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Use of Wireless Technologies in the Automation of Technological Processes

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Annotation: Necessary conditions for the system of communication networks in the management of technological processes effectively support hybrid in process networks and traffic, durability, reliability, security and scalability technological management is important in the industrial environment. To develop an industrial-strength wireless network that can work hard process automation requirements, network restrictions is the design that includes the hardware and software components used. to the system to achieve the required quality of service, a broad view of systems should be considered as a general network-based indicator and applications based on operation, interaction and cooperation formed on the basis of individual components. To reach the accepted network, various problems are solved. As part of this study, three specific issues were addressed: the problem of time synchronization distributed systems, closed-loop management of limited resources wireless network and transmission power monitoring. wireless field nodes are created. They solve a limited problem. That's it maximum use of available resources in the nodes of the distributed area is envisaged. Recent developments in wireless communication technologies that create new opportunities for wireless communication gas and communication with field equipment in many fields examples include processes in oil distribution and chemical refining. Wireless communications can help the above areas improve the plant and knowledge, measurements by getting filler where wired communication is not allowed, operations and devices can be attached to the technological automation system. Operational field communication network requirements active support for hybrid traffic, durability, reliability, in an industrial environment, it is necessary to take advantage of security and scalability. In addition, the organization of such a network at scale the fact that it does not have any strong network is a concern in this regard and creates several problems.

Keywords: Wireless technologies, automation of technological processes, WLAN, situation monitoring, signal reception, technological system, software, technological time mode.

Introduction

Necessary conditions of communication networks in the technological system technology industries include real-time support for hybrid traffic and durability, reliability, security and scalability technical means should be suitable for the industrial environment. Also, to organize it is necessary to use a network that is free from technological problems, about its safety, performance and quality technological communication service is related to network management offer resources and services required by application by controlling delay, packet loss speed and bandwidth should be managed. Development of wireless industrial power. It imposes constraints on the network design to meet the automation requirements of these complex processes, includes hardware and software components. A broader view to achieve the desired technological system results should be considered as the overall performance of the systems and relies on network-based applications to function. Technological system management individual components, depending on their interaction and cooperation. There are three specific issues as part of this research addressed; i.e. time synchronization problem distributed systems, a. closed loop control over resource limited wireless networks and transmission power management in wireless field nodes. They are distributed in order to make the most of the available limited resources based on the available resources, the system of wireless technology is considered. This is one of the reasons for technological processes businesses may have problems setting up wireless networks. In addition, corporations require broadband wireless connectivity;

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home WLAN network does not offer enterprise coverage or capabilities the advent of second generation wireless broadband products are changing this corporate mindset. Second generation WLANs differ from the first generation and have the following advantages:

- Relationship between coverage and capacity: When 1G WLANs have emphasized coverage, 2G WLANs manage protection information security and will have the ability to support critical enterprise applications. This is the system corporately is that system coverage is in subsequent processes and if providing the correct number of access points. If sufficient capacity can be designed in advance, the processes will move to the time regime of technological automation.
- Focus on Security: Security has been improved in certain ways in 1G WLANs. Later 1G products introduced 128-bit static WEP we can see the results of efforts and research aimed at improving security. However, these are WEP keys is easily hacked and causes problems on several networks. Safety remains one of the most important factors and why enterprises are reluctant to deploy WLANs; there is the installation of access points that are not managed by the end user 70% chance of causing a sensitive effect more than 40% of enterprises will have it installed in the information system. 2G WLAN has an identity-based security management scheme.
- Move to integrated network management: For security and mobility for coexistence in large enterprises, 2G WLANs wired and wireless networks should be seamlessly integrated, it is carried out based on the possibilities available in the enterprise. From Networking in Planning and Architecture WLAN for corporate use, centralization is desirable. Network intelligence, especially security management, and distributing the processing to the ends of the wired-wireless and there are management options as an integrated network. This system helps to increase the speed of communication in sending information signals and receiving signals, and the quality of technological process control will have effective indicators.

