

THE IMPORTANCE OF ARTIFICIAL INTELLIGENCE IN MODERN EDUCATION AND ISSUES OF ITS USE

Mamajonov Adham Toshtemirovich

Teacher at Namangan City Polytechnic No. 2

Abstract:

This article analyzes the importance, capabilities, and possible future changes of artificial intelligence in the education system. The issues of personalizing the educational process with the help of artificial intelligence, improving curricula, introducing virtual assistants, and expanding the possibilities of distance learning are discussed. It also highlights the role of artificial intelligence in democratizing global education, training teachers, and providing solutions to problems related to ethical aspects of education. The article examines in detail the ways to increase the effectiveness of education through the use of artificial intelligence in education and its social significance. In addition, it discusses the advantages of using artificial intelligence in education, its positive impact on the quality of education, its ability to organize the educational process with its help, and the creation of many conveniences in the educational process.

Keywords: Artificial intelligence, individual learning, educational algorithms, innovative education, intensive training program.

Introduction

We live in an era of rapidly developing globalization. Naturally, this requires the formation of modern thinking and a modern worldview and the use of modern innovative technologies. We cannot imagine our current life without modern technologies, and they cover all aspects of our lives. In particular, they have had an impact on the field of education. Technologies and applications in education are rapidly being updated and expanded. In addition, the continuous development of smart products brings great convenience and innovation to people's study, work and life.

In recent years, attention has been increasingly focused on providing the younger generation with quality education. By the 21st century, science has developed to such an extent that it is impossible to imagine a single day without scientific achievements and technologies. In particular, concepts such as the information society and artificial intelligence have become an integral part of our lives. The term AI (English: Artificial Intelligence) is often found in our daily lives, and its use is developing all over the world. Recently, artificial intelligence is being introduced into various industries and social infrastructures.

The modern world is entering a new phase with the development of technology. Artificial intelligence (AI) is at the heart of this development and is also gaining great importance in the field of education. Today, AI opens up vast opportunities for optimizing, personalizing, and increasing the efficiency of the educational process. In this article, we will talk about the importance of AI in education and its impact on students, teachers, and the education system. First of all, AI serves to strengthen the personal approach to the educational process. Each student has his own unique abilities, level of knowledge, and learning style. AI algorithms take these factors into account and create an individual curriculum for each student. For example, AI programs that help identify and correct errors increase students' independent learning abilities. At the same time, interactive platforms serve to maintain student activity and motivate them. Secondly, AI plays an important role in reducing the workload of teachers. Teachers often spend a lot of time on repetitive tasks such as assessing students and analyzing tests. SI tools automate these tasks, allowing teachers to spend more time enriching the content of the lesson and paying special attention to students. For example, grammar analysis programs or automatic test scoring systems are among them.

AI also enables more efficient use of resources in the learning process. In distance learning, especially during the pandemic, AI technologies have become important in engaging students in lessons. The introduction of AI-based features into videoconferencing platforms, such as automatic translation, creating text notes, or improving the interactive environment between teachers and students, has made education more effective. Another important aspect of AI in education is monitoring and analyzing student progress. While such analysis takes a lot of time in traditional methods, this process can be done in seconds with the help of artificial intelligence programs. Based on statistical data, AI identifies the weaknesses of each student and adjusts the curriculum to focus on them. This

process is effective not only for students, but also for educational institutions, and serves to improve the quality of education. In addition, AI plays an important role in ensuring inclusiveness in education. By developing special tools for students with disabilities, equal educational opportunities can be created for them. For example, speech-to-text or text-to-speech programs make the learning process easier for students. At the same time, special technologies provide full access to course materials for students who are blind or hard of hearing.

Another aspect of AI in education is the introduction of innovative teaching methods. Using virtual and augmented reality technologies with artificial intelligence, it is possible to increase the level of student engagement in the subject. For example, the opportunity to “travel” to historical places using virtual reality glasses in history lessons, and studying the functioning of organs through a virtual model of the human body in biology lessons increase students’ interest in the educational material. However, there are also some problems in the process of widespread use of AI in education. One of the most important issues is confidentiality and security. The level of protection of AI systems when collecting and processing students’ personal data should be high. In addition, increasing the readiness of teachers to use AI technologies and technological literacy is also an important issue.

