanliurfa, Turkey	NATO-TUBITAK Fellowship	09/05/2008	1/06/2008
12. The Abdus Salam Inter. Centre for Theoretical Physics, Trieste, Italy	Junior Associate	29/04/2010	30/06/2010
13. Faculty of Education Zirve University, Gaziantep, Turkey	TUBITAK Fellowship	29/06/2012	28/07/2012
14. Faculty of Education Zirve University, Gaziantep, Turkey	TUBITAK Fellowship	05/01/2014	04/02/2014
15. Faculty of Education Zirve University, Gaziantep, Turkey	TUBITAK Fellowship	19/06/2014	04/07/2014
16. The Abdus Salam Inter. Centre for Theoretical Physics, Trieste, Italy	Junior Associate	15/06/2015	03/09/2015
17. International Islamic Univ. Malaysia Faculty of Science, Kuantan, Malaysia	Visiting Professor	7/08/2018	10/08/2018

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## 4. CONFERENCES

Host institution, country:	Topic of Conference	From (d/m/y):	To (d/m/y):
1. Samarkand State Univer. Uzbekistan	Inter. Conf. "Some topics of Math".	3/10/1996	10/10/1996
2. Institute of Mathematics, Tashkent, Uzbekistan	Uzbek-Franco Colloq. "Algebra and Operator Theory"	12/04/1997	18/04/1997
3. Institute of Mathematics, Kiev, Ukraine	Conference in Probab. Theory and Math. Stat.	8/06/1999	12/06/1999
4. Barcelona, Spain	3rd European Congress of Mathematics	10/07/2000	14/07/2000
5. Institute of Mathematics, Kiev, Ukraine	Ukrainian Math. Congress	20/08/2001	23/08/2001
6. Moscow Independent University Russia	Conference on Math. Physics	27/08/2001	31/08/2001
7. Beijing, China	International Congress of Mathematicians	20/08/2002	28/08/2002
8. Nato Advanced Study Institute Edinburgh State University Edinburgh, UK	Workshop on Conformal invariance and special random processes	8/07/2003	21/07/2003
9. Levico Terme, Italy	Int. Conf. quantum and classical Levi processes	27/09/2003	3/10/2003
10. Leuven, Belgium	Summer School on Fund. Problems of Statis.Phys.	3/09/2005	16/09/2005
11. Isaac Newton Inst. for Math. Sci., Cambridge, UK	Workshop on Relaxation Dynamics of Macroscopic Systems	9/01/2006	13/01/2006
12. International Center for Theoretical Physics, Trieste Italy	Workshop on Quantum Cryptography, Quantum Information and technology	12/06/2006	22/06/2006
13. Universidade de Aveiro Aveiro, Portugal	Inter. Conf. "View on ODE's"	22/06/2006	24/06/2006
14. Istanbul Kultur Univ. Istanbul, Turkey	Inter. Symp. Chaos & Complex Systems	6/05/2008	9/05/2008
15. Int. Islamic Univ. Malaysia Kuala Lumpur, Malaysia	International conf. on advancement in Sci. & Tech.	13/06/2008	15/06/2008
16. National Univ. Malaysia Kuala Lumpur, Malaysia	International Symp. on New Develop. Geom. Function Theory & its Appl.	10/11/2008	13/11/2008
17. National University of Uzbekistan, Tashkent	Inter. Conf. Modern Problems of Appl. Math. & Infor.Tech. - Al Khorezmiy 2009	18/09/2009	21/09/2009

18. Institute of Mathematics Academy Sci. Rep. of Uzbekistan, Tashkent	Inter. Conf. Control and Optimization of Dynamical Systems - CODS -2009	28/09/2009	30/09/2009
19. Institute for Mathematical Research & UPM, Kuala Lumpur, Malaysia	4th Inter. Conf. Research & Education In Math. Sci. ICREM4	21/10/2009	23/10/2009
20. Institute of Advanced Technology (ITMA)& UPM, Kuala Lumpur, Malaysia	Inter. Adv. Technology Congress - ATCi2009.	3/11/2009	5/11/2009
21. Tokyo Univ. of Science Chiba Campus, Japan	Inter. Conf. on Quantum Bio-Informatics & Comp.-QBIC2010	10/03/2010	13/03/2010
22. The Abdus Salam ICTP Trieste, Italy	Workshop on Quantum Statis. Mechanics, Computation and Information	14/06/2010	18/06/2010
23. The Abdus Salam ICTP Trieste, Italy	Summer School and Conf. on Hodge Theory & Related Topics	14/06/2010	02/07/2010
24. Faculty of Engineering IIUM, Kuala Lumpur, Malaysia	Inter. Conf. on Math. Appl. in Engineering -ICMAE-2010	3/08/2010	4/08/2010
25. IMU & Univ. of Hyderabad Hyderabad, India	Inter. Congress of Mathematicians ICM-2010	20/08/2010	27/08/2010
24. Faculty of Science UTAR, Kuala Lumpur, Malaysia	The 6th IMT-GT Conf. on Math. Statistics & Appl.-ICMSA2010	3/11/2010	4/11/2010
25. Institute for Math. Research, UPM, Malaysia	Inter. Conf. on Math Computational Biology, ICMCB2011	12/04/2011	14/04/2011
26. Univ. Tun Hussein Onn, Kuala Lumpur,, Malaysia	Inter. Seminar on the Appl. Science & Mathematics	1/11/2011	3/11/2011
27. Univ. Technology Mara Malaysia	Inter. Conf. on Appl. Sciences, Mathematics & Humanities (ICASMH2011)	14/11/2011	15/11/2011
28. UniMAP, Penang, Malaysia	2nd Regional Conf. on Appl. and Eng. Math.-RCAEM-2012	30/05/2012	31/05/2012
29. Faculty of Engineering IIUM, Kuala Lumpur, Malaysia	Inter. Conf. on Math. Appl. in Engineering -ICMAE-2012	3/07/2012	4/07/2012
30. Bernoulli Soc. Istanbul, Turkey	8th World Congress in Probab. & Statist.	9/07/2012	14/07/2012
31. Faculty of Science IIUM, Kuantan, Malaysia	Inter. Conf. on Adv. Science & Tech.-iCAST2012	7/11/2012	10/11/2012