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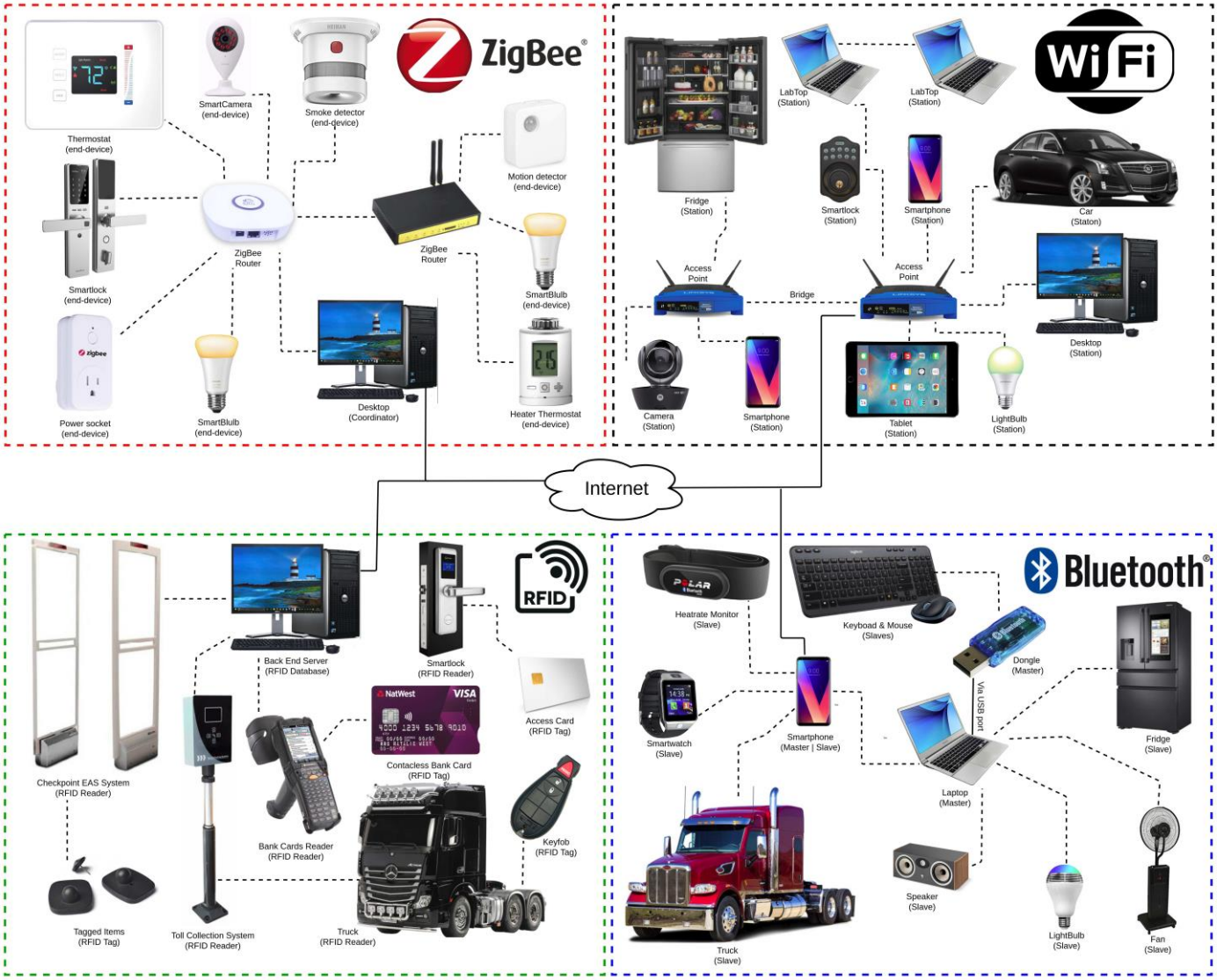

Picture 1. Technical means of sending and receiving signals of wireless networks. Wi-Fi, Bluetooth, ZigBee connectivity.

Conclusions

In Uzbekistan, wireless networks are developing on a large scale. In most developed countries, for example the process of gradual industrial modernization in China highly developed industrial production technology and automation control technology to quickly narrow the gap in industrial capacity with developed countries. ZigBee wireless communication technology is used as technical support and in the creation of wireless sensors. Until now sensor network is designed and analyzed. Later, the developed ZigBee wireless sensor is used to test the automated control of pharmaceutical plant production. Real-time temperature monitoring during technological processes equipment performance and performance information the transmission distance of the equipment is further studied. When comparing the temperature between the wireless sensor and concluded that the stability of the wired sensor and adjustment to the technological time mode. ZigBee wireless sensor is better than wired sensor. In the transmission efficiency test, the research is conducted in a closed environment without external obstacles and two brick walls and internal reinforced concrete walls and the maximum effective data transmission

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distance is three wireless sensors are taken. By combining the results of the two tests, wireless sensors using ZigBee wireless communication technology can be used in industrial automation control systems. Currently, wireless sensors can be used in the control of industrial automation, in the research center measures to increase the efficiency of wireless communication transmission sensors are not studied. For some large industrial tasks, it is difficult to use wire transmission the transmission distance is long. Power lines are not only wastes a lot of resources but is a security risk. In this case, long-distance wireless data transmission is required. Therefore, how to improve the effective transmission distance of ZigBee wireless sensors will be the focus of further research. Also, in the second part of the results, environmental factors affecting wireless transmission is studied. How to deal with the effects of wireless transmission environment is not discussed. Therefore, within technological processes improve future ZigbBee wireless control timeliness system is considered. Wireless networks can also be used in mining enterprises. We will be able to use sensorless networks to obtain geotechnological dimensions, calculate geological coordinates, and determine the location of minerals. Otelbayev Azizbek, a student of the Nukus Mining Institute at the Navoi State University of Mining and Technologies, conducted research and scientific work on the stages of automation of technological processes in the activity of mining enterprises. Azizbek has published many articles on technological processes in mining enterprises. Interests: management of technological processes in mining enterprises, chemical processes, metal melting furnaces, activities in mining enterprises. Otelbayev Azizbek is currently using energy consumption in technological systems, energy saving in simple mechanisms. Mining enterprises are conducting research on reducing energy consumption in most processes and increasing the productivity of operations. Energy is the most important means of controlling this technological process.