As we analyze the importance of artificial intelligence in education more broadly, it is necessary to consider the changes it can make in the education system in the future. First of all, the role of artificial intelligence in providing the ability to make informed decisions in education is important. Today, the education system often makes decisions without sufficient analysis of statistical data. Artificial intelligence helps to improve this process and serves to manage education policy based on a scientific approach. For example, with the help of AI, the effectiveness of educational programs can be assessed and improved. The development of artificial intelligence also allows for the formation of new approaches to the development of educational materials in educational institutions and their delivery to students. Technologies for automatically creating educational materials using AI are emerging. For example, e-books and textbooks that are prepared in accordance with the level of knowledge of students are being successfully used in many educational institutions. In addition, artificial intelligence provides the ability to automatically translate educational programs

into different languages, which will greatly help in developing international cooperation.

Virtual assistants and interactive systems based on AI are also of great importance in enriching education. For example, chatbots or voice assistants allow students to find answers to their questions outside of class. This not only develops independent learning of students, but also saves time for teachers. At the same time, such tools help to use new teaching methods in the educational process, for example, game-based learning (gamification) or the implementation of interactive educational programs. The effectiveness of the educational process can be increased by using artificial intelligence in education. According to statistics, students who use personalized educational programs achieve 30-40% higher results in mastering than those who use traditional methods.

Today, artificial intelligence (AI) is intensively taking its place in the field of education. AI plays a major role in creating information systems that have the ability to learn, analyze, transform and visualize data. These systems help in performing tasks such as recognizing data in the learning process, searching for data for specific purposes, analyzing data, and displaying results. Compared to natural and human capabilities, artificial intelligence (AI) brings several benefits to the field of education. This article highlights several useful aspects of artificial intelligence in the field of education.

First of all, AI has had a significant impact on saving the learner's time and successful development in education. The capabilities of AI are wide-ranging, it can answer questions of interest to you, draw pictures on command or create presentations on various topics, and even write various abstracts and articles.

SI helps students to self-manage, master, analyze and analyze their individual learning methods. Its educational algorithms are adapted based on the individual characteristics and learning methods of students, which increases the abilities of each student in his or her own educational path. It also provides the student with the opportunity to learn independently. Based on the knowledge levels, interests, shortcomings and characteristics of students in the process of mastering, SI adapts educational programs and allows each student to get the best results in the mastered educational path. SI helps in assessing student data and making special planning for it. Based on the characteristics of the student, the formation of the level of knowledge and the interests of students, SI allows you to customize educational programs and make special recommendations.

Artificial intelligence creates many conveniences in the process of teaching not only for students, but also for teachers. For example, to create an intensive learning program and organize the lesson more interesting and meaningfully, the teacher can use various methods with the help of AI to study topics of interest to students and increase the ability to find, analyze and explain information about them, and various fields can be studied, such as genetics, robotics, visual learning, natural language learning, etc. With the help of applications and applications in artificial intelligence, teachers can assess students, create educational programs, and learn words, sentences and mathematical problems. By using these applications, the interactivity and intensity of education is increased.

Benefits of using artificial intelligence in education:

- Helping to further improve the quality of education by saving the time of students and teachers
- Increasing the level of student mastery
- The opportunity for the teacher to create new methods using SI and use them in the educational process
- Using various animations and visual aids
- Organizing the lesson process based on the interests of students
- Creating many conveniences such as increasing the individual learning potential of students and helping to consolidate the knowledge they have learned.

In conclusion, artificial intelligence has the power to bring about revolutionary changes in the field of education. It is of great importance in personalizing the educational process, increasing efficiency, introducing innovative approaches and ensuring inclusiveness. At the same time, a responsible approach is required when integrating SI technologies into the educational process. In the future, there is an opportunity to achieve even higher results at all stages of education with the help of artificial intelligence. Artificial intelligence effectively helps students and teachers to use innovative teaching methods, develop educational materials, individualized learning experiences and improve the quality of education.

