https://gospodarkainnowacje.pl

GOSPODARKA I INNOWACJE

LABORATORIUM WIEDZY Artur Borcuch

Volume: 33 | 2023

Economy and Innovation
ISSN: 2545-0573

For more information contact: editor@gospodarkainnowacje.pl

THE MOST URGENT PROBLEMS OF BASIC TECHNOLOGICAL PROCESSES AND HARDWARE SCIENCE

Atamirzayeva Sahiba Turgunovna

Namangan Institute of Engineering and Construction, senior teacher of the Department of Labor Protection and Ecology

A R T I C L E I N F O.

Keywords: Technological Processes, Hardware Science.

abstract

The science of "Technological processes and devices" teaches the in-depth mastering of specialized sciences, how to increase production intensity and use technological devices efficiently. The theoretical foundations of the main processes, their calculation methods and the principles of equipping them with efficient devices form the basis of this science program. The subject "Technological processes and devices" is considered a general professional subject and is taught in the 3rd year according to the established curriculum. The science of "Technological processes and devices" serves as a basis for the study of specialized subjects in all undergraduate educational fields.

The purpose of teaching the subject "Technological processes and devices" is to teach students the types and basics of all technological processes and devices in chemistry and all other related industries. It deepens the theoretical foundations of the study of "technological processes and devices" and provides an opportunity for a creative approach to the study of processes and devices.In order to achieve this goal, it is necessary to teach the theory of basic processes and devices, principles of construction of machines and devices that implement these processes, and methods of their calculation.

The following students are assigned to the knowledge, skills and qualifications of students in science. Student:

- Main properties of liquids;
- Continuity equation of flow;
- Types of friction and local resistance;
- Basics of similarity theory;
- Systems of different genders;
- Types of heat dissipation;
- Mass exchange processes;
- To have an idea about mechanical processes;
- Movement modes;

- pumps and their types;
- filtering process and devices;
- industrial gas purification methods and devices;
- processes and laws of heat exchange;
- know and be able to use mass exchange processes and laws;
- clear interpretation of technological processes;
- calculation and design of devices suitable for processes;
- Must have the skills to analyze the advantages and disadvantages of devices.

After our country gained independence, our government managed the national economya number of practical works on development are being carried out. The main focus is on agricultural products production, productivity by introducing new modern, ecologically clean technologies of cultivation increase, new efficient technologies of processing and storage of agricultural products are introduced production of consumer goods based on local raw materials, new modern technologies aimed at implementation, reconstruction of existing production. These are technological processes and leads to the renewal of equipment and the search for ways of their effective use.

In 1935, by Prof. A.G. Kasatkin "The main processes of chemical technology and devices" textbook is published. This book played a major role in the development of this science. In the development of this science, Russian scientists A.G. Kasatkin, N.M. Javoronkov, V.V. Kafarov, P.G.Romankov, A.N.Planovsky, V.N.Stabnikov, N.I. Gelperin, English scientists R. Owen, Kingery, Euler, The contributions of Fure, Kirchhoff, Todes, Freud, Peckle and others are great.

After the years of independence, Uzbek scientists have done and are doing scientific and practical work in this field His works became known all over the world. Uzbek scientists Acad. Z. Salimov, Prof. Tuychiev I, Yusufbekov N, Agzamkhodjaev A, Khodjaev O.F. Beglov B.M. and a number of our scientist’s .He made great contributions to the development of production technologies in Uzbekistan. Various districts for raw materials in industrial enterprises for the production of agricultural products chemical, physico-chemical, and mechanical treatments are given in the methods. This type of treatment is called a process the same type of devices are used to carry them. Processes and devices where technologies are common are fundamental in manufacturing industries called processes and devices. Theory of basic processes in process and devices course, calculation methods of processes and devices, the principle of operation of devices and their structure, them design methods are studied. Laws of basic technological processes and devices course in physics, mathematics, chemistry and based on the laws of fundamental sciences, as well as physico-chemistry and thermodynamics is studied.

Today, the main technological processes and devices are computer science, cybernetics It is very difficult to imagine without science. Most processes are based on theoretical calculations their technological regulations will be created. Creation of technological regulations .It is a very complicated process, and the parameters of this process are studied in a series of laboratory tests Any process can be tested on models in laboratory conditions and obtained in it based on the results, it will be necessary to apply it to production. This is a chemical technology process-lars and a new field of device science - modeling of chemical technology processes.To date, this direction has served as a separate science for production.