References

1. Bekturganova, Z., & Jumamuratov, R. (2017). МЕТОДЫ ОБУЧЕНИЯ САМОСТОЯТЕЛЬНОЙ РАБОТЕ УЧАЩИХСЯ НА УРОКЕ ХИМИИ.
2. Бектурганова, З., & Jumamuratov, R. (2016). Методические особенности и характер формирования понятий по химии.
3. Kaipbergenov, A., & Jumamuratov, R. (2019). The methodology of teaching chemistry based on the use of computer programs.
4. Каипберганов, А., Косназаров, С., Нургалиева, М., Jumamuratov, R., & Жумамуратов, Р. (2018). АНАЛИЗ ПРОЦЕССА ПОЛУЧЕНИЯ ТРОНЫ МЕТОДОМ КАРБОНИЗАЦИИ СОДОВОГО РАСТВОРА УГЛЕКИСЛОТОЙ.
5. Aynazarova, S., & Jumamuratov, R. (2020). ЗНАЧЕНИЕ БИОЛОГИИ В ЖИЗНИ ЧЕЛОВЕКА.
6. Bekturganova, Z., Bektileyova, G., & Jumamuratov, R. (2017). ИСПОЛЬЗОВАНИЕ НОВЫХ ИНФОРМАЦИОННЫХ ТЕХНОЛОГИЙ В ОБУЧЕНИИ ХИМИИ.
7. Aynazarova, S., Embergenova, U., & Jumamuratov, R. (2021). KIMYONI O'QITISH VOSITALARI TIZIMI VA UNING DIDAKTIK IMKONIYATLARINI O'RGANISH.
8. Abdirazakov, I., & Jumamuratov, R. (2022). MAKTABDA KIMYO FANINI O'QITISHDA KOMPYUTER MODELLARINI QO'LLASH.
9. Kaipbergenov, A., Aynazarova, S., & Jumamuratov, R. (2022). XIMIYA SABAQLIĞIN OQITIWDA INFORMACIYALIQ TEXNOLOGIYALARINAN PAYDALANIW.
10. Bekturganova, Z., Tangirbergenova, R., & Jumamuratov, R. (2017). ТЕХНОЛОГИИ ОБУЧЕНИЯ НА УРОКАХ ХИМИИ.

https://journals.researchparks.org/index.php/IJOT e-ISSN: 2615-8140 | p-ISSN: 2615-7071
Volume: 5 Issue: 4 | April 2023