REFERENCES:

1. Holmes, W., Bialik, M., & Fadel, C. (2019). Artificial Intelligence in Education: Promises and Implications for Teaching and Learning. Center for Curriculum Redesign.
2. Solidjonov, D. (2024). Generativ sun'iy intellektning tilga ta'siri va lingvistik yondashuvlarning shakllanishi.
3. Talqin va tadqiqotlar ilmiy-uslubiy jurnali, 2(60), 180-184.
4. Luckin, R., Holmes, W., Griffiths, M., & Forcier, L. B. (2016). Intelligence Unleashed: An Argument for AI in Education. Pearson Education.
5. Roll, I., & Wylie, R. (2016). Evolution and revolution in artificial intelligence in education. International Journal of Artificial Intelligence in Education, 26(2), 582–599. <https://doi.org/10.1007/s40593-016-0110-3>
6. F.A.Nurmuxamedova."Sun'iy intellekt dunyo nigohida" Central Asian Research Journal for Interdisciplinary Studies (CARJIS) jurnali. 2022 7 son 53p
7. M.A. Islomova "Sun'iy intellektni chet tilini o'rganishdagi afzalliklari" Pedagos journal. ISSN: 2181-4027_SJIF: 4.995 . 2023 37 son 27-29 p
8. N.G'.To'ychiyeva "Oliy ta'limda sun'iy intellektning ahamiyati" "Computer science and engineering technologies" 2022 3 son 254-255 p
9. Narimonova N.G. Psycholinguistics as a tool for in-depth study of speech and language. - Science and Education. 2022, Vol.3, Iss.2, pp.546-550
10. G. Narimonova. Interactive teaching methods in foreign language lessons // JournalNX- A Multidisciplinary Peer Reviewed Journal. Vol.10, Iss.12, pp.13-17 (2024)
11. Psycholinguistics as a tool for in-depth study of speech and language. - Science and Education. 2022, Vol.3, Iss.2, pp.546-550
12. Abdullayeva S., Narimonova G. External laws of language development. Proceedings of International Educators Conference. Vol.2, Iss.3, pp.59-62.
13. Наримонова Г. Ключевые тенденции развития русского литературного языка. Евразийский журнал академических исследований. Том 2, №6, стр.544-546.
14. Наримонова Г.Н. Внешние законы развития языка. НамГУ - научный вестник одарённых студентов. Том 1, № 1, стр.215-218

15. Narimonova G. Modern Information Technologies in Teaching the Russian Language. Journal of Pedagogical Inventions and Practices. 2023. Vol.27, pp.3-5.
16. Narimonova G. Changes in the Russian Language in the Modern Period and Language Policy. Texas Journal of Philology, Culture and History. 2023. Vol.25, pp.40-43.
17. Narimonova G. Key trends in the development of the Russian literary language. Eurasian Journal of Academic Research. 2023. Vol. 2, Iss. 6, pp. 544-546.
18. G.N. Narimonova. External laws of language development. Scientific bulletin of gifted students of NamSU. 2023. Vol. 1, Iss. 1, pp. 215-218.
19. Г. Наримонова. Ключевые тенденции развития русского литературного языка. Евразийский журнал академических исследований. 2022. Том 2, № 6, стр.544-546.
20. Наримонова Г.Н. Психологические аспекты изучения русского языка // «Методы и технологии в преподавании РКИ в контексте современных образовательных парадигм». Международная научно-практическая конференция. 2024. Наманган. 7-8 октября.
21. G.Narimonova, Z.Turgunpulatova. Methodology of teaching Russian language and literature // Ta'limning zamonaviy transformatsiyasi. 2024. Vol.7, Iss.5, pp.239-245.
22. G.Narimonova. Psycholinguistic bases of work with the text at the lessons of Russian language and literature // Western European Journal of Linguistics and Education. 2024. Vol.2, Iss.4, pp.164-172.
23. G. Narimonova. Interactive methods of teaching in foreign language classes // Scientific Bulletin of NamSU. Special issue, pp.891-896. (2024)
24. R.G. Rakhimov. Clean the cotton from small impurities and establish optimal parameters // The Peerian Journal. Vol. 17, pp.57-63 (2023)
25. R.G. Rakhimov. The advantages of innovative and pedagogical approaches in the education system // Scientific-technical journal of NamIET. Vol. 5, Iss. 3, pp.293-297 (2023)
26. F.G. Uzoqov, R.G. Rakhimov. Movement in a vibrating cotton seed sorter // DGU 22810. 03.03.2023
27. F.G. Uzoqov, R.G. Rakhimov. The program "Creation of an online platform of food sales" // DGU 22388. 22.02.2023