32. Univ. Putra Malaysia Kuala Lumpur, Malaysia	Inter. Conf. on Math. Sci. & Statistics-ICMSS2013	5/02/2013	7/02/2013
33. Samarkand State Univ. Samarkand, Uzbekistan	Inter. Seminar on Math. and Natural Sciences	15/08/2013	17/08/2013
34. Steklov Math. Inst Moscow, Russia	34th Inter. Conf. on Quantum Probab. & Relat. Topics	16/09/2013	20/09/2013
35. Inst. Math. Sci. NUS, Singapore	Workshop on IDAQP	3/03/2014	5/03/2014
36. UniMAP, The Gurney Resort, Hotel, Penang, Malaysia	Inter. Conf. on Math. Eng. Indust. Appl. ICoMEIA2014	28/05/2014	30/05/2014
37. IMU & Korean Inst. Adv. Stud., COEX, Seoul, Korea	Inter. Congress of Mathematicians ICM-2014	13/08/2014	21/08/2014
38. Chungbuk National Univ. Korea	35th Inter. Conf. on Quantum Probab. & Relat. Topics	22/08/2014	26/08/2014
39. Tokyo Univ. Science Chiba Campus, Japan	QBIC Workshop	22/10/2014	26/10/2014
40. Hacettepe Univ. Ankara, Turkey	Workshop on Appl. Topol. in Math. & Comp. Sci.	7/09/2015	8/09/2015
41. National Univ. Uzbekistan Tashkent, Uzbekistan	Conf. Algebra, Analysis & Quantum Probability-2015.	10/09/2015	12/09/2015
42. Univ. Gottingen, Germany	Dyn. Methods in Open Quantum Systems	16/11/2016	19/11/2016

## 5. AWARDS & SCHOLARSHIPS

- 1 Prize winner in Mathematics of Academy Sciences of the Republic of Uzbekistan, 1999.
- 2 Grantee for ECM-2000, Barcelona, Spain, sponsored by European Math. Union.
- 3 Grantee for ICM-2002, Beijing, China, sponsored by International Math. Union.
- 4 Fellowship grand received from International Center for Theoretical Physics(ICTP), 2002 (two months duration).
- 5 Grantee for NATO-Advanced Studies, Edinburgh, UK.
- 6 CNR-fellowship grant received from the Italian Center of National Researches, 2003 (six months duration).
- 7 Fellowship grant received from International Center for Theoretical Physics (ICTP), 2004 (three months duration).
- 8 Fellowship grant received from NATO-TUBITAK PC-B Programme, 2004 (three months duration).
- 9 TWAS Prize winner among young scientist of developing countries, 2005.
- 10 Grantee for Summer School on Fundamental Problems of Statis.Phys 3 - 16 September 2005, Leuven, Belgium.
- 11 PosDoc FCT (Portugal) grant SFRH/BPD/17419/2004.

- 12 Grantee for Workshop on Relaxation Dynamics of Macroscopic Systems, Cambridge, UK, 2006
- 13 Grantee for Workshop and Int. Conf. on Quantum Cryptography, Quantum Information and Technology, Trieste, Italy, 2006
- 14 Fellowship grant received from TUBITAK (Turkey) Programme, 2008 (one months duration).
- 15 Junior Associate award of the Abdus Salam International Center for Theoretical Physics (ICTP), UNESCO, Trieste, Italy, 2009 - 2014.
- 16 Bronze medal at IIUM Research Invention and Innovation Exhibition 2010, (26-27 January 2010, IIUM) for the work "Lattice models with interactions on Cayley tree".
- 17 Bronze medal at IIUM Research Invention and Innovation Exhibition 2010, (26-27 January 2010, IIUM) for the work "Quantum Markov Chains on a Cayley tree".
- 18 Grantee for ICM-2010, 19-27 August 2010, Hyderabad, India, sponsored by International Math. Union.
- 19 Bronze medal at IIUM Research Invention and Innovation Exhibition 2011, (9-10 February 2011, IIUM) for the work "Advanced Fixed Point Theorems for Nonlinear Operators".
- 20 Bronze medal at IIUM Research Invention and Innovation Exhibition 2011, (9-10 February 2011, IIUM) for the work "Quantum Phase Transitions in  $XY$  -models".
- 21 Bronze medal at IIUM Research Invention and Innovation Exhibition 2011, (9-10 February 2011, IIUM) for the work "On  $\xi^s$ -Quadratic Stochastic Operators".
- 22 Bronze medal at IIUM Research Invention and Innovation Exhibition 2012, (21-22 February 2012, IIUM) for the work "On Lotka-Volterra evolution law".
- 23 Outstanding Researcher Award in 2011, Faculty of Science, IIUM, 2012.
- 24 Bronze medal at IIUM Research Invention and Innovation Exhibition 2013, (19-20 February 2013, IIUM) for the work "Quantum Quadratic Operators on  $M_2(C)$ ".
- 25 Silver medal at IIUM Research Invention and Innovation Exhibition 2013, (19-20 February 2013, IIUM) for the work "A Dynamical system approach to Phase transitions for  $p$ -adic Potts models".
- 26 Grantee for ICM-2014, 13-21 August 2014, Seoul, South Korea, sponsored by the Korean Institute for Adv. Stud.
- 27 Best research paper Award, Faculty of Science, IIUM, 2015.
- 28 Top 10 % Publication Award, UAEU, 2019.
- 29 TOP-2% of scientists in the world in 2021.
- 30 Top 10 % Publication Award, UAEU, 2021.

## 6. PROJECTS & GRANTS

Project leader: "*Infinite dimensional Volterra type operators*"- EDW B 0801-58, funded by IIUM, 2008-2009 (RM 20000) (completed);

Project leader: "*Dynamics of some class of quadratic stochastic operators and its applications*"- 01-01-08-SF0079, funded by the Malaysian Ministry of Sci. Tech. Innovation, 2009-2010 (RM 124000);

Co-researcher: "*Quantum Markov chains, quantum quadratic stochastic processes*"-FRGS0308-91, funded by the Malaysian Ministry of Higher Education, 2008-2010 (RM 58000);

Project leader: "*On generalized Gibbs measures of a countable state  $p$ -adic Potts model and their properties*" -FRGS0409-109, funded by the Malaysian Ministry of Higher Education,

2009-2011 (RM 37000);

Project leader: "*On stability Lotke-Volterra type operators: Finite dimensional case*"- EDW B 0905-303, funded by IIUM, 2009-2010 (RM 20000);

Project leader: "*Bistochastic quadratic operators and their dynamics*"- funded by the Malaysian Ministry of Sci. Tech. Innovation, 2010 (RM 17600);

Project leader: " *$\xi^s$ -Quadratic stochastic operators on 2-dimensional simplex*"- EDW B 11-128-0467, funded by IIUM, 2011-2012 (RM 20000);

Project leader: "*Lattice models with competing interactions*" - EDW A11-241-1032, funded by IIUM, 2011-2012 (RM 5000);

Co-researcher: "*Quantum Quadratic Operators and Quadratic Processes*"- FRGS11-022-0170, funded by the Malaysian Ministry of Higher Education, 2011-2012 (RM 52000);

Co-researcher: "*Critical Phenomena and Aging in Complex Networks*" - - EDW B11-159-0637, funded by IIUM, 2011-2013 (RM 20000);

Project leader: "*On a class of  $p$ -adic dynamical systems*" - - EDW A12-621-1412, funded by IIUM, 2012-2013 (RM 5000);

Project leader: "*Cubic Equations on the  $p$ -Adic Field and Some Their Application*" - - EDW B13-029-0914, funded by IIUM, 2013-2015 (RM 20000);

Co-researcher: "*Dynamics of a class Of Quadratic Stochastic Operators: on the 2D simplex*" - - EDW B13-019-0904, funded by IIUM, 2013-2015 (RM 20000);

Project leader: " *$P$ -Adic Statistical Models And Dynamics Of Localized Excitations of Bose-Einstein Condensates*" - - ERGS13-024-0057, funded by MOHE, Malaysia 2013-2015 (RM 77000);

Co-researcher: "*Quartic Equation over  $p$ -adic filed*- ERGS13-025-0058, funded by MOE, Malaysia 2013-2014 (RM 33000);

Project leader: "*Generalized the zero-two law for positive contractions of  $L_p$ -spaces*- FRGS14-135-0376, funded by MOE, Malaysia, 2014 (RM 25000);

Project leader: "*Infinite dimensional orthogonal preserving quadratic stochastic operators*- UAEU Start-Up 2016 Grant, No.31S259, funded by UAEU, 2016-2018 (AED 238000);

Project leader: "*A class of quantum quadratic operators on matrix algebras*" UAEU SURE project, 2019-2020 (AED 37000).