11. Бектурганова, З., Жумамуратов, Р., & Султанов, Д. (2017). РЕКОМЕНДАЦИИ ПО РАЗРАБОТКЕ И ПРОВЕДЕНИЮ С МЕТОДОМ ПРОБЛЕМНОГО ОБУЧЕНИЯ НА УРОКАХ ХИМИИ.
12. O'TELBAYEVA Muhayyo Alisherovna. (2023). METHODOLOGY AND THEORY OF CHEMISTRY TEACHING IN SCHOOLS, METHODS AND PROCESSES OF THEIR STUDY. Journal of Experimental Studies, 2(2), 10–16. https://doi.org/10.5281/zenodo.7623700
13. O'TELBAYEVA Muhayyo Alisherovna. (2023). ANALYSIS OF PEDAGOGICAL AND PSYCHOLOGICAL METHODS AND APPROACHES. Pedagogical and Psychological Studies, 2(2), 12–16. https://doi.org/10.5281/zenodo.7624764
14. Yeshmuratova A. MINE BLASTING PROCESSES OPTIMIZATION STAGES OF DIGITAL TECHNOLOGY OF DETONATORS //Scienceweb academic papers collection. – 2023.
15. Utepbaeva G. et al. FOAM FLOTATION PROCESS, STAGES AND TECHNOLOGICAL PARAMETERS //Science and innovation. – 2023. – Т. 2. – №. A2. – С. 136-140.
16. Утемисов А. О., Юлдашова Х. Б. К. СИСТЕМЫ АВТОМАТИЧЕСКОГО УПРАВЛЕНИЯ //Universum: технические науки. – 2022. – №. 5-2 (98). – С. 45-47.
17. Tulepbergenovich K. B., Orazimbetovich U. A. Classification and analysis of computer programs for the physical preparation of athletes and expasure of prospects for their studies //European science review. – 2015. – №. 7-8. – С. 11-13.
18. Kaipbergenov A. T., Utemisov A. O., Yuldashova H. B. K. STEADY OF AUTOMATIC CONTROL SISTEMS //Academic research in educational sciences. – 2022. – Т. 3. – №. 6. – С. 918-921.
19. Orazimbetovich U. A. THE USE OF INFORMATION TECHNOLOGY IN THE FIELD OF PHYSICAL CULTURE AND SPORTS //European Journal of Research and Reflection in Educational Sciences Vol. – 2019. – Т. 7. – №. 2.
20. Djaksimuratov, K., O'razmatov, J., Yuldashev, S., Toshpulatov, D., & O'telbayev, A. (2021). Geological-Geochemical and Mineralogical Properties of Basalt Rocks of Karakalpakstan.
21. Djaksimuratov, K., O'razmatov, J., Mnajatdinov, D., & O'telbayev, A. (2021). PROPERTIES OF COAL, PROCESSES IN COAL MINING COMPANIES, METHODS OF COAL MINING IN THE WORLD.
22. Djaksimuratov, K., Toshev, O., O'razmatov, J., & O'telbayev, A. (2021). MEASURING AND CRUSHING THE STRENGTH OF ROCKS USE OF VARIOUS TYPES OF SURFACTANTS FOR GRINDING.
23. Djaksimuratov, K., Ravshanov, Z., O'razmatov, J., & O'telbayev, A. (2021). Comprehensive monitoring of surface deformation in underground mining, prevention of mining damage. Modern technologies and their role in mining.
24. Djaksimuratov, K., O'razmatov, J., Maulenov, N., & O'telbayev, A. (2021). FACTORS INFLUENCING THE CONDITIONS OF OPEN PIT MINING, ORE MASS AND DEFORMATION, PROCESSES THAT LEAD TO IMBALANCE DURING EXCAVATION.
25. Djaksimuratov, K., Jumabayeva, G., Maulenov, N., & Rametullayeva, M. (2022). Improving the Efficiency of Excavators Increasing the Efficiency of Temporary Ditch Excavator.
26. Djaksimuratov, K., Jumabayeva, G., Maulenov, N., & Rametullayeva, M. (2022). MONITORING THE CONDITION OF THE DEPOSIT IN MINING ENTERPRISES. MODERN METHODS OF DETERMINING THE LOCATION OF MINERALS.

https://journals.researchparks.org/index.php/IJOT e-ISSN: 2615-8140 | p-ISSN: 2615-7071
Volume: 5 Issue: 4 | April 2023

27. Djaksimuratov, K., Joldasbayeva, A., Bayramova, M., Tolibayev, E., & Maulenov, N. (2022). TECHNOLOGICAL CLASSIFICATION OF UNDERGROUND EXCAVATION WORKS IN GEOTECHNICAL MONITORING SYSTEMS.
28. Djaksimuratov, K., Maulenov, N., Ametov, R., Rametullayeva, M., & Bayramova, M. (2022). MODERN TECHNICAL METHODS OF MONITORING LANDSLIDES IN OPEN MINES.
29. Joldasbayeva, A., Ametov, R., Embergenov, A., Maulenov, N., & Kulmuratova, A. (2022). Technology to prevent Methane or coal dust explosions in the mine.
30. Djaksimuratov, K., Maulenov, N., Rametullayeva, M., Kulmuratova, A., & Embergenov, A. (2022). Technology for Determining the Force of Impact on Buildings in the Vicinity during Blasting Operations in Mines.
31. Djaksimuratov, K., Jumabayeva, G., Maulenov, N., & Rametullayeva, M. (2022). CORROSION OF METALS AND FACTORS AFFECTING IT. METHODS OF PREVENTING CORROSION OF METALS.
32. Kulmuratova, A., Utepbaeva, G., Azizov, A., Yo'ldashova, H., & O'telbayev, A. (2022). AUTOMATION AND ROBOTIZATION OF UNDERGROUND MINES.
33. Ravshanov, Z., O'razmatov, J., Zaytova, M., Kulmuratova, A., & O'telbayev, A. (2022). Conveyor belt structure and mode of operation in mines.
34. Djaksimuratov, K., Maulenov, N., Joldasbayeva, A., O'razmatov, J., & O'telbayev, A. (2022). Model Of Stages of Determination of Strength of Dynamic Fracture of Rocks and Digital Technological Verification.
35. Djaksimuratov, K., Ravshanov, Z., Ergasheva, Z., O'razmatov, J., & O'telbayev, A. (2022). Underground mine mining systems and technological parameters of mine development.
36. Djaksimuratov, K., Maulenov, N., Joldasbayeva, A., O'razmatov, J., & O'telbayev, A. (2022). Methods of Determining the Effect of Temperature and Pressure on the Composition of Rocks.
37. Ravshanov, Z., Joldasbayeva, A., Bayramova, M., & O'telbayev, A. (2023). MINING TECHNOLOGICAL EQUIPMENT THAT DETERMINES THE SLOPE ANGLES OF THE MINE BY MEANS OF LASER BEAMS.
38. Yeshmuratova, A., Kulmuratova, A., Maulenov, N., & Otemisov, U. (2023). MINE BLASTING PROCESSES OPTIMIZATION STAGES OF DIGITAL TECHNOLOGY OF DETONATORS.
39. Ravshanov, Z., Joldasbayeva, A., Maulenov, N., & O'telbayev, A. (2023). Determination of mineral location coordinates in geotechnology and mining enterprises.
40. Djaksimuratov, K., Batirova, U., Otemisov, U., & Aytmuratov, S. (2023). STEPS FOR DETERMINING THE SLOPE ANGLE OF AN OPEN MINE.
41. Djaksimuratov, K., Batirova, U., Abdullaev, A., & Joldasbayeva, A. (2023). GATHERING COORDINATES OF THE GEOLOGICAL AND GEOTECHNICAL LOCATION OF THE MINE.
42. Ravshanov, Z., Joldasbayeva, A., Bayramova, M., & Madreymov, A. (2023). IN GEOLOGICAL AND GEOTECHNICAL PROCESSES IN THE MINE USE OF TECHNOLOGICAL SCANNING EQUIPMENT IN THE UNDERGROUND MINING METHOD.
43. Djaksimuratov, K., Jumabayeva, G., Maulenov, N., & Rametullayeva, M. (2022). Casting And Evaluation of Properties for an Aluminum Alloy Material and Optimizing the Quality Control Parameters.