28. F.G. Uzoqov, R.G. Rakhimov. Calculation of cutting modes by milling // DGU 22812. 03.03.2023
29. F.G. Uzoqov, R.G. Rakhimov. Determining the hardness coefficient of the sewing-knitting machine needle // DGU 23281. 15.03.2023
30. N.D. Nuritdinov, M.N. O'rmonov, R.G. Rahimov. Creating special neural network layers using the Spatial Transformer Network model of MatLAB software and using spatial transformation // DGU 19882. 03.12.2023
31. F.G. Uzoqov, R.G. Rakhimov, S.Sh. Ro'zimatov. Online monitoring of education through software // DGU 18782. 22.10.2022
32. F.G. Uzoqov, R.G. Rakhimov. Electronic textbook on "Mechanical engineering technology" // DGU 14725. 24.02.2022
33. F.G. Uzoqov, R.G. Rakhimov. Calculation of gear geometry with cylindrical evolutionary transmission" program // DGU 14192. 14.01.2022
34. R.G. Rakhimov. Clean the surface of the cloth with a small amount of water // Scientific Journal of Mechanics and Technology. Vol. 2, Iss. 5, pp.293-297 (2023)
35. R.G. Rakhimov. Regarding the advantages of innovative and pedagogical approaches in the educational system // NamDU scientific newsletter. Special. (2020)
36. R.G. Rakhimov. A cleaner of raw cotton from fine litter // Scientific journal of mechanics and technology. Vol. 2, Iss. 5, pp.293-297 (2023)
37. R.G. Rakhimov. On the merits of innovative and pedagogical approaches in the educational system // NamSU Scientific Bulletin. Special. (2020)
38. R.G. Raximov, M.A. Azamov. Creation of automated software for online sales in bookstores // Web of Scientists and Scholars: Journal of Multidisciplinary Research. Vol. 2, Iss. 6, pp.42-55 (2024)
39. R.G. Raximov, M.A. Azamov. Technology for creating an electronic tutorial // Web of Scientists and Scholars: Journal of Multidisciplinary Research. Vol. 2, Iss.6, pp.56-64 (2024)
40. R.G. Rakhimov, A.A. Juraev. Designing of computer network in Cisco Packet Tracer software // The Peerian Journal. Vol. 31, pp.34-50 (2024)
41. R.G. Rakhimov, E.D. Turonboev. Using educational electronic software in the educational process and their importance // The Peerian Journal. Vol. 31, pp.51-61 (2024)

