

PERSONAL INFORMATION



Aimukhanov Aitbek



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Buketov University



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| Date of Birth: 09/10/1981.

PLACE OF WORK, POSITION

Buketov University, Professor of the Department of Radiophysics and Electronics

ACADEMIC DEGREE, ACADEMIC TITLE

Candidat of Physics and Mathematics Science
Professor

WORK EXPERIENCE

Place and date

- 2005-2006 Engineer of the Department of Optics and Spectroscopy
- 2009-2011 Lecturer at the Department of Condensed Matter Spectroscopy
- 2011-2014 Senior Lecturer, Department of Instrumentation and Nanotechnology
- 2014-2018 Associate Professor of the Department of Radiophysics and Electronics
- Since 2018 Professor of the Department of Radiophysics and Electronics

EDUCATION AND TRAINING

Education

- 2000-2005** - Karaganda State University named after academician E.A. Buketov, Faculty of Spectroscopy", specialty - "Physical methods and devices for control, analysis of substances qualification - **physicist engineer** (with honors)
- **2006-2009** - Karaganda State University named after academician E.A. Buketov, Faculty of Physics, Department of Optics and Spectroscopy, postgraduate study specialty 04/01/07 - Condensed Matter Physics.

Internships, scientific trips

- 2012 Tomsk State University
- 2018 «Education for higher education institutions» (Porto, Portugal).

INTELLIGENCE ABOUT TRAINING

- "Scientific work of young scientists from the CIS countries in Russian scientific organizations" mob_SNG_st 2012
- nanotechnology and new materials. Synthesis, assembly and research (2012);
- procedures for working with an electron microscope MIRA 3 LMU (2014);
- intensive course of studying English "level A2" (2017);
- improving the teaching of disciplines in the direction of technical science and technology (2017);
- operating procedures on a Raman confocal microscope Confotec MR520 (2017).
- a training seminar on paperwork, defense of dissertation research, publications in peer-reviewed international journals (order No. 693 of 06/04/18).
- Training session "Commercializing Research Projects" (certificate 2018).
- ShpringerLink User Training (certificate 2018).
- the first series of seminars in the Republic of Kazakhstan "Thomson Reuters Day at KarSU" (certificate 2018)
- 2018
 - Certificate dated November 10, 2017 on advanced training under the program "Modern pedagogical technologies" (Almaty, JSC National Center for Advanced Studies).
 - Certificate dated November 8, 2017 on advanced training under the program "Education for higher education institutions" (Porto, Portugal).
 - Certificate of 12/22/2018 on advanced training under the program "Modern nanotechnology in two-dimensional semiconductor structures, topological insulators and composites" (Karaganda, KarSU).
- - 2020 certificate of completion of the course on the Coursera platform on the topic: "Introduction to laser technologies" (Moscow Institute of Physics and Technology; date of completion and issuance of the certificate - June 6, 2020);

PERSONAL QUALITIES

Knowledge of languages Native language

Language name	UNDERSTANDING		SPEAKING		WRITING
	Hearing	Reading	Speaking	Writing	
English language	A2	A2	A2	A2	A2

Computer skills

Advanced user: Microsoft Office (Word, Excel, Power Point), STATISTICA 6.0; graphic editors (CorelDraw, Adobe Photoshop, Adobe Illustrator, Adobe Photoshop)

Lightroom), video editing programs (Adobe Premier Pro, Final Cut Pro X, Movavi).
Knowledge of operating systems: Windows and IOS

Other skills (hobbies) Fishing, tourism.

ADDITIONAL INFORMATION

Main publications

1. Aimukhanov A. K., Ibrayev N. Kh. Influence of gold nanoparticles on the properties of stimulated emission of 6-amino-1h-phenalen-1-one in the pores of anodized aluminum oxide // *Journal of Luminescence*. – 2018. – Vol. 204.– P. 216–220. (IF-2.961, Q2).
2. Ibrayev N. Kh., Aimukhanov, A. K. Influence of plasmon resonance in silver nanoparticles on the properties of stimulated emission of 1,3,5,7,8-pentamethyl-2,6-diethylpyrromethene-difluoroborate molecules in film of porous aluminum oxide // *Optics and laser technology*. – 2019. – Vol. 115. – P. 246-250. (IF- 3.319, Q1).
3. Aimukhanov, A.K., Rozhkova, X.S., Ilyassov, B.R., Zeinidenov, A.K., Nuraje, N. The influence of structural and charge transport properties of PEDOT:PSS layers on the photovoltaic properties of polymer solar cells / *Polymers for Advanced Technologies*/ Pub Date: 2020-09-21, DOI: 10.1002/pat.5102 (IF - 2.578, Q2).
4. A. Zeinidenov, T. Mukametkali, B. Ilyassov, A. Aimukhanov, D. Valiev The effect of MoO₃ interlayer on electro-physical characteristics of the perovskite solar cells *Synthetic Metals*. - 2021. - Vol. 281. – P. 116903. DOI: 10.1016/j.synthmet.2021.116903 (IF - 4.4, Q2).
5. G.I. Omarbekova, B.R. Ilyassov, A.K. Aimukhanov, D.T. Valiev, A.K. Zeinidenov, V.V. Kudryashov The role of surface defects in the charge transport in organic solar cells based on oxidized indium thin films *Surfaces and Interfaces*. – 2022. – Vol.31. –P. 102026. DOI: 10.1016/j.surfin.2022.102026 (IF - 6.2, Q1).
6. Зейниденов А.К., Ибраев Н.Х., Аймуханов А.К. Способ получения активного элемента перестраиваемого лазера на красителе. Патент на полезную модель № 2731 от 19.03.2018 г.