https://journals.researchparks.org/index.php/IJOT e-ISSN: 2615-8140 | p-ISSN: 2615-7071
Volume: 5 Issue: 4 | April 2023

44. Djaksimuratov, K., Jumabayeva, G., Batirova, U., & O'telbayev, A. (2023). GROUNDWATER CONTROL IN MINES
45. Abdiramanova, Z., Jumabayeva, G., Batirova, U., & O'telbayev, A. (2023). ACTIVITY OF TEBINBULAK IRON ORE MINING ENTERPRISES IN THE REPUBLIC OF KARAKALPAKSTAN.
46. Qurbonov.A.A, Djaksimuratov Karamatdin Mustapaevich, & O'telbayev Azizbek Alisher o'g'li. (2021). FACTORS INFLUENCING THE CONDITIONS OF OPEN PIT MINING, ORE MASS AND DEFORMATION. PROCESSES THAT LEAD TO IMBALANCE DURING EXCAVATION. Eurasian Journal of Academic Research, 1(6), 45–49. https://doi.org/10.5281/zenodo.5500210
47. O'telbayev Azizbek Alisher o'g'li. (2022). STRENGTH PROPERTIES OF ROCKS AND FACTORS INFLUENCING THEM AND THE PROCESS OF CHANGING THE PROPERTIES OF ROCKS. https://doi.org/10.5281/zenodo.6034442
48. Joldasbayeva, A., Maulenov, N., Mnajatdinov, D., & O'telbayev, A. (2023). PROCESSES OF DRAWING UP A VENTILATION SYSTEM SCHEME IN MINES.
49. Maulenov, N., Joldasbayeva, A., O'razmatov, J., & Mnajatdinov, D. (2023). TECHNOLOGICAL MODES OF MONITORING THE LOCATION OF MINES IN THE MINE AND THE SLOPE BORDER OF THE BLAST AREA.
50. Maulenov, N., Joldasbayeva, A., Amanbaev, N., & Mnajatdinov, D. (2023). PROCESSES OF BENEFICIATION AND EXTRACTION OF ORES IN IRON MINES (IN THE EXAMPLE OF TEBIN BULAK IRON MINE).
51. Maulenov, N., Joldasbayeva, A., Amanbaev, N., & Mnajatdinov, D. (2023). DETERMINATION OF VIBRATIONS CAUSED BY BLASTING PROCESSES IN OPEN PIT MINING AT MINING ENTERPRISES.
52. Maulenov, N., Joldasbayeva, A., O'razmatov, J., & Mnajatdinov, D. (2023). MOBILE TECHNOLOGICAL METHODS OF SAFETY MANAGEMENT IN SURFACE MINING.
53. Jumabayeva Guljahon Jaqsilikovna. (2023). CONTROL OF UNDERGROUND WATER IN THE MINE, DETECTION AND PREVENTION OF RISKS. ACADEMIC RESEARCH IN MODERN SCIENCE, 2(5), 159–166. https://doi.org/10.5281/zenodo.7648010
54. Утемисов А. О., Юлдашова Х. Б. К. СИСТЕМЫ АВТОМАТИЧЕСКОГО УПРАВЛЕНИЯ //Universum: технические науки. – 2022. – №. 5-2 (98). – С. 45-47.
55. Ametov Bayram Tursynbaevich, Uzakbaeva Akmaral Sulayman Kizi, & Allamuratov Guljamal Bisengali Kizi. (2022). Wind Mill and Solar Energy. Texas Journal of Engineering and Technology, 15, 178–179. Retrieved from https://zienjournals.com/index.php/tjet/article/view/3068
56. Tolibayev Y. et al. WITH CHARGE MELTING METHODS AND LOW METAL CONTENT IN THE FURNACE EFFECT OF ELECTRODES //Международная конференция академических наук. – 2023. – Т. 2. – №. 2. – С. 151-160.
57. Tolibayev Y. et al. ENVIRONMENTALLY FRIENDLY METHODS OF MINING METAL ORES //Академические исследования в современной науке. – 2023. – Т. 2. – №. 7. – С. 45-56.
58. Tolibayev Y. et al. METHODS OF ENSURING THE INCREASE IN THE QUALITY OF EXTRACTION OF NON-FERROUS, RARE, RARE EARTH METALS //Science and innovation in the education system. – 2023. – Т. 2. – №. 3. – С. 22-31.

