

Last name, first name, patronymic:

Nurizinova Makpal Manarbekovna

Position (Department):

Associate Professor at the Department of Physics and Technology

Information about education:

Higher

Academic degree:

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Academic title:

Doctor of Philosophy (PhD)

Pedagogical experience:

17

Subjects taught:

Methods of teaching physics; Fundamentals of scientific research in professional pedagogy; Professional ethical foundations of a teacher; Artistic processing of materials and aesthetics of everyday life; Decorative and applied creativity; Visual art; Design and technology

Scientific interests:

Problems of professional training of future physics teachers; formation of research and experimental competencies of students; integration of tribology, electrodynamics, diffraction and digital technologies into the educational process; use of STEM and STEAM approaches in teaching physics; development and implementation of digital educational resources; application of artificial intelligence technologies in physics education; methodology for solving Olympiad problems in physics; interdisciplinary research in the field of tribology and pedagogy of physics; development of students' soft skills and creativity by means of project and research training.

1952
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Publications and articles:

List of scientific publications indexed in international databases Scopus and Web of Science

1. Skakov M., Dalabayev T., Coruh A, and **Nurizinova M.** (2026). Scientific and methodological foundations forenhancingtheresearch competencies offuturephysics teachers usingx-raydiffractionasan example. Frontiers in Education, 11:1750370. https://doi:10.3389/feduc.2026.1750370

2. Zulkarshyn P, **Nurizinova M,** Skakov M, Zhenisbekova N and Çoruh A (2026) Development and investigation of a model for improving the professional competencies of future physics teachers through solving Olympiad problems. Front. Educ. 11:1823189. https://doi.org/10.3389/feduc.2026.1823189

3. Ramankulov S, Çoruh A, **Nurizinova M,** Rizakhojayeva G, Kelesbayev K and Khikmatulla S (2026) How does the development of STEM products in the learning process affect the development of students' applied-oriented skills?. Front. Educ. 11:1774470. https://doi.org/10.3389/feduc.2026.1774470

4. Sherzod Ramankulov, Bakytzhan Kurbanbekov, **Makpal Nurizinova,** Nurkozha Zhaksylyk, and Madina Akeshova. (2026). Does Web-Based STEM Education Enhance Students' Research Activities and Knowledge of Solar Panels? An Evaluation of a Web Platform's Effectiveness. International Journal of Information and Education Technology, 16(1), 71–81.https://doi.org/10.18178/ijiet.2026.16.1.2484

5. Y. Dossymov, S. Ramankulov, N. Genc, A. Çoruh, **M. Nurizinova,** N. Zhaksylyk. Integrating renewable energy based on science, technology, engineering and mathematics projects in promoting. Global J. Environ. Sci. Manage. 12(2), Spring 2026, Serial 46 https://doi.org/10.22034/gjesm.2026.02.06

6. Ramankulov S, Coruh A, **Nurizinova M,** Skakov M, Zhaksylyk N, Kurbanbekov B. Impact of STEM Project-Based Learning on research autonomy and engineering thinking in solar energy education. Sci Rep. 2026 Jun 3;16(1):25212. https://doi.org/10.1038/s41598-026-55791-4.

7. Rizakhojayeva, G., **Nurizinova, M.**, Ramankulov, S., Genc, N., & Abdurakhmanova, S. (2026). Effectiveness of virtual reality and simulation-based STEM instruction in developing students' soft skills: Evidence from a meta-analysis. *International Journal of Advanced and Applied Sciences, 13*(7), 126–135. https://doi.org/10.21833/ijaas.2026.07.012

8. Mazhyn Skakov, Sherzod Ramankulov, **Makpal Nurizinova,** Bakitzhan Kurbanbekov, Yelmurad Dossymov (2025). Using digital tools in STEM education and the impact on student creativity in the field of tribology. International Journal of Evaluation and Research in Education (IJERE) Vol. 14, No. 1, February, pp. 589~597 ISSN: 2252-8822. http://doi.org/10.11591/ijere.v14i1.30220

9. Bakitzhan Kurbanbekov, Sherzod Ramankulov, **Makpal Nurizinova**, Beksultan Asanbek. (2025). Impact of VR technology in physics teaching on students' knowledge: a study on body acceleration International Journal of Evaluation and Research in Education (IJERE), Vol. 14, No. 6, December, pp. 5038~5053 ISSN: 2252-8822, https://doi.org/10.11591/ijere.v14i6.34942

10. Zhaksylyk, N., Ramankulov, S., **Nurizinova, M.,** Choruh, A., Mussakhan, N., & Kurbanbekov, B. (2025). Enhancing interdisciplinary STEM education through CNC technology: Integrating disciplines in engineering instruction. International Journal of Advanced and Applied Sciences, 12(11), 237–248. https://doi.org/10.21833/ijaas.2025.11.022

11. Gulnara Rizakhojayeva, Sherzod Ramankulov, Madina Akeshova, **Makpal Nurizinova**, Yessenkeldy Tuyakov and Rustam Abdrakhmanov. STEM-based approaches to soft skills development: a synthesis of meta-analytic findings and empirical evidence. Frontiers in Education. 17 September 2025. https://doi.org/10.3389/feduc.2025.1663155

12. **M. Nurizinova,** M. Skakov, A. Çoruh, Sh. Ramankulov, M. Nurizinov (2024). The development of digital educational materials on tribology and their application in the formation of the professional competence of future physics teachers. International Journal of Innovative Research and Scientific Studies, 7(4), pages: 1600-1613. https://doi.org/10.53894/ijirss.v7i4.3459

13. Skakov, M.; Ocheredko, I.; Tuyakbayev, B.; Bayandinova, M.; **Nurizinova, M.** Development and Studying of the Technology for Thermal Spraying of Coatings Made from Ultra-High-Molecular-Weight Polyethylene. Coatings 2023, 13, 698. https://doi.org/10.3390/coatings13040698

