

## PERSONAL INFORMATION

## IBRAYEV NIYAZBEK KHAMZAULY



Republic of Kazakhstan, Karaganda, Universitetskaya st., 28  
academician E.A. Buketov KarU

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<http://www.researcherid.com/rid/C-2957-2015>

Датарождения: 14/10/1954

## PLACE OF WORK, POSITION

academician E.A. Buketov KarU, Research Professor of the Department  
of Physics and Nanotechnology

## SCIENTIFIC DEGREE, SCIENTIFIC TITLE (ACADEMIC DEGREE)

Doctor of Physical and Mathematical Sciences, Professor

## WORK EXPERIENCE

### Place and date

- 1977-1979.-trainee researcher at the E.A.Buketov KarSU.

1979-1982 -Postgraduate student of Lomonosov Moscow State University

1982-1985-Lecturer at the Department of Optics and Spectroscopy (Faculty of Physics) E.A.  
Buketov KarSU

1985-1988-Senior Lecturer at the Department of Optics and Spectroscopy (Faculty of Physics)  
KarGUim.E.A.Buketova

• 1988-1999.-Associate Professor of the Department of Optical Methods of Research and Analysis  
of the E.A.Buketov KarSU

1999 - 2015-Professor of the Department of Optics and Spectroscopy of KarGUim.E.A. Buketova:

1999-2004-Head of the Department of Optics and Spectroscopy of KarGUim.E.A. Buketova

2004-2005-Dean of the Faculty of Physics of the E.A.Buketov KarSU

Since 2008.Currently-Director of the Institute of Molecular Nanophotonics

• Since 2015.Currently - Professor of the Department of Physics and Nanotechnology of the  
E.A.Buketov KarU:

Since 2014.Currently, he is the Chairman of the Dissertation Council for the defense of doctoral  
dissertations at the E.A. Buketov KarU.

## EDUCATION AND PROFESSIONAL TRAINING

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- Education**
- 1972-1977 student of the Physics Department of KarSU.
  - 1979-1982 postgraduate student of the Physics Faculty of Lomonosov Moscow State University.
  - 1998.– Doctor of Physical and Mathematical Sciences.
  - 2001–Professor.

**Professional trainings,  
Scientific trips**

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- Radiation-thermal effects in inorganic materials, Tomsk, 2015, 2016,
- Theoretical and Experimental Chemistry, Karaganda, 2017 and others.

## SKILLS DEVELOPMENT INFORMATION

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## PERSONNEL QUALITIES

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**Native language** **Kazakh**

LANGUAGE	UNDERSTANDING		SPEAKING		WRITING
	Hearing	Reading	Oral speech		
<b>English</b>	A2	A2	A2	A2	A2

Russian

B2

B2

B2

B2

B2

LANGUAGE CERTIFICATE: NO

Digital skills

Advanced user: Microsoft Office (Word, Excel, PowerPoint). Knowledge of operating systems: Windows.

Other skills (hobbies)

ADDITIONAL INFORMATION

Main publications

1. E. Seliverstova, N. Ibrayev, G. Omarova, A. Ishchenko, M. Kucherenko Competitive influence of the plasmon effect and energy transfer between chromophores and Ag nanoparticles on the fluorescent properties of indopolycarbocyanine dyes. *J. Lumin.* 235, 118000, 2021 <https://doi.org/10.1016/j.jlumin.2021.118000>; Impact factor: 3.28.
2. D. Afanasyev, N. Ibrayev, A. Nurmakhanova. Effect of spin-orbit interaction on recombination luminescence of dye in films of halogen-containing derivative poly-N-epoxypropylcarbazole. *J. Photochem. Photobiol. A* 394, 112442, 2020 <https://doi.org/10.1016/j.jphotochem.2020.112442>; Impact factor: 3.261.
3. E.V. Seliverstova, N.Kh. Ibrayev, A.Zh. Zhumabekov. The Effect of Silver Nanoparticles on the Photodetecting Properties of the TiO<sub>2</sub>/Graphene Oxide Nanocomposite. *Optics and Spectroscopy*, 128(9), 1449-1457, 2020. <https://doi.org/10.1134/s0030400x20090192>
4. N.Kh. Ibrayev, A.K. Aimukhanov. Influence of plasmon resonance in silver nanoparticles on the properties of stimulated emission of 1,3,5,7,8-pentamethyl-2,6-diethylpyromethenedifluoroborate molecules in film of porous aluminum oxide. *Opt. Laser Technol.* 115, 246, 2019 <https://doi.org/10.1016/j.optlastec.2019.02.040>; Impact factor: 3.319.
5. N. Ibrayev, E. Seliverstova, N. Zhumabay, D. Temirbayeva Plasmon effect in the donor-acceptor pairs of dyes with various efficiency of FRET *J. Lumin.* 214, 116594, 2019 <https://doi.org/10.1016/j.jlumin.2019.116594>; Impact factor: 2.961.
6. N.Kh. Ibrayev, A.A. Ishchenko, D.A. Afanasyev, N.D. Zhumabay. Active laser medium for near-infrared spectral range based on electron-unsymmetrical polymethine dye and silver nanoparticles. *Appl. Phys. B-Lasers O.* 125, 182, 2019 <https://doi.org/10.1007/s00340-019-7292-y>; Impact factor: 1.8
7. N. Ibrayev, E. Seliverstova, D. Afanasyev, A. Nurmakhanova, I. Davydenko, N. Davydenko. Features of deactivation of excited states of cationic polymethine dye in the matrices of halogen-containing derivatives of poly-N-epoxypropyl carbazole. *J. Lumin.* 124, 349, 2018 Impact factor (2018): 2.732.
8. Md. Moniruddin, B. Ilyassov, X. Zhao, E. Smith, T. Serikov, N. Ibrayev, R. Asmatulu, N. Nuraje. Recent progress on perovskite materials in photovoltaic and water splitting applications. *Materials Today*