https://journals.researchparks.org/index.php/IJOT e-ISSN: 2615-8140 | p-ISSN: 2615-7071
Volume: 5 Issue: 4 | April 2023

59. Tolibayev Y. et al. DISADVANTAGES OF TECHNOLOGICAL AUTOMATION IN METAL MELTING //Development and innovations in science. – 2023. – T. 2. – №. 2. – C. 136-146.

60. Tolibayev Y. et al. IN METALLURGICAL PROCESS MODELING SYSTEM HIGH TEMPERATURE COPPER REFINING PROCESSES //Models and methods in modern science. – 2023. – T. 2. – №. 3. – C. 12-22.

61. Abdiramanova Zamira Uzaqbayevna. (2023). STUDIES ON THE CHEMICAL COMPOSITION AND PROPERTIES OF PORTLAND CEMENT. EURASIAN JOURNAL OF ACADEMIC RESEARCH, 3(3), 13–21. https://doi.org/10.5281/zenodo.7712581

62. Najimova Nursuliw Bazarbaevna. (2023). GENERAL INFORMATION ABOUT CHEMICAL PROCESSES AND REACTORS. EURASIAN JOURNAL OF ACADEMIC RESEARCH, 3(3), 28–37. https://doi.org/10.5281/zenodo.7773462

63. Ravshanov, Z., Ergasheva, Z., Maxsitaliyeva, L., Pardaev, S., & O'telbayev, A. (2022). 3D Technological System of Management of Geological Exploration Processes of Mining Enterprises.

64. Mirzabek qizi, A. M., & Orinbay qizi, K. S. (2023). Application of Modern Microprocessors in Technological Measuring Devices and Principles of their Use. Miasto Przyszłości, 32, 320–326. Retrieved from https://miastoprzyszlosci.com.pl/index.php/mp/article/view/1158

65. Kulmuratova Aliya Janabay qizi. (2023). Automation Technique Design Classification of Technological Objects. International Journal of Scientific Trends, 2(2), 128–136. Retrieved from https://scientifictrends.org/index.php/ijst/article/view/66

66. Elmurodovich T. O. et al. Measuring and crushing the strength of rocks use of various types of surfactants for grinding //ACADEMICIA: An International Multidisciplinary Research Journal. – 2021. – T. 11. – №. 10. – C. 557-561.

67. Djaksimuratov K. Comprehensive monitoring of surface deformation in underground mining, prevention of mining damage. Modern technologies and their role in mining //Scienceweb academic papers collection. – 2021.

68. Mustapaevich D. K. et al. FACTORS INFLUENCING THE CONDITIONS OF OPEN PIT MINING, ORE MASS AND DEFORMATION, PROCESSES THAT LEAD TO IMBALANCE DURING EXCAVATION //Galaxy International Interdisciplinary Research Journal. – 2021. – T. 9. – №. 10. – C. 648-650.

69. Muxtar o'g'li A. R. et al. Technology to prevent Methane or coal dust explosions in the mine //The Peerian Journal. – 2022. – T. 10. – C. 22-32.

70. Axmet o'g'li M. A. et al. IN GEOLOGICAL AND GEOTECHNICAL PROCESSES IN THE MINE USE OF TECHNOLOGICAL SCANNING EQUIPMENT IN THE UNDERGROUND MINING METHOD //Intent Research Scientific Journal. – 2023. – T. 2. – №. 1. – C. 20-27.