Project leader: "Chaotic and mixing  $p$ -adic dynamical systems associated with renormalized groups of lattice models" - UAEU UPAR Grant, No. 31S391, funded by UAEU 2019-2021 (AED 200000);

Co-Project leader: "Diagonalizability of Quantum Markov Chains" - funded by Qassim Unir-  
sity, KSA, 2019-2021;

Co-Project leader: "Quantum Random Walks on tree graphs" - funded by Qassim Unir-  
sity, KSA, 2020-2022;

Project leader: "Quantum genetic algebras and their applications" - UAEU UPAR Grant, No. G00003447, funded by UAEU 2021-2025 (AED 506000);

## 7. TALKS ON INVITED SEMINARS AND CONFERENCES

- 1 City seminar on "Functional Analysis", National University of Uzbekistan, Tashkent, Uzbekistan, 1996–2005.
- 2 Seminar on "Operator algebras and their applications", Institute of Mathematics, Tashkent, Uzbekistan, 1996–2005
- 3 "On Quantum quadratic stochastic processes" International Conf. on Some topics of Math., Samarkand, Uzbekistan, 5 October, 1996
- 4 "On quantum Markov fields", Uzbek-Franco Colloq. Institute of Mathematics, Tashkent, Uzbekistan, 14 April, 1997.
- 5 "Regularity of Quantum quadratic stochastic processes", Conference in Probab. and Math. Stat., Institute of Math. Kiev, Kiev, Ukraine, 10 June 1999.
- 6 "A von Neumann algebra corresponding to disordered phase of Potts model", Ukrainian Math. Congress, Institute of Mathematics, Kiev, Kiev, Ukraine, 23 August 2001.
- 7 "Von Neumann algebras corresponding translational invariant Gibbs states of Ising model on a Cayley tree", Conference on Mathematical Physics, Moscow Independent University, Moscow, Russia, 31 August, 2001.
- 8 "Ergodic principle of quantum quadratic stochastic processes", Dep. Mathematics, International Center for Theoretical Physics, Trieste, Italy, 14 October, 2002.
- 9 "On factor associated with quantum Markov states corresponding to nearest neighbor models on a Cayley tree", International Conf. on Quantum and classical Levi processes, Levico, Italy, 29 September, 2003.
- 10 "Quantum lattice models and associated von Neumann algebras", City seminar on "Mathematical Physics", National University of Uzbekistan, Tashkent, Uzbekistan, 14, 21 November, 2004.
- 11 "Quantum Markov states and associated von Neumann algebras", Dep. Mathematics, International Center for Theoretical Physics, Trieste, Italy, 22 April, 2004.
- 12 "Phase transitions of the Ising model with competing interactions on the Cayley tree", Summer School on Fundamental Problems of Statis.Phys. Leuven, Belgium, 3 – 16 September 2005.
- 13 "Ising model with competing interactions and Gibbs measures", Seminar on Complex Networks, Departamento de Fisica, Universidade de Aveiro, Aveiro, Portugal, 9 October, 2005.
- 14 "On  $p$ -adic Gibbs measures and  $p$ -adic dynamical systems", Dynamical Systems Seminars, The School of Mathematics at Manchester University, UK, 11 January, 2006, (**Keynote Speaker**).
- 15 "On a recursive equation, indexed by a tree, over  $p$ -adic numbers", Seminar at Departamento de Matematica, Universidade de Aveiro, Portugal, 28 April, 2006.
- 16 "On the chaotic behavior of a generalized logistic  $p$ -adic dynamical system", International Conf. "View on ODE's", Aveiro, Portugal, 23 June, 2006, (**Keynote Speaker**).

- 17 "On  $p$ -adic Potts models on the Cayley tree", Seminar at Departamento de Fisica, Universidade de Aveiro, Portugal, 15 February, 2007 (**Keynote Speaker**).
- 18 "On infinite dimensional Volterra type operators", International Symp. Chaos & Complex Systems, Istanbul Kultur University, Istanbul, Turkey, 7 May, 2008.
- 19 "On bijectivity of infinite dimensional Volterra type operator", International conf. on advancement in Sci. and Tech., IIUM, Kuantan, Malaysia, 13 June, 2008.
- 20 "Dynamics of quantum quadratic stochastic operators on  $M_2(C)$ ", International Symp. on New developments of Geometric Function Theory and its Appl., National University of Malaysia, Malaysia, 11 November, 2008.
- 21 " $p$ -adic dynamical systems and  $p$ -adic Potts models", one day seminar on Mathematical Physics, University Putra Malaysia, Malaysia, 13 February, 2009, (**Keynote Speaker**).
- 22 "Ergodic properties of  $C^*$ -dynamical systems", seminar at Mech.& Math. Faculty of National University of Uzbekistan, Tashkent, Uzbekistan, 2 April, 2009 (**Keynote Speaker**).
- 23 "Generalized quantum Markov chains on a Cayley tree", and "M-Lotka-Volterra type operators", Inter. Conf. Modern Problems of Appl. Math. & Information Tech. - Al Khorezmiy 2009, Tashkent, Uzbekistan, 18, 19 September, 2009 (**Keynote Speaker**).
- 24 "On homotopy of volterrian quadratic stochastic operator", and "On martingal convergence theorems in JW- algebras", International Conf. Control and Optimization of Dynamical Systems - CODS-2009, National Univ. Uzbekistan, Tashkent, Uzbekistan, 28,29 September, 2009 (**Keynote Speaker**).
- 25 "On doubly stochastic operators defined on infinite dimensional space", 4th International Conf. on Research & Education on Mathematical Sciences-ICREM4, Renaissance Hotel Kuala Lumpur, Malaysia, 21 October 2009 (**Invited Speaker**).
- 26 "On generalized Quantum Markov Chains on trees", International Advanced Technology Congress – ATCi2009, Putra World Trade Centre (PWTC), Kuala Lumpur, Malaysia, 3 November 2009 (**Invited Speaker**).
- 27 "On Quantum Markov Chains on Cayley tree and related chains to  $XY$ -model", Faculty of Science, University Putra Malaysia, 17 February, 2010 (**Keynote Speaker**).
- 28 "Quantum Markov Chains on Cayley tree and chains related to certain models", Tokyo University of Science, Chiba, Japan, 12 March, 2010 (**Invited Speaker**).
- 29 "Unique mixing  $C^*$ -dynamical systems", Dynamical Seminar of Mathematical Department of the Abdus Salam International Centre for Theoretical Physics, Trieste, Italy, 21 June, 2010 (**Keynote Speaker**).
- 30 "On dynamics of quantum quadratic operators on  $M_2(C)$ ", Inter. Conf. on Mathematical Applications in Engineering (ICMAE'10), Kuala Lumpur, Malaysia, 3 August, 2010 (**Invited Speaker**).
- 31 "On phase transition for countable state  $p$ -adic Potts model on the Cayley tree", Inter. Congress of Mathematicians 2010, Hyderabad, India, 22 August, 2010 (**Invited Speaker**).
- 32 "On dynamical systems and phase transitions for  $Q+1$ -state  $p$ -adic Potts Model on the Cayley tree", The 6th IMT-GT Conf. Math., Statistics and its Applications (ICMSA2010), Kuala Lumpur, Malaysia, 3 November 2010 (**Keynote Speaker**).
- 33 "On dominant contractions and a generalization of the zero-two law", seminar at Mech.& Math. Faculty of National University of Uzbekistan, Tashkent, Uzbekistan, 31 March, 2011 (**Keynote Speaker**).
- 34 "On dynamics of  $\xi^s$ -quadratic stochastic operators", Inter. Conf. on Mathematics and Computational Biology (ICMCB2011), Melaka, Malaysia, 12 April, 2011 (**Invited Speaker**).

