

Curriculum Vitae

Ayagoz Baimukhanova

Date of birth: 11.08.1988

Nationality: Kazakh

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Education:

2024

PhD in chemical sciences

“Selection of radionuclide pairs of III – IV valence elements for creating new types of generators”

Scientific specialty: 2.6.8. Technology of Rare, Scattered and Radioactive Elements

2015–2022

PhD student of the Department of High-Energy Chemistry and Radioecology at D. I. Mendeleev Russian University of Chemical Technology (Moscow, Russia).

Specialty: High-Energy Chemistry

2017–2022

Attendee of the JINR–Czech Student Programme for Graduate and Postgraduate Students at the Department of Nuclear Chemistry at the Czech Technical University in Prague (Prague, Czech Republic).

2011 - 2013

Master of Natural Sciences in Nuclear Physics.

Department of Physics and Technology at al-Farabi Kazakh National University (Almaty, Kazakhstan).

2005 - 2011

Bachelor of Natural Studies in Nuclear Physics.

Department of Physics and Technology at al-Farabi Kazakh National University (Almaty, Kazakhstan).

Professional career:

June 2024 - present day

- assistant director of the laboratory for international cooperation, innovation and educational programs
- Dzhelapov Laboratory of Nuclear Problems
- Joint Institute for Nuclear Research (JINR), Dubna, Russia

May 2015 – June 2024

- research scientist
- Experimental Department of Nuclear Spectroscopy and Radiochemistry
- Dzhelapov Laboratory of Nuclear Problems
- Joint Institute for Nuclear Research (JINR), Dubna, Russia

November 2012 – up to the present

- engineer
- Science and Technology Center of Radiochemistry and Isotope Production
- Institute of Nuclear Physics of the Republic of Kazakhstan (INP KZ), Almaty, Kazakhstan

Research Areas of Interest:

1. development of radionuclide separation, isolation, and purification methods;
2. development of purification methods for low-background materials;
3. radionuclides for nuclear medicine;
4. radionuclide generators;
5. chemical properties (mobility, complexation, etc.) of elements in aqueous and non-aqueous solutions;
6. sorption behavior of ions on the different sorbents;
7. radionuclides for theranostics.

Special Skills:

Experience in:

- high-pressure liquid chromatography
- gamma, alpha spectroscopy
- infrared spectroscopy
- inductively coupled plasma mass spectrometry
- accelerators of charged particles.
- Languages: Kazakh, Russian, English.
- Computer literacy: Microsoft Office, C++, Origin Lab.

Selected publications:

1. N. T. Temerbulatova et.al. Production of tin-lead solder based on archaeological lead for low-background experiments // *Journal of Instrumentation*. - 2025. - V. 20. - I. 7. - P07021. - DOI:10.1088/1748-0221/20/07/P07021
2. J. Dadakhanov et.al. $^{140}\text{Ba} \rightarrow ^{140}\text{La}$ radionuclide generator: reverse-tandem scheme // *Radiochimica Acta*. - 2025. - V. 113. - I. 7. - DOI:10.1515/ract-2024-0378
3. D. V. Filosofov et. al. Potent candidates for Targeted Alpha Therapy (TAT) // *Nuclear Medicine and Biology*. - 2025. - V. 146-147. - I. 2. - P. 109027. - DOI:10.1016/j.nucmedbio.2025.109027
4. D. V. Filosofov et.al. Radiochemical Investigations for Radiopharmaceutical Nuclear Medicine at JINR Laboratory of Nuclear Problems // *Physics of Particles and Nuclei*. - 2023. - V. 54. - I. 2. - P. 321-363. - DOI:10.1134/S106377962302003X
5. N. Mirzayev et.al. High-purity ammonium acetate solution for low-background electronics // *Journal of Radioanalytical and Nuclear Chemistry*. - 2022. - V. 331. - I. 1. - P.1-7. - DOI:10.1007/s10967-022-08608-3
6. A. Baimukhanova et.al. An alternative radiochemical separation strategy for isolation of Ac and Ra isotopes from high energy proton irradiated thorium targets for further application in Targeted Alpha Therapy (TAT) // *Nuclear medicine and biology*. - 2022. - V. 112-113. - P. 35-43.
7. V. Radchenko, A. Baimukhanova, D. Filosofov. Radiochemical aspects in modern radiopharmaceutical trends: a practical guide // *Solvent Extraction and Ion Exchange*. - 2021. - V. 39. - Is. 7. - P. 714-744. DOI: 10.1080/07366299.2021.1874099.
8. J. Dadakhanov et.al. Sorption of various elements on ion-exchange resins in acetic media // *Journal of radioanalytical and nuclear chemistry*. - 2021. - V. 327. - Is. 9. - P.1191-1199.
9. A. Baimukhanova et.al. Utilization of (p, 4n) reaction for ^{86}Zr production with medium energy protons and development of a $^{86}\text{Zr} \rightarrow ^{86}\text{Y}$ radionuclide generator // *Journal of radioanalytical and nuclear chemistry*. - 2018. - V. 316. - P. 191-199.
10. А. Баймуханова и др. Получение позитрон-излучающего радионуклида ^{68}Ga : радиохимическая схема радионуклидного генератора $^{68}\text{Ge} \rightarrow ^{68}\text{Ga}$ // *Вестник Казахского национального университета им. аль-Фараби, серия химическая*. - 2018. - Т. 89. - № 2. - С. 20-26.
11. A. Turanov et.al. Effect of ionic liquid on the extraction of actinides and lanthanides with 1, 2, 3-triazole-modified carbamoylmethylphosphine oxide from nitric acid solutions // *Radiochimica Acta*. - 2017. - P. 20172851. <https://doi.org/10.1515/ract-2017-2851>.
12. A. Inoyatov et.al. The KLM+KLN Auger electron spectrum of rubidium in different matrices // *Journal of Physics B: Atomic, Molecular and Optical Physics*. - 2017. - V. 50. - I. 15. - P. 155001.
13. A. Inoyatov et.al. Improved energy of the 21.5 keV M1+E2 nuclear transition in ^{151}Eu // *European Physical Journal A*. - 2016. - V. 52. - I. 5. - P. 133.
14. V. Radchenko et.al. Direct flow separation strategy, to isolate no-carrier-added ^{90}Nb from irradiated Mo or Zr targets // *Radiochimica Acta*. - 2016. - V. 104. - I. 9. - P. 625.
15. A. Baimukhanova et.al. Study of the effect of $(\text{U}_{0.8}\text{Pu}_{0.2})\text{O}_2$ uranium-plutonium mixed fuel fission products on a living organism // *Nuclear Engineering and Technology*. - 2016. - V. 48. - I. 4. - P. 965.