42. Sh. Korabayev, J. Soloxiddinov, N. Odilkhonova, R. Rakhimov, A. Jabborov, A.A. Qosimov. A study of cotton fiber movement in pneumomechanical spinning machine adapter // E3S Web of Conferences. Vol. 538, Article ID 04009 (2024)
43. U.I. Erkaboev, R.G. Rakhimov, N.A. Sayidov. Mathematical modeling determination coefficient of magneto-optical absorption in semiconductors in presence of external pressure and temperature // Modern Physics Letters B. 2021, 2150293 pp, (2021).
44. U.I. Erkaboev, R.G. Rakhimov, J.I. Mirzaev, N.A. Sayidov. The influence of external factors on quantum magnetic effects in electronic semiconductor structures // International Journal of Innovative Technology and Exploring Engineering. 9, 5, 1557-1563 pp, (2020).
45. Erkaboev U.I, Rakhimov R.G., Sayidov N.A. Influence of pressure on Landau levels of electrons in the conductivity zone with the parabolic dispersion law // Euroasian Journal of Semiconductors Science and Engineering. 2020. Vol.2., Iss.1.
46. Rakhimov R.G. Determination magnetic quantum effects in semiconductors at different temperatures // VII Международной научнопрактической конференции «Science and Education: problems and innovations». 2021. pp.12-16.
47. Gulyamov G, Erkaboev U.I., Rakhimov R.G., Sayidov N.A., Mirzaev J.I. Influence of a strong magnetic field on Fermi energy oscillations in two-dimensional semiconductor materials // Scientific Bulletin. Physical and Mathematical Research. 2021. Vol.3, Iss.1, pp.5-14
48. Erkaboev U.I., Sayidov N.A., Rakhimov R.G., Negmatov U.M. Simulation of the temperature dependence of the quantum oscillations' effects in 2D semiconductor materials // Euroasian Journal of Semiconductors Science and Engineering. 2021. Vol.3., Iss.1.
49. Gulyamov G., Erkaboev U.I., Rakhimov R.G., Mirzaev J.I. On temperature dependence of longitudinal electrical conductivity oscillations in narrow-gap electronic semiconductors // Journal of Nano- and Electronic Physic. 2020. Vol.12, Iss.3, Article ID 03012.
50. Erkaboev U.I., Gulyamov G., Mirzaev J.I., Rakhimov R.G. Modeling on the temperature dependence of the magnetic susceptibility and electrical

- conductivity oscillations in narrow-gap semiconductors // International Journal of Modern Physics B. 2020. Vol.34, Iss.7, Article ID 2050052.
51. Erkaboev U.I., R.G.Rakhimov. Modeling of Shubnikov-de Haas oscillations in narrow band gap semiconductors under the effect of temperature and microwave field // Scientific Bulletin of Namangan State University. 2020. Vol.2, Iss.11. pp.27-35
 52. Gulyamov G., Erkaboev U.I., Sayidov N.A., Rakhimov R.G. The influence of temperature on magnetic quantum effects in semiconductor structures // Journal of Applied Science and Engineering. 2020. Vol.23, Iss.3, pp. 453–460.
 53. Erkaboev U.I., Gulyamov G., Mirzaev J.I., Rakhimov R.G., Sayidov N.A. Calculation of the Fermi–Dirac Function Distribution in Two-Dimensional Semiconductor Materials at High Temperatures and Weak Magnetic Fields // Nano. 2021. Vol.16, Iss.9. Article ID 2150102.
 54. Erkaboev U.I., R.G.Rakhimov. Modeling the influence of temperature on electron landau levels in semiconductors // Scientific Bulletin of Namangan State University. 2020. Vol.2, Iss.12. pp.36-42
 55. Erkaboev U.I., Rakhimov R.G., Sayidov N.A., Mirzaev J.I. Modeling the temperature dependence of the density oscillation of energy states in two-dimensional electronic gases under the impact of a longitudinal and transversal quantum magnetic fields // Indian Journal of Physics. 2022. Vol.96, Iss.10, Article ID 02435.
 56. Erkaboev U.I., Negmatov U.M., Rakhimov R.G., Mirzaev J.I., Sayidov N.A. Influence of a quantizing magnetic field on the Fermi energy oscillations in two-dimensional semiconductors // International Journal of Applied Science and Engineering. 2022. Vol.19, Iss.2, Article ID 2021123.
 57. Erkaboev U.I., Gulyamov G., Rakhimov R.G. A new method for determining the bandgap in semiconductors in presence of external action taking into account lattice vibrations // Indian Journal of Physics. 2022. Vol.96, Iss.8, pp. 2359-2368.
 58. U. Erkaboev, R. Rakhimov, J. Mirzaev, U. Negmatov, N. Sayidov. Influence of the two-dimensional density of states on the temperature dependence of the electrical conductivity oscillations in heterostructures with quantum wells // International Journal of Modern Physics B. **38**(15), Article ID 2450185 (2024).