- Energy* 7, 246, 2018 <https://doi.org/10.1016/j.mtener.2017.10.005>
9. N.Kh.Ibrayev, E.V.Seliverstova, A.A.Ishchenko, M.A.Kudinova. The effect of sulfonate groups on spectral-luminescent and photovoltaic properties of squarylium dyes. *J. Photochem. Photobiol. A* 306, 570, 2017 <https://doi.org/10.1016/j.jphotochem.2017.06.029>; Impact factor: 2.915.
  10. N.Kh.Ibrayev, B.R.Ilyassov, D.A.Afanasyev. Influence of the morphology of ZnO nanostructures on luminescent and photovoltaic properties. *Optics and Spectroscopy* 122, №3, 2017.
  11. M. Moniruddin, B.Ilyassov, E. Seliverstova, Y.Shabdan, N.Bakranov, N.Ibrayev, N.Nuraje Bioinspired study of energy and electron transfer in photovoltaic system *Journal of Experimental Nanoscience*. 1-12. 2017 <https://doi.org/10.1080/17458080.2017.1321794> (IF 0.863)

**The number of published scientific and educational works is more than 600, including:**

—Vzhurnalahpobazessories—more than 100;

**The number of published scientific and educational - methodical works - more than 160, of which:**

- in journals on the Web of Science database - 26;
- in publications on the Scopus database - 15;
- in publications recommended by Committee for Quality Assurance in Education and Science of MES RK - 47;
- in publications placed in the RSCI database, including journals from the list of VAK - 13;
- monographs - 2;
- textbooks, teaching aids, electronic textbooks (co-authored) - 8

#### **PCF:**

- "Photo-induced electronic processing of nanocomposite materials for "green" energy" (customer-MONRC; 2015-2017; position-project manager, Chief Scientific Employee);
- "Nanoplasmonics: synthesis of nanostructures, research of properties and modern applications" (customer-MONRC; 2018-2020; position-project manager, Chief Scientific Employee);
- "Magnetic Spineffectynafotoprocess in semi-conductive polymers" (customer-MONRC; 2015-2017; position -Project Manager, Chief Scientific Employee);
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- "Creation of photovoltaic cells based on dye molecules and metal nanoparticles" (customer-MONRC; 2015-2017; position-Project manager, Chief Scientific Employee);
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- "Development and research of new nanocomposite materials for photocatalysation of photodetectors".(customer-MONRC;2018-2020;position-project manager, Chief scientific employee);
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- "Plasmon-enhanced Photophysical Processes in Condensed Molecular" (international collaboration, Institute of Organic Chemistry of the National Academy of Sciences of Ukraine (Ukraine), Ishchenko A.D.H.N., Professor, Corresponding Member of the National Academy of Sciences of Ukraine)(customer-MONRC;2020-2022;position-project manager, chief scientific employee);
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- "Functional nanomaterials based on carbon quantum dots" (customer-MONRC; 2021-2023; position-Project Manager, Chief Scientific Officer)

**Participation in the implementation of scientific projects**

- member of the National Scientific Council "Scientific Research in the field of natural sciences".
- is a member of the advisory board of "Physics" of the Ministry of Education and Science of the Republic of Kazakhstan for the review of textbooks for secondary schools.
- Member of the editorial board of the journal "EurasianPhysicalTechnicalJournal".
- Member of the editorial board of the journal "EurasianJournalofPhysicsandFunctionalMaterials".
- member of the editorial board of the journal "Bulletin of Karaganda University. Physics series".

**Membership in professional  
scientific organizations**

## Awards and titles

- Scholarship holder of the State Scientific Scholarship of the Ministry of Education and Science of the Republic of Kazakhstan for scientists who have made an outstanding contribution to the development of science and technology(2000-2004,2006-2008,2010-2012, 2012-2013,2013- 2014, 2020-2021);
- Holder of the badge of the Ministry of Education and Science of the Republic of Kazakhstan "For merits in the development of science of the Republic of Kazakhstan" (2013);
- Scholarship
- holder of the International Scholarship of the Republic of Kazakhstan "Bolashak" (2010).
- Two-time holder of the State Grant "The Best teacher of the University" (2006,2011). Has the gratitude of the Minister of Education and Science of the Republic of Kazakhstan (2016).
- Holder of the diploma of ClarivateAnalytics company in the nomination "The most cited Kazakhstani researches in the field of "green energy" submitted by WEBOF Sciencecorecollection2012-2016 (2017).
- Holder of the certificate for high publication activity in the journals of the publishing house Nature Springer (2017).
- Holder of the diploma of the company "Topresearcherinengineering andtechnologies" ( CertificatScopusAward-2018).
  1. Photonics of nanostructures
  2. Optical and microscopic methods for studying nanostructures and nanomaterials
  3. Nanoplasmonics
  4. Functional nanomaterials production, properties, application
  5. Electronic processes in nanostructured media

## Courses

## Professional and scientific interests

- the development of scientific basic technologies for obtaining functional nanomaterials based on various classes of organic and inorganic materials and the study of the influence of nanostructures on their optical, electrical and magnetic properties;
- preparation and research of nanocomposite materials for organic-inorganic solar cells, photocatalysts for hydrogen production, photodetectors, active elements of lasers

## SCIENTIFIC DATABASES IDENTIFIERS

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