- 35 "On Lotka-Volterra type operators", Inter. Conf. on Mathematics and Computational Biology (ICMCB2011), Melaka, Malaysia, 12 April, 2011 (**Invited Speaker**).
- 36 "On phase transition for countable state  $p$ -adic Potts model the Cayley tree", Inter. Seminar on the Application of Science & Mathematics (ISASM 2011), PWTC, Kuala Lumpur, Malaysia, 1 November 2011 (**Invited Speaker**).
- 37 " $G$ -decomposition of matrices and doubly stochastic quadratic operators", Inter. Seminar on the Application of Science & Mathematics (ISASM 2011), PWTC, Kuala Lumpur, Malaysia, 1 November 2011 (**Invited Speaker**).
- 38 "On generalized  $p$ -adic logistic maps", Inter. Seminar on the Application of Science & Mathematics (ISASM 2011), PWTC, Kuala Lumpur, Malaysia, 2 November 2011 (**Invited Speaker**).
- 39 "Measurable bundles of  $C^*$ -dynamical systems", Inter. Conf. on Applied Sciences, Mathematics & Humanities (ICASMH 2011), Royale Bintang Resort, Seremban, Malaysia, 14 November 2011 (**Invited Speaker**).
- 40 "Dobrushin's coefficient and weak ergodicity in von Neumann algebras", Institute of Mathematics, Tashkent, Uzbekistan, 25 June, 2012 (**Keynote Speaker**).
- 41 " $p$ -adic dynamical systems and related topics", Faculty of Education, Zirve University, Gaziantep, Turkey, 25 July, 2012 (**Keynote Speaker**).
- 42 "On Dobrushin ergodicity coefficient of noncommutative Markov chains", Inter. Conf. Advancement of Science and Technology (iCAST2012), Vistana Hotel, Kuantan, Malaysia, 7 November, 2012 (**Invited Speaker**).
- 43 "On quasi quantum quadratic operators on  $M_2(C)$ ", Inter. Conf. Math. Sciences and Statistics (ICMSS2013), Sunway Putra Hotel, Kuala Lumpur, Malaysia, 5 February, 2013. (**Invited Speaker**)
- 44 "Dobrushin ergodicity coefficient and ergodicity of nonhomogeneous Markov chains", 34th Inter. Conf. on Quantum Probability and Related Topics, The Steklov Math. Inst. Russian Acad. Sci. Moscow, Russia, 17 September, 2013 (**Invited Speaker**).
- 45 "Quantum Quasi quadratic operators", Workshop on Infin. Dim. Anal. Quantum Probab., Inst. Math. Sci., National Univ. Singapore, 4 March, 2014 (**Invited Speaker**).
- 46 "Ergodic Properties of non-homogeneous Markov chains on Banach spaces", Inter. Congress of Mathematicians 2014, Seoul, South Korea, 16 August, 2014 (**Invited Speaker**).
- 47 "Phase transitions for Quantum Markov Chains associated with Ising model with competing interactions on a Cayley tree", 35th Inter. Conf. on Quantum Probability and Related Topics, Chungbuk National University, South Korea, 23 August, 2014 (**Invited Speaker**).
- 48 "On Kadison-Schwarz operators", QBIC-2014 Workshop, 25 October, 2014, Tokyo University of Science, Tokyo, Japan (**Invited Speaker**).
- 49 " $p$ -adic difference equations and its applications", Workshop on Appl. Topology in Math. and Computer Sci., 7 September, 2015, Hacettepe University, Ankara, Turkey (**Keynote Speaker**).
- 50 "Uniform stability and weak ergodicity of non-commutative Markov chains", Conf. Algebra, Analysis and Quantum Probab.-2015, 11 September, 2015, National University of Uzbekistan, Tashkent, (**Invited Speaker**).
- 51 "Open Quantum Random Walks and associated Quantum Markov Chains", 37th Inter. Conf. on Quantum Probability and Related Topics, Inter. Islamic Univ. Malaysia, Kuantan, 28 August, 2016 (**Invited Speaker**).