H-index according to Scopus - 6.

Clarivate Analytics H-Index - 5.

Google Scholar H-Index - 7.

The number of published scientific and educational-methodical works is more than 300, of which:

- in journals based on Scopus - 43;
- in logs on the Clarivate Analytics database - 44;
- in editions recommended by KOKSON MES RK - more than 100;
- in publications located in the RSCI database, including journals from the list of the Higher Attestation Commission, - 100;
- monographs - 2;
- textbooks, teaching aids, electronic textbooks –4.

Participation in the implementation of scientific projects

Leader:

1. «New optically active media based on laser dyes and metal nanostructures» (2015-2017 yy.)
2. AP08856176 Development of a solar energy photoconverter based on organic semiconductor nanocomposites (2020-2022 yy.)
3. AP19679109 «High-performance organic photoconverter doped with nanoparticles of transition metal dichalcogenides». (2023-2025 yy.)

Executor:

"Functional optical elements based on porous aluminum oxide" (No. GR 0112RK02731, 2011-2014); "Development of technology for obtaining metal oxide films with a high specific surface for photovoltaic cells of Gretzel" (No. GR 0112RK02779, 2011-2014); "A new approach to plasmon-enhanced photovoltaic cells" No. GR 0113ZRK00899, 2013-2015); "Creation of photovoltaic cells based on dye molecules and metal nanoparticles" ((No. GR 0114RK00301, 2013-2015)
«Nanoplasmonics: synthesis of nanostructures, study of properties and modern applications» (BR05236691-OT-18 , 2018-2020 yy)
«Development of a solar energy photoconverter based on a semiconductor polymer and metallophthalocyanines» (№544-Φ-19, 2020 y.)
«The use of phthalocyanine and its metal complexes to increase the efficiency and stability of perovskite solar cells» (№ 6784-Φ-23, 2023-2025 yy.)

Membership in professional scientific organizations

- Scientific secretary of the dissertation council for the defense of dissertations for the award of the degree of Doctor of Philosophy (PhD), doctor in the field of specialty 6D060400-Physics.
- Member of the National Scientific Council for the priority direction "Energy and Mechanical Engineering" (Resolution of the Government of the Republic of Kazakhstan No. 879 dated December 26, 2017)

Awards and titles

1. Winner of the Prize of the Akim of the Karaganda region for talented young scientists carrying out scientific activities in the territory of the Karaganda region in 2009
2. In the period 2010-2012, the holder of state scientific scholarships for talented young scientists of the Ministry of Education and Science of the Republic of Kazakhstan.
3. Winner of the competition of innovative projects of KSU named after E.A. Buketov with the support of the Foundation of the First President of the RK-Leader of the Nation; Project "Luminescent Molecular Oxygen Sensor" (2012).
4. Recipient of the RFBR international grant for scientific research: "Scientific work of young scientists from the CIS countries in Russian scientific organizations" mob_SNG_st 2012
5. Winner of the personal award named after the first dean of the Faculty of Physics KM Aryngazin. (2015).
6. The best lecturer of the university -2019

Courses taught

7. First place for the best publication of a young scientist in 2020.
8. The holder of the state scientific scholarship for scientists and specialists who have made an outstanding contribution to the development of science and technology to the Ministry of Science and Higher Education of the Republic of Kazakhstan (2024).

Sphere of professional and scientific interests

Physics of lasers, introduction to laser technologies, power supplies, semiconductors, fundamentals of analytical instrumentation, luminescence of molecular systems, optical spectroscopy techniques, laser systems, computer methods for processing experimental data.

- interest is focused on the study of the dynamics of electronic excitations in condensed media, the development of new optical materials for photovoltaics, quantum electronics and nonlinear optics.-

IDENTIFIERS OF SCIENTOMETRIC DATABASE

Researcher ID: U-6141-2018
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