In addition, in order to effectively conduct any process, it is applied to this process

Laws and methods of increasing product output are studied. So “Main technological

"Processes and devices" course is a general engineering subject, for studying specialized subjects serves as a very important bridge.The subject and task of the science is the study of technological processes,

the laws of medical sciences application to technological processes. It solves the following tasks:

1. Selection of the most suitable mode of production in motion, high production of equipment achieving capacity, increasing product quality, successfully solving environmental problems;
2. High efficiency and low waste technology in making new production projects selection of schemes, installation of relatively rational types of equipment;
3. Scientific calculation books, relying on modern computing tools when choosing equipment making, new principled methods of calculation of processes and equipment in chemical technology development;
4. To study the main factors that determine the progress of the processes in scientific investigation work, them get general correlations in calculations and quickly develop the results of laboratory studies application to release;

Classification of the main chemical technological processes:

In relation to the laws of speed of technological processes, regardless of the complexity of the process divided into the following groups depending on:

1. Hydromechanical processes - in them, the speed is determined based on hydromechanical laws. This transfer of gases and liquids to processes, extraction and separation of non-homogeneous gas-liquid systems and others included.
2. Heat processes - in them, the speed obeys the laws of heat transfer. Such processes Heating of gases and liquids includes condensation of vapors, boiling of liquids.
3. Matter exchange processes - matter in which the speed is in the interphase surface layer subject to the laws of exchange. They include absorption, adsorption, extraction, liquids including driving, drying, etc.
4. Chemical processes-in them; speed is expressed by the laws of chemical kinetics. Speed depends on the heat of the system and the rate of mass transfer.
5. Mechanical processes - in them, the speed is based on the mechanical laws of solid bodies.They include grinding; sorting, mixing of solid and pasty substances, etc enters.

List of used literature:

1. ATAMIRZAEVA, S., & JURAEVA, D. INTERFAOL IN THE ORGANIZATION OF THE SCIENCE OF ECOLOGY USING METHODS. ЭКОНОМИКА, 55-57.
2. Turgunovna, A. S., Sadriddinovich, B. N., & Mahammadjanovich, S. M. (2021, April). Kinetics of Decomposition of Washed Roasted Phosphoconcentrate in Hydrochloric Acid. In *E-Conference Globe* (pp. 194-197).
3. Атаханов, Ш. Н., Дадамирзаев, М. Х., Атамирзаева, С. Т., & Акрамбоев, Р. А. (2017). Использование порошка-полуфабриката из соковых выжимок топинамбура для получения мучных национальных изделий. *Хранение и переработка сельхозсырья*, (8), 5-7.
4. Рахимов, У. Ю., Атаханов, Ш. Н., Атамирзаева, С. Т., Хожиев, Р. М., & Дадамирзаев, М. Х. (2014). Использование порошка-полуфабриката, полученного из вторичного сырья соковых производств, в приготовлении мучных национальных изделий Узбекистана. *Молодой ученый*, (6), 226-229.
5. Атамирзаева, С. Т. (2022). СУМАЛАК–ОСНОВА ВИТАМИНОВ И ПИТАТЕЛЬНЫХ ВЕЩЕСТВ. *Eurasian Journal of Academic Research*, *2*(2), 112-116.