- 52 "Open Quantum Random Walks and Quantum Markov states", Winter school on Dynamical Methods in Open Quantum Systems, Mathematisches Inst., Univ. Göttingen, Göttingen, Germany, 16 November, 2016, (**Invited Speaker**).
- 53 "Phase transition and chaos in  $p$ -adic Ising model on the Cayley tree", The 4th International Workshop on Nonlinear and Modern Mathematical Physics (NMMP2017), 4 May 2017, Putrajaya, Malaysia, (**Invited Speaker**).
- 54 "Quantum Markov Chains associated with statistical mechanics models", 38th Inter. Conf. on Quantum Probability and Related Topics, Tokyo University of Science, Noda, Japan, 3 October, 2017 (**Invited Speaker**).
- 55 "Derivations of genetic Volterra algebras", 2nd GRRRT-2018, Khorfakan Oceanic Hotel, UAEU, UAE, 19 November, 2017 (**Invited Speaker**).
- 56 "Quantum  $S$ -mixing entropy", 39th Inter. Conf. on Quantum Probability and Related Topics, Bellavista Hotel, Levico Terme, Italy, 16 October, 2018 (**Invited Speaker**).
- 57 "Chaos and Phase transitions in  $p$ -adic lattice models", The 7th International Conference on  $p$ -adic Mathematical Physics and its Applications, 1 October, 2019, Covilha, Portugal (**Invited Speaker**).
- 58 "Credit System at UAEU", Ministry of Higher Education of Uzbekistan, 17 April, 2020, (Virtual), Tashkent, Uzbekistan **Keynote Speaker**).
- 59 "Applications of  $p$ -adic numbers", Summer School on  $p$ -adic analysis, 2020, (Virtual), 17 August, 2020, Institute of Mathematics, Tashkent, Uzbekistan **Invited Speaker**).
- 60 "Quantum genetic algebras and their properties", QBIC-2020 Workshop (Virtual), 15 October, 2020, Tokyo University of Science, Tokyo, Japan (**Invited Speaker**).
- 61 "A Quantum Markov Chain approach to Phase Transitions for quantum Ising model with competing  $XY$ -interactions on a Cayley tree", Inter. Conference on Mathematical Physics in Memory of Academic V.S. Vladimirov (Virtual), 26 November, 2020, Steklov Mathematical Institute, Moscow, Russia (**Invited Speaker**).
- 62 "On zero-two law for positive contractions of Banach-Kantorovich spaces", the Conference on Ordered Structures with Applications in Economy and Finance, May 3 -7, 2021 (**Invited Speaker**).
- 63 "Hypercyclic, Supercyclic Non-Archimedean Linear Operators", 8th International Conference on  $p$ -adic Mathematical Physics and its applications ( $p$ -adics 2021), May 17-28, 2021, (**Invited Speaker**).
- 64 "Genetic Algebras", The CIMPA school "Non-associative Algebras and their Applications", Madagascar, 30 August-10 September, 2021, (**Invited Speaker**).
- 65 "Kadison-Schwarz operators and their applications", Virtual QBIC Workshop 2021, Tokyo University of Science, 13-15 October, 2021 (**Invited Speaker**).

## 8. SCIENTIFIC EMPLOYMENT AND ACADEMIC RESPONSIBILITY

<u>Research Institution or University</u> Name and place	<u>period of duty</u> From to	<u>Academic</u> <u>responsibilities</u>
Tashkent State University Tashkent	1991 - 1996	Student
Institute of Mathematics Academy Sciences of Uzbekistan, Tashkent	1996 - 1998	Graduate Student
Institute of Mathematics Academy Sciences of Uzbekistan, Tashkent	1998-1999	Junior Scientific Fellow
National University of Uzbekistan, Tashkent	1999 - 2002	post doctoral
National University of Uzbekistan, Tashkent	2003-2004	Associate Professor
National University of Uzbekistan, Tashkent	2004 -2005	Senior Scientific Fellow
Universidade de Aveiro, Aveiro, Portugal	2005 - 2007	PosDoc
International Islamic University Malaysia, Malaysia	2007 - 2012	Associate Professor
International Islamic University Malaysia, Malaysia	2012 - 2016	Professor
The United Arab Emirates University, Al Ain, UAE	2016 up to now	Professor

## 9. TEACHING ACTIVITIES

<u>Subject</u>	<u>Institution</u> From to	<u>period of duty</u>
Pre-calculus, Calculus	High School	1999–2003
Elementary Group Theory	National University Uzbekistan	1998–2000
Theory of Real functions	National University Uzbekistan	1999–2003
Measure Theory		
Functional Analysis	National University Uzbekistan	1999–2004
Ergodic Theory & Ergodic Theorems	National University Uzbekistan	2000–2002
Developing and Protecting Math. Ideas	International Islamic University Malaysia	2007-2008
Vector Analysis	International Islamic University Malaysia	2007-2016
Advanced Analysis	International Islamic University Malaysia	2007-2016
Ergodic Theory II	International Islamic University Malaysia	2008-2015
Introduction to Functional Analysis	International Islamic University Malaysia	2009-2016
Introduction to Complex Analysis	International Islamic University Malaysia	2011-2012
Calculus I	UAEU	2016 Fall, 2017 Spring
Linear Algebra I	UAEU	2016 Fall, 2017 Spring/Fall
Functional Analysis (Grad)	UAEU	2017 Spring
Real Analysis	UAEU	2017 Fall
Real Analysis (Grad)	UAEU	2017 Fall
Calculus II for Eng	UAEU	2018 Spring
Final Year Project	UAEU	2018 Spring
Real Analysis	UAEU	2018 Fall
Linear Algebra for Eng.	UAEU	2018 Fall
Calculus I for Eng	UAEU	2019 Spring
Calculus III	UAEU	2019 Spring
Calculus I	UAEU	2019 Summer
Real Analysis	UAEU	2019 Fall
Calculus I	UAEU	2019 Fall
Functional Analysis (Grad)	UAEU	2020 Spring
Final Year Project (2 Group)	UAEU	2020 Spring
Advanced Measure Theory (Grad)	UAEU	2020 Fall
Real Analysis	UAEU	2020 Fall
Introduction to Analysis	UAEU	2021 Spring
Advanced Measure Theory (Grad)	UAEU	2021 Fall
Linear Algebra for Eng	UAEU	2021 Fall
Differential Eqs for Eng	UAEU	2021 Fall

## 10. SUPERVISION

**Final Year Projects**

No	Name	Title	Metric No & Study year & Institution	Program & Status	Leadership
1	Fikrat Rafikov	$p$ -adic 3-states Potts model	2004 NUUz	B.Sci completed	main supervisor
2	Affah Hanum Bt. Mohd. Jamal	On $\xi^s$ -quadratic stochastic operators and their dynamics	2010 IIUM	B.Sci completed	main supervisor
3	Wan Nur Fairuz Alwani Bt. Wan Rozali	On $\xi^a$ -quadratic stochastic operators	2010 IIUM	B.Sci. completed	main supervisor
4	Intan Nurul Dayana Alladad	Dynamics of generalized logistic maps	2010 IIUM	B.Sci. completed	main supervisor
5	Sarah Afifah binti Abdullah Sani Rozali	Properties of certain Banach spaces	2010 IIUM	B.Sci. completed	main supervisor
6	Wan Nur Fairuz Alwani Bt. Wan Rozali	On $\xi^a$ -quadratic stochastic operators	2010 IIUM	B.Sci. completed	main supervisor
7	Muhd. Hafizuddin Mohd Taha	On Volterra and orthogonality preserving quadratic stochastic operators	2013 IIUM	B.Sci. completed	main supervisor
8	Ahmad Fadillah Embong	$s$ -commuting and $b$ -order quadratic stochastic operators	2014 IIUM	B.Sci. completed	main supervisor
9	Azza Saif Alsuwaidi Sara Ghanem Almazrouei	Associativity of genetic algebras	2018 UAEU	B.Sci. completed	main supervisor

10	Sondos M. Syam Asma S. Alshemili	Algebraic structures of a class of quantum genetic algebras	2020 UAEU	B.Sci. completed	main supervisor
11	Aysha Khaled Nada Salim	Quadratic Equations and Inequalities with parameters	2020 UAEU	B.Sci. completed	main supervisor