59. U.I. Erkaboev, R.G. Rakhimov. Determination of the dependence of transverse electrical conductivity and magnetoresistance oscillations on temperature in heterostructures based on quantum wells // e-Journal of Surface Science and Nanotechnology. **22**(2), pp.98-106. (2024)
60. U.I. Erkaboev, N.A. Sayidov, J.I. Mirzaev, R.G. Rakhimov. Determination of the temperature dependence of the Fermi energy oscillations in nanostructured semiconductor materials in the presence of a quantizing magnetic field // Euroasian Journal of Semiconductors Science and Engineering. **3**(2), pp.47-52 (2021).
61. U.I. Erkaboev, N.A. Sayidov, U.M.Negmatov, J.I. Mirzaev, R.G. Rakhimov. Influence temperature and strong magnetic field on oscillations of density of energy states in heterostructures with quantum wells HgCdTe/CdHgTe // E3S Web of Conferences. **401**, 01090 (2023)
62. U.I. Erkaboev, N.A. Sayidov, U.M.Negmatov, R.G. Rakhimov, J.I. Mirzaev. Temperature dependence of width band gap in $\text{In}_x\text{Ga}_{1-x}\text{As}$ quantum well in presence of transverse strong magnetic field // E3S Web of Conferences. **401**, 04042 (2023)
63. Erkaboev U.I., Rakhimov R.G., Sayidov N.A., Mirzaev J.I. Modeling the temperature dependence of the density oscillation of energy states in two-dimensional electronic gases under the impact of a longitudinal and transversal quantum magnetic fields // Indian Journal of Physics. 2023. Vol.97, Iss.4, 99.1061-1070.
64. G. Gulyamov, U.I. Erkaboev, R.G. Rakhimov, J.I. Mirzaev, N.A. Sayidov. Determination of the dependence of the two-dimensional combined density of states on external factors in quantum-dimensional heterostructures // Modern Physics Letters B. 2023. Vol. 37, Iss.10, Article ID 2350015.
65. U.I. Erkaboev, R.G. Rakhimov. Determination of the dependence of the oscillation of transverse electrical conductivity and magnetoresistance on temperature in heterostructures based on quantum wells // East European Journal of Physics. 2023. Iss.3, pp.133-145.
66. U.I. Erkaboev, R.G. Rakhimov, J.I. Mirzaev, U.M. Negmatov, N.A. Sayidov. Influence of a magnetic field and temperature on the oscillations of the combined density of states in two-dimensional semiconductor materials // Indian Journal of Physics. 2024. Vol. 98, Iss. 1, pp.189-197.

67. U. Erkaboev, R. Rakhimov, J. Mirzaev, N. Sayidov, U. Negmatov, A. Mashrapov. Determination of the band gap of heterostructural materials with quantum wells at strong magnetic field and high temperature // AIP Conference Proceedings. 2023. Vol. 2789, Iss.1, Article ID 040056.
68. U.I. Erkaboev, R.G. Rakhimov. Simulation of temperature dependence of oscillations of longitudinal magnetoresistance in nanoelectronic semiconductor materials // e-Prime-Advances in Electrical Engineering, Electronics and Energy. 2023. Vol. 5, Article ID 100236.
69. U.I. Erkaboev, R.G. Rakhimov, N.Y. Azimova. Determination of oscillations of the density of energy states in nanoscale semiconductor materials at different temperatures and quantizing magnetic fields // Global Scientific Review. 2023. Vol.12, pp.33-49
70. U.I. Erkaboev, R.G. Rakhimov, U.M. Negmatov, N.A. Sayidov, J.I. Mirzaev. Influence of a strong magnetic field on the temperature dependence of the two-dimensional combined density of states in InGaN/GaN quantum well heterostructures // Romanian Journal of Physics. 2023. Vol. 68, Iss. 5-6, pp.614-1.
71. R. Rakhimov, U. Erkaboev. Modeling of Shubnikov-de Haas oscillations in narrow band gap semiconductors under the effect of temperature and microwave field // Scientific Bulletin of Namangan State University. 2020. Vol.2, Iss. 11, pp.27-35.
72. U. Erkaboev, R. Rakhimov, J. Mirzaev, N. Sayidov, U. Negmatov, M. Abduxalimov. Calculation of oscillations in the density of energy states in heterostructural materials with quantum wells // AIP Conference Proceedings. Vol. 2789, Iss.1, Article ID 040055.
73. R. Rakhimov, U. Erkaboev. Modeling the influence of temperature on electron Landau levels in semiconductors // Scientific and Technical Journal of Namangan Institute of Engineering and Technology. 2020. Vol. 2, Iss. 12, pp.36-42.
74. U.I. Erkaboev, R.G. Rakhimov. Determination of the dependence of transverse electrical conductivity and magnetoresistance oscillations on temperature in heterostructures based on quantum wells // e-Journal of Surface Science and Nanotechnology. 2023
75. У.И. Эркабоев, Р.Г. Рахимов, Ж.И. Мирзаев, Н.А. Сайидов, У.М. Негматов. Вычисление осцилляции плотности энергетический