6. Atamirzaeva, S. (2022). ЧРЕЗВЫЧАЙНЫЕ СИТУАЦИИ, ВЫЗВАННЫЕ ВЫБРОСАМИ ХИМИЧЕСКИ ОПАСНЫХ ВЕЩЕСТВ. *Science and innovation*, *1*(B6), 678-681.
7. Atamirzaeva, S. (2022). ЧРЕЗВЫЧАЙНЫЕ СИТУАЦИИ, ВЫЗВАННЫЕ ВЫБРОСАМИ ХИМИЧЕСКИ ОПАСНЫХ ВЕЩЕСТВ. *Science and innovation*, *1*(B6), 678-681.
8. Сарибаева, Д. А. Хашимова, Ж. Х. & Атамирзаева, С. Т. (2017). ТЕХНОЛОГИЯ КОНСЕРВИРОВАНИЯ КАПЕРСОВ. *Cognitio rerum*, (3), 19-21.
9. Атаханов, Ш. Н. Акрамбаев, Р. А. Атамирзаева, С. Т., Хожиев, Р. М., & Рахимов, У. Ю. (2015). Системный анализ технологии получения повидла из вторичного сырья соковых производств. *Молодой ученый*, (11), 246-250.
10. Атамирзаева, С. Т. ПРОРОЩЕННЫЕ ЗЁРНА ПШЕНИЦЫ–ОСНОВА ВИТАМИНОВ И ПИТАТЕЛЬНЫХ ВЕЩЕСТВ. *ББК: 40я43 В562*, *113*.
11. Атамирзаева, С. Атаханов, Ш. Н. Сарибаева, Д. Хошимов, Х. & Хошимова, Ж. (2017). Разработка технологии лечебного напитка из слив.
12. Атаханов, Ш. Н. Акрамбоев, Р. А. Атамирзаева, С. Т. Хожиев, Р. М. & Маллабаев, О. Т. (2016). Анализ процесса сушки вторичного сырья соковых производств и формирование математической модели системы сушки при получение порошка полуфабриката. *Современные научные исследования и инновации*, (6), 144-146.
13. Пулатов, А. С., Мамаджанов, Л. М., & Атамирзаева, С. Т. (2019). ПРОРОЩЕННЫЕ ЗЁРНА ПШЕНИЦЫ–ОСНОВА ВИТАМИНОВ И ПИТАТЕЛЬНЫХ ВЕЩЕСТВ. In *ВКЛАД УНИВЕРСИТЕТСКОЙ АГРАРНОЙ НАУКИ В ИННОВАЦИОННОЕ РАЗВИТИЕ АГРОПРОМЫШЛЕННОГО КОМПЛЕКСА* (pp. 113-118).
14. Umarjonovna, D. D. (2023). Noorganik Kimyo Fanini O'qitishda Pedagogik Texnologiyalar Va Fan Yangiliklaridan Samarali Foydalanishning Ahamiyati. Web of Synergy: International Interdisciplinary Research Journal, 2(1), 86-90.
15. Umarjonovna, D. D. (2023). Elekt Energetikasi Yo'nalishida Tahsil Oluvchi Talabalarga Ekologiya Fanining O'rni VA Ahamiyati. Web of Synergy: International Interdisciplinary Research Journal, 2(1), 77-81.
16. Umarjonovna, D. D., & Olimjon o'g'li, O. S. (2022). O'QUV MAQSADLARI IERARXIYASI TARTIBIDAGI DARSNING TA'LIM SAMARADORLIGIGA TA'SIRI.
17. Джураева, Д. У., & Собиров, М. М. (2022, December). ТЕХНОЛОГИЯ ПОЛУЧЕНИЯ СУСПЕНДИРОВАННЫХ СЛОЖНЫХ УДОБРЕНИЙ С ИНСЕКТИЦИДНОЙ АКТИВНОСТЬЮ. In *Proceedings of International Educators Conference* (Vol. 3, pp. 175-190).
18. Djuraeva, D. (2010). ADDING THE CRIME OF INTERNATIONAL TERRORISM INTO THE STATUTE OF INTERNATIONAL CRIMINAL COURT: DEFINITION, BENEFITS TO JUSTICE AND OBSTACLES: дис. *Central European University*.
19. Djuraeva, D. (2010). ADDING THE CRIME OF INTERNATIONAL TERRORISM INTO THE STATUTE OF INTERNATIONAL CRIMINAL COURT: DEFINITION, BENEFITS TO JUSTICE AND OBSTACLES: дис. *Central European University*.
20. Djurayeva, D. (2022). EKOLOGIYA VA ATROF MUHIT MUHOFAZASI YO'NALISHIDA TAHSIL OLUVCHI TALABALARGA EKOLOGIYA FANINING O'RNI VA AHAMIYATI. *Theoretical aspects in the formation of pedagogical sciences*, *1*(7), 124-128.

21. Каххаров, А., & Джураева, Д. (2022). ЗНАЧЕНИЕ ХИМИИ В ПОДГОТОВКЕ КАДРОВ В ОБЛАСТИ СЕЛЬСКОГО ХОЗЯЙСТВА. *Theoretical aspects in the formation of pedagogical sciences*, *1*(6), 88-91.

22. Джураева, Д. & Эргашходжаев, Ш. К. О. (2022). РОЛЬ ЗЕЛЕНЫХ РАСТЕНИЙ В ЗАЩИТЕ ОКРУЖАЮЩЕЙ СРЕДЫ. *Conferencea*, 62-63.

23. Djurayeva, D., & Ikromova, M. (2022). KIMYO LABORATORIYALARIDA DARSLARNI TASHKIL QILISHDA INNOVATSION TEXNOLOGIYALARNI QO'LLASH. *Theoretical aspects in the formation of pedagogical sciences*, *1*(4), 52-55.