### Master Students

No	Name	Title	Metric No & Study year & Institution	Program & Status	Leadership
1	Abduaziz Abduganiev	On Kadison's Schwarz inequality for quantum quadratic operators on $M_2(\mathbb{C})$ and their dynamics	G0838375 2009–2011 IIUM	Master completed	main supervisor
2	Afifah Hanum Bt. Mohd. Jamal	On $\xi^s$ -quadratic stochastic operators and their dynamics on 2 dimensional simplex	G1012864 2010–2012 IIUM	Master completed	main supervisor
3	Wan Nur Fairuz Alwani Bt. Wan Rozali	On $p$ -adic generalized logistic dynamical systems	G1026620 2010–2012 IIUM	Master completed	main supervisor
4	Nurul Akma Supar	A study on marginal Markov processes and construction of quadratic stochastic processes	G1118123 2011–2014 IIUM	Master completed	main supervisor
5	Rukia binti Ali	Ising Model with competing interactions on Cayley tree of order four: an analytic solution	G1021022 2010–2013 IIUM	Master completed	co-supervisor
6	Ahmad Fadillah bin Embong	On $b$ -Bistochastic quadratic stochastic operators and their properties	G1418219 2014–2015 IIUM	Master completed	main supervisor
7	Mohd. Ali Khomeini	Cubic equation over $p$ -adic field and their applications	G141 2014–2016 IIUM	Master completed	co-supervisor



8	Mohd. Hakim Jamil	Phase transitions for lattice models on Cayley trees	G1424327 2014–2016 IIUM	Master completed	co-supervisor
9	Azizi Rosli	On low dimensional orthogonality preservong cubic stochastic operators fixed point and stability	2017–2019 IIUM	Master completed	co-supervisor
10	Rauda Alshamsi	Ground states and phase transition	200202197 2018–2020 UAEU	Master Completed	main supervisor
11	Sondos M. Syam	Flow of a class of quantum genetic algebras	201640069 2020–2022 UAEU	Master on going	main supervisor

### PhD Students

1	Mansoor Saburov	Quantum Markov Chains and Related Nonlinear Dynamical Systems	G0839707 2009–2011 IIUM	PhD completed	main supervisor
2	Murodjon Khamraev	Rational dynamics in $p$ -adic and hyperbolic spaces	2010-2011 Institute of Math. Tashkent	PhD completed	main supervisor
3	Izzat Salem Suleiman Qaralleh	On $\xi^s$ -quadratic stochastic operators and related algebras	G1121989 2012–2014 IIUM	PhD completed	main supervisor
4	Dilmurod Bekbaev	Banach-Kantorovich $C^*$ -algebras and zero-two laws for positive contractions	G1236171 2013–2016 IIUM	PhD completed	main supervisor
5	Mutlay Dogan	$p$ -adic Gibbs measures and Phase transitions of $p$ -adic Ising-Vanniminus and $\lambda$ models on Cayley tree	2013-2015 Selcuk Univ. Turkey	PhD completed	co-supervisor
6	Abdessatar Souissi	Quantum Markov Chains	2014- 2017 Al Manar Univ. Tunisia	PhD completed	co-supervisor

7	Ahmad Fadillah bin Embong	Infinite dimensional orthogonal preserving quadratic stochastic operators	G152 2016–2019 IIUM	PhD completed	main supervisor
8	Mohd. Hakim Jamil	Phase transitions for lattice models on Cayley trees	G1636351 2017–2020 IIUM	PhD completed	co-supervisor
9	Soueidly El Gheteb	Quantum Markov Chains and Fields: Construction and Interaction on the Cayley tree	2016- 2020 Univ. de Carthage Tunisia	PhD completed	co-supervisor
10	Hala Alaquad	Universal Constraints of Kleinian Groups and Hyperbolic Geometry	2016- 2020 UAEU	PhD completed	co-supervisor
11	Hebatallah Jamil AlSakaji	Stochastic Delay Differential Equations and applications	2016- 2021 UAEU	PhD completed	co-supervisor
12	Fouzia Shaheen	C*-algebras and unitary groups	2019 – UAEU	PhD on going	co-supervisor
13	Taimun Qaisar	Quadratic Stochastic processes and delay equations	2020– UAEU	PhD on going	main supervisor
14	Azizi Rosli	Dynamics of Cubic stochastic operators	2020– IIUM	PhD on going	co-supervisor

### PosDocs

No	Name	Title	Metric No & Study year & Institution	Program & Status	Leadership
11	Massimo Ostilli	Critical phenomena in random networks	2011-2012 IIUM	PosDoc completed	main supervisor
12	Mansoor Saburov	Nonlinear dynamics and its applications	2011-2012 IIUM	PosDoc completed	main supervisor

## 11. DEPARTMENTAL &amp; UNIVERSITY ACTIVITIES

- Chair of the Excellence Award Committee, College of Sciences, UAEU; (2017- 2021)
- Chair of the Promotion committee, Department of Mathematical Sciences, UAEU; (2017-2020)
- Member of University Excellence Committee, UAEU; (2017 - 2021)
- A coordinator of Faculty Evaluation Committee (Department level) (2016-2017, 2019-2020).
- Member of Research and Graduate committee, Department of Mathematical Sciences, UAEU; (2017- 2021)
- A member of ABET accreditation team (Department level) (2019-2021)
- A member of Undergraduate Mathematics Competition, UMC, (Department level) 2017.
- A member of the Interview and hiring Committee (Department level) (2017-2020).
- Head of Postgraduate Committee, Faculty of Science, Inter. Islamic Univ. Malaysia; (2015-2016)
- Head of Research, Faculty of Science, Inter. Islamic Univ. Malaysia; (2012 - 2015)

## 12. PUBLIC ACTIVITIES

1. From 2000 up to now: Official Reviewer of Zentralblatt Math;
2. Starring from 2015 official Reviewer of American Math. Society;
3. Reviewer of the following journals:

Name of Journal	(No. papers, year)
Abstract and Applied Analysis	(1, 2014)
Acta Mathematica Scientia	(1, 2012), (1,2019)
Algebra Colloquium	(1,2019)
Applied Mathematics	(1,2016)
Applied and Computational Mathematics	(2, 2014)
Applied Mathematics Letters	(1,2009); (2,2011)
Applied Mathematics & Information Sciences	(1,2009)
Applied Mathematics Journal A- Chinese Universities	(1,2010)
Arab Journal of Basic and Applied Sciences	(1,2021)
Banach J. Math. Anal.	(1,2014)
Boletín Boletín de la Sociedad Matemática Mexicana	(1,2021)
Bulletin Iranian Mathematical Society	(1,2021)
Bulletin Malaysian Mathematical Sciences Society	(2, 2012); (2,2015); (1,2017); (1,2018)
Communications in Contemporary Math.	(1,2019)
Communications of the Korean Mathematical Society	(2,2019)
Communications in Statistics – Theory and Methods	(1,2012)
Discontinuity, Nonlinearity, and Complexity	(1,2020)
DCDIS Series A: Mathematical Analysis	(1,2019)
Dynamical Systems	(1,2021)
Entropy	(1,2020), (1,2021)
European Journal of Pure and Applied Mathematics	(1,2021)
Filomat	(1, 2019), (2,2020)
Fixed Point Theory and Applications	(1,2013); (1, 2014)
Fractal & Fraction	(1,2021)
Frontiers in Physics	(1,2021)
Hacettepe Journal of Mathematics and Statistics	(1,2018); (2,2019); (1,2021)
Indian J. Math.	(1, 2020), (1,2021)
Infin. Dim. Anal. Quant. Probab.& Related Topics	(1,2014); (1,2015); (1,2016)
Information and Computation	(1, 2020), (1,2021)
Iranian J. Sci. & Tech. Transactions A	(1,2021)
International J. Biomathematics	(1,2018)
International J. Modern Phys. B.	(1,2018)
Inter. Jour. Quantum Information	(1,2016)
Journal of Applied Mathematics and Computing	(2,2011); (1,2013)
Journal of Applied Nonlinear Dynamics	(1,2020)
Journal of Biological Systems	(1,2020)
Journal of Computational and Applied Mathematics	(1,2008); (2,2010); (1,2011); (1,2016); (3,2017); (2,2018)