- состояний в гетеронаноструктурных материалах при наличии продольного и поперечного сильного магнитного поля // Научные основы использования информационных технологий нового уровня и современные проблемы автоматизации : I Международной научной конференции, 25-26 апреля 2022 года. стр.341-344.
76. U.I. Erkaboev, R.G. Rakhimov. Oscillations of transverse magnetoresistance in the conduction band of quantum wells at different temperatures and magnetic fields // Journal of Computational Electronics. 2024. Vol. 23, Iss. 2, pp.279-290
 77. У.И. Эркабоев, Р.Г. Рахимов, Ж.И. Мирзаев, Н.А. Сайидов, У.М. Негматов. Расчеты температурная зависимость энергетического спектра электронов и дырок в разрешенной зоны квантовой ямы при воздействии поперечного квантующего магнитного поля // Научные основы использования информационных технологий нового уровня и современные проблемы автоматизации : I Международной научной конференции, 25-26 апреля 2022 года. стр.344-347.
 78. U.I. Erkaboev, R.G. Rakhimov, J.I. Mirzaev, N.A. Sayidov, U.M. Negmatov. Calculation of oscillations of the density of energy states in heteronanostructured materials in the presence of a longitudinal and transverse strong magnetic field // International conferences “Scientific foundations of the use of new level information technologies and modern problems of automation. 2022. pp.341-344
 79. U.I. Erkaboev, R.G. Rakhimov, J.I. Mirzaev, N.A. Sayidov, U.M. Negmatov. Calculations of the temperature dependence of the energy spectrum of electrons and holes in the allowed zone of a quantum well under the influence of a transverse quantizing magnetic field // International conferences “Scientific foundations of the use of new level information technologies and modern problems of automation. 2022. pp.344-347
 80. R.G. Rakhimov, U.I. Erkaboev. Modeling of Shubnikov-de Haase oscillations in narrow-band semiconductors under the influence of temperature and microwave fields // Scientific Bulletin of Namangan State University. 2022. Vol. 4, Iss.4, pp.242-246.
 81. R.G. Rakhimov. The advantages of innovative and pedagogical approaches in the education system // Scientific-technical journal of NamIET. Vol. 5, Iss. 3, pp.292-296 (2020)