71. Maulenov N. et al. PROCESSES OF DRAWING UP A VENTILATION SYSTEM SCHEME IN MINES //Академические исследования в современной науке. – 2023. – T. 2. – №. 4. – C. 161-166.

72. Maulenov N. et al. TECHNOLOGICAL MODES OF MONITORING THE LOCATION OF MINES IN THE MINE AND THE SLOPE BORDER OF THE BLAST AREA //Development and innovations in science. – 2023. – T. 2. – №. 2. – C. 27-32.

https://journals.researchparks.org/index.php/IJOT e-ISSN: 2615-8140 | p-ISSN: 2615-7071
Volume: 5 Issue: 4 | April 2023

73. Jumabayeva Guljahon Jaqsilikovna. (2023). CONTROL OF UNDERGROUND WATER IN THE MINE, DETECTION AND PREVENTION OF RISKS. ACADEMIC RESEARCH IN MODERN SCIENCE, 2(5), 159–166. https://doi.org/10.5281/zenodo.7648010
74. Нажимова Н. Б. и др. ВЛИЯНИЕ ИНФОРМАЦИОННЫХ И КОММУНИКАЦИОННЫХ ТЕХНОЛОГИЙ И ЛАБОРАТОРНОЙ МОДЕЛИ ПРИ ОБУЧЕНИИ ХИМИИ //ЛУЧШАЯ ИССЛЕДОВАТЕЛЬСКАЯ РАБОТА 2021. – 2021. – С. 416-420.
75. Нажимова Н. Б. и др. ҚОРАҚАЛПОҒИСТОН ФОСФОРИТЛАРИ ВА ГЛАУКОНИТЛАРИ ТАВСИФИ ҲАМДА УЛАРНИНГ ХУСУСИЯТЛАРИ //Oriental renaissance: Innovative, educational, natural and social sciences. – 2022. – Т. 2. – №. 12. – С. 186-190.
76. Abdiramanova, Z. (2023). STUDIES ON THE CHEMICAL COMPOSITION AND PROPERTIES OF PORTLAND CEMENT.
77. Jumabayeva , G. . (2023). PLANNING AND MINE DESIGN IN OPEN-PIT MINING PROCESSES AT MINING ENTERPRISES. Евразийский журнал академических исследований, 3(3 Part 2), 135–143. извлечено от https://in-academy.uz/index.php/ejar/article/view/11147
78. Kaipbergenov, B., & Utemisov, A. (2015). Classification and analysis of computer programs for the physical preparation of athletes and expasure of prospects for their studies.
79. Utemisov, A., & Kaipbergenov, B. (2015). ОТДЕЛЬНЫЕ ВОПРОСЫ МОДЕЛИРОВАНИЯ И ДИАГНОСТИКИ ФИЗИЧЕСКИХ НАГРУЗОК У ЗАНИМАЮЩИХСЯ СПОРТОМ (С ПРИМЕНЕНИЕМ КОМПЬЮТЕРНЫХ ТЕХНОЛОГИЙ).
80. Utemisov, A. (2017). ЭЛЕКТРОН ДАРСЛИК ЗАМОНАВИЙ ЎҚУВ ЖАРАЁНИНИНГ ЭНГ АСОСИЙ ЭЛЕМЕНТИ.
81. Ильясов, А., & Utemisov, A. (2018). ИННОВАЦИОН ТЕХНОЛОГИЯЛАР АСОСИДА ТАЪЛИМНИ ТАШКИЛ ЭТИШ ШАКЛЛАРИ ВА ТУРЛАРИ.
82. Utemisov, A. (2019). MODERN INFORMATION TECHNOLOGIES IN THE TRAINING OF SPECIALISTS IN PHYSICAL CULTURE AND SPORTS.
83. Нажимова Н. Б. ИССЛЕДОВАНИЕ ТЕРМИЧЕСКИХ СВОЙСТВ СЫРЬЯ АСФАЛЬТОБЕТОННЫХ СМЕСЕЙ //ПРОРЫВНЫЕ НАУЧНЫЕ ИССЛЕДОВАНИЯ: ПРОБЛЕМЫ, ЗАКОНОМЕРНОСТИ, ПЕРСПЕКТИВЫ. – 2020. – С. 30-32.
84. Ravshanov, Z., Ergasheva, Z., Maxsitaliyeva, L., Pardaev, S., & O'telbayev, A. (2022). 3D Technological System of Management of Geological Exploration Processes of Mining Enterprises.
85. Djaksimuratov, K., O'razmatov, J., Mnajatdinov, D., & O'telbayev, A. (2021). PROPERTIES OF COAL, PROCESSES IN COAL MINING COMPANIES, METHODS OF COAL MINING IN THE WORLD.
86. Ravshanov, Z. (2022). MINING PROCESSES OF DRILLING MACHINES. INFORMATION ABOUT THE TECHNOLOGICAL ALARM SYSTEM OF DRILLING MACHINES.
87. O'telbayev, A. (2022). STRENGTH PROPERTIES OF ROCKS AND FACTORS INFLUENCING THEM AND THE PROCESS OF CHANGING THE PROPERTIES OF ROCKS. «BEST INNOVATOR IN SCIENCE - 2022» Organized by Innovative Academy. https://doi.org/https://doi.org/10.5281/zenodo.6034441
88. Kulmuratova Aliya Janabay qizi, Utepbaeva Gulnaz Saken qizi, O'telbayev Azizbek Alisher o'g'li, Azizov Azatbek Jumabek o'g'li, & Yo'ldashova Hilola Baxtiyor qizi. (2022). AUTOMATION AND