Jour. Inequalities and Appl.	(1,2014); (1,2016)
Journal of Functions Spaces	(1,2014)
Journal of Mathematical Biology	(1,2017), (2,2020)
Journal of Mathematics and Computer Science (JMCS)	(2,2020)
Journal of Nonlinear Sciences and Applications	(1,2017)
Journal of Integer Sequences	(1,2013)
Journal of Mathematical Analysis and Applications	(1, 2006); (1,2011)
Journal of Mathematical and Fundamental Science	(1,2019)
Journal Statistical Mechanics: Theory & Exp.	(1,2007)
Journal Statistical Physics	(1,2018), (1,2019)
Journal of the Franklin Institute	(1, 2007)
The Computer Journal	(1, 2007)
Journal of Physics A: Math. & General	(1, 2008); (1,2016); (1, 2020)
Journal of Taibah University for Science	(1,2018); (1,2019); (2,2020)
Khayyam Journal of Mathematics	(1,2020)
Lobachevskii Journal of Mathematics	(1,2016)
Linear & Multilinear Algebra	(1,2018), (1,2019), (1,2020)
Malaysian Journal of Mathematical Sciences	(1,2009);(2,2010);(1,2011); (1,2012); (4, 2014); (1,2017); (1,2018); (2,2021)
Malaysian Journal of Fundamental and Applied Sciences	(1,2019)
Markov Processes and Related Fields	(1,2020)
Mathematical Notes (Mat. Zametki)	(1,2011)
Methods of Functional Analysis and Topology	(1,2017)
Microelectronics Journal	(1,2020)
Nonlinear Analysis: Theory and Methods	(1, 2012)
Nonlinearity	(1, 2019)
Nonlinear Studies	(1,2020)
Thai Jour. Math.	(1,2021)
Theoretical and Mathematical Physics	(1, 2014), (1,2019)
The Scientific World Journal	(1, 2014)
Turkish Journal of Mathematics	(1,2016)
Open Systems & Information Dynamics	(1, 2021)
Pakistan Journal of Statistics	(1,2018)
Phase Transitions	(1,2016)
Philosophical Transactions A	(1,2017)
Physica A	(1,2007);(1,2016); (1,2017)
Physica E	(1,2021)
Physica Scripta	(1,2018)
Physics Letters A	(1,2008)
Probability in the Engineering and Informational Sciences	(1,2019)
Qualitative Theory of Dynamical Systems	(1,2016); (2,2019), (1,2020)
Quantum Information Processing	(3, 2019); (2,2020); (2,2021)
Reports on Mathematical Physics	(1, 2006); (1,2015)

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Rendiconti del Circolo Matematico di Palermo Series 2	(1,2021)
Sains Malaysiana	(1, 2012); (1,2015); (1,2016)
Statistics	(1,2019)
Statistics & Probability Letters	(1,2012); (1,2015); (1,2019)
Symmetry	(1,2021)
Ukrainian Math. Jour.	(1,2015); (1,2018); (1,2019)

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#### 4. Organizers and judges of Math. Competitions:

several school mathematical competitions (i.e. olympiad) (regional, Republican) during 1997-2004 held in Tashkent;

Mathematical competition held at Faculty of Science, International Islamic University Malaysia, Kuantan, Malaysia, 2007–2012.

#### 5. Membership Societies & Associations

Association for Quantum Probability and Infinite Dimensional Analysis (AQPIDA) since 2003;

American Mathematical Society, since 2018;

International Association of Mathematical Physics, since 2018;

Uzbek Mathematical Society Council Member, since 2021;

#### 6. Editorial Services

Editorial Board of an international journal "p-adic Numbers, Ultrametric Analysis and Applications" (Published by MAIK-NAUKA, and distributed by Springer), (Q3) since 2009.

Editorial Board of an international journal "Journal of Mathematical Analysis " since 2010.

Editorial Board of an international journal "The Scientific World Journal" Mathematical Analysis section, published by Hindawi Publisher ( 2013-2015)

Editorial Board of an international journal "Journal of Probability" published by Hindawi Publisher (2013-2015).

Editorial Board of an international journal "Open Journal of Mathematical Analysis", since 2021.

Editorial Board of an international journal "Open Systems & Information Dynamics", published by World Scientific,(Q1, IF. 1.9), since 2021.

Editorial Board of an international journal "Uzbek Mathematical Journal", published by V. Romanovski Institute of Mathamics, Tashkent, since 2021.

Editorial Board of an international journal "Journal of Egyptian Mathematical Society", published by Springer, since 2021.

Guest Editor *Jour. Phys.: Conf. Ser.* for proceedings International Conference on 37th Quantum Probability and Related Topics 2016, V. 819, IOP Publisher, 2017.

Guest Editor *Jour. Phys.: Conf. Ser.* for Proceedings International Conference on Algebra, Analysis and Quantum Probability 2015, V. 697, IOP Publisher, 2016.

Guest Editor *Jour. Phys.: Conf. Ser.* for Proceedinga International Conference on Advancement in Science and Technology 2012 (iCAST): Contemporary Mathematics, Mathematical Physics and their Applications, V. 435, IOP Publisher, 2013.

#### 7. Examiner for the following thesis:

- (i) Internal examiner for Master degree thesis "Correlation inequalities for Potts model" by Fatimah Abdul Razak, International Islamic Univ. Malaysia, 2007.