82. Р.Г. Рахимов, У.И. Эркабоев. Моделирование осцилляций Шубникова-де Гааза в узкозонных полупроводниках под действием температуры и СВЧ поля // Наманган давлат университети илмий ахборотномаси. 2019. Vol. 4, Iss. 4, pp.242-246
83. U.I. Erkaboev, R.G. Rakhimov, J.I. Mirzaev, N.A. Sayidov, U.M. Negmatov. Modeling the Temperature Dependence of Shubnikov-De Haas Oscillations in Light-Induced Nanostructured Semiconductors // East European Journal of Physics. 2024. Iss. 1, pp. 485-492.
84. M. Dadamirzaev, U. Erkaboev, N. Sharibaev, R. Rakhimov. Simulation the effects of temperature and magnetic field on the density of surface states in semiconductor heterostructures // Iranian Journal of Physics Research. 2024
85. U.I. Erkaboev, N.Yu. Sharibaev, M.G. Dadamirzaev, R.G. Rakhimov. Effect of temperature and magnetic field on the density of surface states in semiconductor heterostructures // e-Prime-Advances in Electrical Engineering, Electronics and Energy. 2024. Vol.10, Article ID 100815.
86. U.I. Erkaboev, Sh.A. Ruzaliev, R.G. Rakhimov, N.A. Sayidov. Modeling Temperature Dependence of The Combined Density of States in Heterostructures with Quantum Wells Under the Influence of a Quantizing Magnetic Field // East European Journal of Physics. 2024. Iss.3, pp.270-277.
87. U.I. Erkaboev, N.Yu. Sharibaev, M.G. Dadamirzaev, R.G. Rakhimov. Modeling influence of temperature and magnetic field on the density of surface states in semiconductor structures // Indian Journal of Physics. 2024.
88. U.I. Erkaboev, G. Gulyamov, M. Dadamirzaev, R.G. Rakhimov, J.I. Mirzaev, N.A. Sayidov, U.M. Negmatov. The influence of light on transverse magnetoresistance oscillations in low-dimensional semiconductor structures // Indian Journal of Physics. 2024.
89. Р.Г. Рахимов. Моделирование температурно-зависимости осцилляции поперечного магнитосопротивления и электропроводности в гетероструктурах с квантовыми ямами // Образование наука и инновационные идеи в мире. 2024. Vol. 37, Iss. 5, pp.137-152.
90. N. Sharibaev, A. Jabborov, R. Rakhimov, Sh. Korabayev, R. Sapayev. A new method for digital processing cardio signals using the wavelet function // BIO Web of Conferences. 2024. Vol. 130, Article ID 04008.
91. A.M. Sultanov, E.K. Yusupov, R.G. Rakhimov. Investigation of the Influence of Technological Factors on High-Voltage p^0-n^0 Junctions Based

- on GaAs // Journal of Nano- and Electronic Physics. 2024. Vol. 16, Iss. 2, Article ID 01006.
92. U.I. Erkaboev, R.G. Rakhimov, J.I. Mirzaev, N.A. Sayidov, U.M. Negmatov. Influence of temperature and light on magnetoresistance and electrical conductivity oscillations in quantum well heterostructured semiconductors // Romanian Journal of Physics. 2024. Vol. 69, pp.610
93. У.И. Эркабоев, Р.Г. Рахимов, Ж.И. Мирзаев, Н.А. Сайидов, У.М. Негматов, С.И. Гайратов. Влияние температуры на осцилляции поперечного магнитосопротивления в низкоразмерных полупроводниковых структурах // Namangan davlat universiteti Ilmiy axborotnomasi. 2023. Iss. 8, pp.40-48.
94. U. Erkaboev, N. Sayidov, R. Raximov, U. Negmatov, J. Mirzaev. Kvant o'rali geterostrukturalarda kombinatsiyalangan holatlar zichligiga magnit maydon va haroratning ta'siri // Namangan davlat universiteti Ilmiy axborotnomasi. 2023. Iss. 6, pp.16-22
95. У.И. Эркабоев, Р.Г. Рахимов. Вычисление температурной зависимости поперечной электропроводности в квантовых ямах при воздействии квантующего магнитного поля // II- Международной конференции «Фундаментальные и прикладные проблемы физики полупроводников, микро- и нанoeлектроники». Ташкент, 27-28 октября 2023 г. стр.66-68.
96. R.G.Rakhimov. Simulation of the temperature dependence of the oscillation of magnetosistivity in nanosized semiconductor structures under the exposure to external fields // Web of Technology: Multidimensional Research Journal. 2024. Vol.2, Iss.11, pp.209-221.