14. Mazhyn Skakov, Moldir Bayandinova, Igor Ocheredko, Baurzhan Tuyakbayev, **Makpal Nurizinova,** Alexander Gradoboev. ructure and Tribological Properties of Coatings Based on Ultrahigh Molecular Weight Polyethylene. Influence of Diabase Filler on the StPolymers 2023, 15(16), 3465; https://doi.org/10.3390/polym15163465

List of scientific publications recommended by the Committee for Quality Assurance in the Field of Science and Higher Education of the Ministry of Science and Higher Education of the Republic of Kazakhstan

1. Скаков М.К., **Нуризинова М.М.** Пәндердің кәсіби циклінде трибология саласындағы болашақ физика мұғалімін дайындаудың қажеттілігі // *Ясауи университетінің хабаршысы*. – 2021. – №1 (119). – Б. 114–123. https://doi.org/10.47526/habarshy.vi1.482

2. **M. Nurizinova**, Sh. Sherzod Ramankulov, M. Skakov Evaluation of advanced technology for the formation of research competence of physics students in the field of tribology // *Доклады Национальной академии наук Республики Казахстан* — 2022. — № 4. – Б. 136-152. https://doi.org/10.32014/2022.2518-1483.177.

3. M.K. Skakov, N. Kantay, **M. Nurizinova**, B. Tuyakbayev, M. Bayandinova. Influence of silicon oxide and diabase powders on the degree of crystallization and chemical structure of a polymer (uhmwpe) coating produced by the method of gas thermal spraying // *Доклады Национальной академии наук Республики Казахстан.* — 2022 . — № 4. – Б. 153-163. https://doi.org/10.32014/2022.2518-1483.178.

4. **M. Nurizinova**, M. Skakov, Sh. Ramankulov. The study of the formation of ideas of future specialists about tribology // **Вестник Национальной академии наук Республики Казахстан** — 2023. — №1(401). – Б. 212-223. https://doi.org/10.32014/2023.2518-1467.433

5. Ramankulov SH., **Nurizinova M.,** Dosymov Y., Akhanova A. Principles and content of teaching physics in english for future physics teachers«ҚР ҰҒА хабаршысы» ғылыми журналы.
— 2023. — №3(403). – Б. 172–186. https://doi.org/10.32014/2023.2518-1467.501

6. **Нуризинова М.,** Келесбаев К., Раманкулов Ш., Паттаев А., Мұсахан Н. STEM жобалық оқытудың болашақ физика мамандарын даярлаудағы ерекшеліктері ҚР ҰҒА Хабарлары. Физика-математика сериясы. — 2023. — №2. – Б. 193–207. https://doi.org/10.32014/2023.2518-1726.193

7. M.K. Skakov, T.N. Dalabayev, A. Choruh., **M.M. Nurizinova.** The methodological foundations for developing the Scientific research competencies of future physics. Teachers«ҚР ҰҒА хабаршысы» ғылыми журналы. — 2024. — №1. – Б. 283–294. https://doi.org/10.32014/2024.2518-1467.673

8. Е. Досымов, Eser Selda, **М. Нуризинова,** Е. Еділбаев, Б. Асанбек. Механика курсын оқытуда цифрлық ресурстарды қолданудың ерекшеліктері. «ҚР ҰҒА хабаршысы» ғылыми журналы. — 2024. — №2. – Б. 49–62. https://doi.org/10.32014/2024.2518-1467.706

9. Tleubek Dalabayev, Mazhyn Skakov, Ali Choruh, **Makpal Nurizinova.** The role of
physical practical course in improving research skills of future teachers. Higher education in Kazakhstan No1(49) / 202537 https://doi.org/10.59787/2413-5488-2025-49-1-37-51

10. Ш.Ж.Раманкулов, **М.М.Нуризинова**, И.Б.Усембаева, Д.Қ.Берді. Құрылымдық теңдеулер моделі (sem) негізінде stem – білім берудің білім алушылардың Soft Skills дамуына әсері. Абай атындағы ҚазҰПУ-ң ХАБАРШЫСЫ «Педагогика ғылымдары» сериясы, №3(87), 2025 ж. https://doi.org/10.51889/2959-5762.2025.87.3.011

Монографий

1. Sh. Ramankulov, **M. Nurizinova.** The impact of stem and clil technologies in physics teaching on the development of students' research competencies Sarsen Amanzholov East Kazakhstan university, Shymkent: «Nurly Beine», 2024. – 104 p.

2. Досымов Елмурат, **Нуризинова Макпал.** STEM технологиясы негізінде студенттердің креативтілігін дамыту: физиканы оқыту мысалында Өскемен: С. Аманжолов атындағы ШҚУ, Шымкент, «Нұрлы бейне» баспасы, 2025. – 109 б.

3. Раманкулов Ш., **Нуризинова М.,** Скаков М., Паттаев А., Жақсылық Н. // Оқу үдерісінде STEM жобаларды іске асыру: Баламалы энергетика саласы мысалында. монография/ Раманкулов Ш., Нуризинова М., Скаков М., Паттаев А., Жақсылық Н. — Өскемен: С. Аманжолов атындағы ШҚУ «Берел» баспасы, 2026. — 151 б.

4. Я.Ш.Каримжанов, **М.М.Нуризинова,** К.Н.Келесбаев // «Мектеп–Университет–Өнеркәсіп» серіктестігі жағдайында STEM білім берудің тиімділігі: монография / Я.Ш.Каримжанов, М.М.Нуризинова, К.Н.Келесбаев. — Өскемен: С. Аманжолов атындағы ШҚУ «Берел» баспасы, 2026. — 102 б.

1952
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