- (ii) Internal examiner for PhD degree thesis "Ising models with competing interactions" by Pah Chin Hee, International Islamic Univ. Malaysia, 2008.
- (iii) External examiner for Master degree thesis "On central extensions of nilpotent Lie and Leibniz algebras" by Mouna Bibi Langari, Univ. Putra Malaysia, 2009.
- (iv) Internal examiner for Master degree thesis "Dynamic Systems Corresponding to Some Lattice Models on the Cayley Tree of Arbitrary Order" by Siti Famimah binti Zakaria, International Islamic Univ. Malaysia, 2012.
- (v) Internal examiner for Master degree thesis "Multidimensional Mappings and Lyapunov exponent of Potts model with Competing Interactions" by Mohd. Hirzie Bin Mohd Rodzhan, International Islamic Univ. Malaysia, 2012.
- (vi) External examiner for PhD degree thesis "Classification and derivations of low-dimensional complex dialgebras" by Witriany Binti Basri, Univ. Putra Malaysia, December, 2014.
- (vii) External examiner for PhD degree thesis "On conjugations of circle homeomorphisms with break and critical points" by Sokhobiddin Akhatkulov, National Univ. Malaysia, 2 October, 2015.
- (viii) External examiner for PhD degree thesis "Derivations and centroids of finite dimensional dialgebras" by Mohamed Abubakar Hagi Mohamed, Univ. Putra Malaysia, 19 July, 2016.
- (ix) External examiner for PhD degree thesis "Bornological structures on some algebraic systems" by Anwar Nooruldeen Imran, Univ. Putra Malaysia, 10 December, 2017.
- (x) External examiner for PhD degree thesis "The new development in the convergence of the wavelet expansion of  $L^p(R^2)$ , Sobolev space  $H^s(R^2)$  and  $L^p(S^2)$  functions" by Raghat Sahib Abbas, Univ. Putra Malaysia, 10 July, 2018.
- (xi) External examiner for PhD degree thesis "Behavior of trajectory on quadratic stochastic operators generated by  $\xi^{(as)}$ -QSO and related algebras" by Hamza Abd Al-Qader Yousef, Univ. Malaysia Terengganu, March 2020.

**8. External Reviewer for promotion:**

- (1) Promotion to Associate Professor from Irbid National University, Jordan, 2017;
- (2) Promotion to Professor from Mousha University, Jordan, 2019;
- (2) Promotion to Associate Professor from Emirates School of Technology, UAE, 2020;

**9. External evaluator for grants:**

- External evaluator for National Center of Science and Technology Evaluation, The Republic of Kazakhstan, 2012; 2020; 2021.
- External evaluator for Ministry of Higher Education, Malaysia, 2015-2016;

**10. Organizer of workshop & Conferences:**

- (i) The international conference "Quantum Probability and its applications" held at Institute of Mathematics, September, 2005, Tashkent, Uzbekistan (Member of organizing committee).
- (ii) "On Recent Achievements on Harmonic Analysis, Algebras and Their Applications", 16-18 August, 2010, Faculty of Science, IIUM, Kuantan, Pahang, Malaysia (Chairman of the workshop);
- (iii) "On Recent Achievements on Harmonic Analysis, Algebras and Their Applications II ", 15-18 August, 2011, Faculty of Science, IIUM, Kuantan, Pahang, Malaysia (Chairman of the workshop);
- (iv) "On Recent Achievements on Harmonic Analysis, Algebras and Their Applications III ", 30 September -2 October, 2013, Faculty of Science, IIUM, Kuantan, Pahang, Malaysia (Chairman of the workshop);

- (v) "International Conference on Advancement in Science and Technology, (iCAST 2012), 7-10 November, 2012, IIUM, Kuantan, Pahang, Malaysia (Member of organizing committee).
  - (vi) "Inter. Conf. Algebra, Analysis and Quantum Probability" held at National University of Uzbekistan, 10-12 September, 2015, Tashkent, Uzbekistan (Member of organizing committee).
  - (vii) "37th Inter. Conf. Quantum Probability and Related topics" held at Faculty of Science, Inter. Islamic Univ. Malaysia, 22-26 August, 2016, Kuantan, Malaysia (Chairman of the conference).
  - (viii) "2nd Inter. Conf. Group, Group Rings and Related Topics (GGRRT-2018)" held at College of Science, UAEU, 19-22 November 2017, Oceanic Hotel, Khorfakan, UAE (Member of organizing committee).
  - (ix) "1st Inter. Workshop " Operator Algebras, Quantum Probability and Innovative Applications, (OAQP-IA 2018), held at College of Science, UAEU, 7–8 February, 2018, UAE (Chairman of the workshop).
  - (x) "Inter. Workshop "Stochastic and Computational Finance, (SCF2019 ), held at College of Science, UAEU, 20–21 February, 2019, UAE (Member of organizing committee).
  - (xi) "41th Inter. Conf. Quantum Probability and Related topics" held at Department of Math. Sciences, UAEU, 28 March-1 April, 2021, UAE (Chairman of the conference).
- 11 **Advisory and Scientific Board Member:**
- (i) " $p$ -adic Mathematical Physics and its applications", 7-10 September, 2015, Belgorod, Serbia.
  - (ii) Conference on "Algebra, Analysis and Quantum Probability-2015", 10-12 September, 2015, National University of Uzbekistan, Tashkent, Uzbekistan.
  - (iii) The Sixth International Conference on  $p$ -adic Mathematical Physics and its Applications, Mexico City, October 23-27, 2017, Mexico.
  - (iv) "38th Inter. Conf. Quantum Probability and Related topics", Tokyo University of Science, 2–6 October 2017.
  - (v) "39th Inter. Conf. Quantum Probability and Related topics", 15–19 October 2018, Levico Terme, Italy.
  - (vi) "7th International Conference on  $p$ -adic Mathematical Physics and its Applications", 29 September– 4 October, 2019, Covilha, Portugal.
  - (vii) "8th International Conference on  $p$ -adic Mathematical Physics and its Applications", 17 May – 28 May, 2021, Web Conference, Mexico.

### 13. LANGUAGES

English (Fluent);      Russian (Fluent);

Turkish (Fluent);      Português (Fluent);

Uzbek (native)



## 14. FIELD OF RESEARCH

Operator Theory; Noncommutative probability theory; Dynamical systems and ergodic theory; Functional analysis; Quantum statistical mechanics: Phase transitions; Genetic Algebras; Biology and other natural sciences.

My researches carry on the following fields :

- I** Investigation of phase transition for lattice models and description of types of the corresponding von Neumann algebras constructed by GNS-representation of Gibbs measures of some lattice models.
- II** Investigations of Gibbs measures of certain lattice models over the  $p$ -adic number field.
- III** Investigations of attractors and Siegel disc of certain  $p$ -adic dynamical systems.
- IV** Investigations of ergodic properties of quantum quadratic stochastic processes on von Neumann algebras.
- V** Investigations of ergodic theorems for  $C^*$ -dynamical systems and noncommutative ergodic theory.
- VI** Study of quantum Markov chains.
- VII** Investigation of Genetic and Evolution algebras;
- VIII** Investigation of iterative processes of nonlinear operators defined on Banach spaces.

## 15. FIELDS OF APPLICATION

- 1 Operator theory.
- 2 Statistical physics, in particular the phase transitions theory.
- 3 Theory of Markov random fields.
- 4  $p$ -adic statistical physics and  $p$ -adic dynamical systems.
- 5 Genetic Algebras;
- 6 Genetics and population dynamics.
- 7 Non-commutative ergodic theory.
- 8 Nonlinear functional analysis.