https://journals.researchparks.org/index.php/IJOT e-ISSN: 2615-8140 | p-ISSN: 2615-7071
Volume: 5 Issue: 4 | April 2023

ROBOTIZATION OF UNDERGROUND MINES. Open Access Repository, 9(10), 20–28. https://doi.org/10.17605/OSF.IO/UYH93

89. Ravshanov Zavqiddin Yahyo o‘g‘li, O‘telbayev Azizbek Alisher o‘g‘li, O‘razmatov Jonibek Ikromboy o‘g‘li, Zaytova Madina Nazarbay qizi, & Kulmuratova Aliya Janabay qizi. (2022). Conveyor belt structure and mode of operation in mines. Eurasian Journal of Engineering and Technology, 11, 72–80. Retrieved from https://geniusjournals.org/index.php/ejet/article/view/2360
90. Туремуратов Ш. Н., Нажимова Н. Б. Химические и физико-химические свойства карбонатных минералов плато Устюрт //Universum: химия и биология. – 2020. – №. 10-1 (76). – С. 61-63.
91. Кадирбаев А. Б. и др. ПРИМЕР ИСПОЛЬЗОВАНИЯ ТРАДИЦИОННЫХ ТЕХНОЛОГИЙ ПРОИЗВОДСТВА ИЗВЕСТИ //ПРИОРИТЕТНЫЕ НАПРАВЛЕНИЯ РАЗВИТИЯ НАУКИ И ОБРАЗОВАНИЯ. – 2021. – С. 15-17.
92. Ravshanov Zavqiddin Yahyo o‘g‘li, O‘telbayev Azizbek Alisher o‘g’li, Joldasbayeva Aysulu Baxitbay qizi, & Bayramova Minevvar Axmet qizi. (2023). MINING TECHNOLOGICAL EQUIPMENT THAT DETERMINES THE SLOPE ANGLES OF THE MINE BY MEANS OF LASER BEAMS. Neo Scientific Peer Reviewed Journal, 6, 17–23. Retrieved from https://neojournals.com/index.php/nspj/article/view/96
93. Нажимова Н. Б. и др. РОЛЬ МИНЕРАЛЬНОГО НАПОЛНИТЕЛЯ В АСФАЛЬТОВОЙ СМЕСИ //МОЛОДОЙ УЧЁНЫЙ. – 2021. – С. 15-18.
94. Ravshanov Zavqiddin Yahyo o‘g‘li, Joldasbayeva Aysulu Baxitbay qizi, Maulenov Nurlibek Axmet o’g’li, & O‘telbayev Azizbek Alisher o‘g’li. (2023). Determination of mineral location coordinates in geotechnology and mining enterprises. Global Scientific Review, 11, 8–14. Retrieved from http://scienticreview.com/index.php/gsr/article/view/134
95. Uteniyazov, A. K., Leyderman, A. Y., Gafurova, M. V., Juraev, K. N., & Dauletov, K. A. (2021). The effect of ultrasonic treatments on current transport processes in Al-Al2O3-p-CdTe-Mo structure. Advances in Materials Science and Engineering, 2021, 1-6.
96. Dauletov K. A. et al. A heat-resistant Schottky diode based on Ge/GaAs heterosystem //Poverkhnost. – 1999. – №. 3. – С. 60-62.
97. Boltovets, N. S., Basanets, V. V., Dauletov, K. A., Gavrilenko, V. V., Kholevchuk, V. V., Konakova, R. V., ... & Popov, V. P. (1998). editors: Guobang C., Steimle FW.
98. Dauletov K. A., Mitin V. F. The production technology of semiconductor epitaxial films. – 2011.
99. O‘telbayeva, M. ., & O‘telbayev, A. . (2023). EXPERIMENTAL WORKS BASED ON ADVANCED, PEDAGOGICAL-PSYCHOLOGICAL AND MODERN METHODS OF TEACHING CHEMISTRY AT SCHOOL. Евразийский журнал академических исследований, 3(3), 79–88. извлечено от https://in-academy.uz/index.php/ejar/article/view/11332