24. Уктамов, Д. А., & Джураева, Д. У. (2020). ПОЛУЧЕНИЕ МИКРОЭЛЕМЕНТСОДЕРЖАЩЕГО НИТРОФОСА НА ОСНОВЕ ТЕРМОКОНЦЕНТРАТА И ВТОРИЧНОГО СЫРЬЯ ГИДРОМЕТАЛЛУРГИИ. *Universum: технические науки*, (12-4 (81)), 82-85.

25. Mashrapov, Q., Yoqubjanova, Y., Djurayeva, D., & Xasanboyev, I. (2022). THE ROLE OF CREDIT-MODULE SYSTEM IN DEVELOPMENT OF STUDENTS'SPECIALTIES IN TECHNICAL HIGHER EDUCATION INSTITUTIONS. *Theoretical aspects in the formation of pedagogical sciences*, *1*(6), 332-336.

26. Джураева, Д. У., & Мамадалиев, Ш. (2022). ЗАЩИТА ОЗОНОВОГО СЛОЯ-ЗАДАЧА КАЖДОГО ЧЕЛОВЕКА. *Conferencea*, 29-31.

27. Отамирзаев, С. О. У., & Джураева, Д. У. (2022). АНАЛИЗ И ИСПОЛЬЗОВАНИЕ ИНТЕРАКТИВНЫХ МЕТОДОВ ПРИ ВЫПОЛНЕНИИ ЛАБОРАТОРНЫХ РАБОТ ПО ХИМИИ. *Oriental renaissance: Innovative, educational, natural and social sciences*, *2*(7), 760-765.

28. Umarjonovna, D. D., & Gulomjonovna, Y. Y. (2022). CHALLENGES OF FOOD SECURITY. *Conferencea*, 505-507.

29. ATAMIRZAEVA, S., & JURAEVA, D. INTERFAOL IN THE ORGANIZATION OF THE SCIENCE OF ECOLOGY USING METHODS. *ЭКОНОМИКА*, 55-57.

30. Baxriddinov, N., Mamadaliev, S., & Djuraeva, D. (2022). ОЛИЙ ТАЪЛИМ МУАССАСАЛАРИДА ЭКОЛОГИЯДАН ЎҚУВ МАШҒУЛОТЛАРИНИ ТАШКИЛ ЭТИШ. *Science and innovation*, *1*(B8), 10-15.

31. Бахриддинов, Н. С., Мамадалиев, Ш. М., & Джураева, Д. У. (2022). Современный Метод Защиты Озонового Слоя. *Central Asian Journal of Medical and Natural Science*, *3*(3), 1-4.

32. Шарипов, Ф. Ф. (2019). Цифровое развитие международного бизнеса. In *Приоритетные и перспективные направления научно-технического развития Российской Федерации* (pp. 112-113).

33. Шарипов, Ф. Ф. (2019). Экосистема угольной промышленности Российской федерации. *Путеводитель предпринимателя*, (43), 185-189.

34. Отамирзаев, О. У. & Шарипов, Ф. Ф. (2017). Методика проведения лабораторных занятий с интерактивными методами. *Science Time*, (2 (38)), 270-273.

35. Даминов, А. А. Махмудов, Н. М. & Шарипов, Ф. Ф. (2016). ПРИМЕНЕНИЕ БЕСКОНТАКТНЫХ АППАРАТОВ И ЛОГИЧЕСКИХ ЭЛЕМЕНТОВ В СХЕМАХ УПРАВЛЕНИЯ ЭЛЕКТРОПРИВОДАМИ. *Science Time*, (11 (35)), 143-147.

36. Даминов, А. А. Атмирзаев, Т. У., Махмудов, Н. М., & Шарипов, Ф. Ф. (2017). ПЕРСПЕКТИВНЫЕ НАПРАВЛЕНИЯ АВТОМАТИЗИРОВАННОГО УПРАВЛЕНИЯ

ПРОЦЕССА ПРОИЗВОДСТВА, ПЕРЕДАЧИ И ПОТРЕБЛЕНИЯ ЭЛЕКТРОЭНЕРГИИ. *Актуальные проблемы гуманитарных и естественных наук*, (2-3), 59-62.

37. Мамаджанов, А. Б. & Шарипов, Ф. Ф. (2016). Электр таъминоти тизимига энергия назорати ва хисоблашнинг автоматлаштирилган тизимларини жорий этишнинг самарадорлиги хакида. *International scientific journal*, (1 (1)), 76-79.
38. Махсудов, П. М. Давронова, М. У., Маннонов, Ж. А., & Умаров, Н. Ю. (2016). Вопросы подготовки будущего педагога профессионального образования к методической деятельности. *Высшая школа*, (5), 36-38.
39. Adashboyevich, M. Z. (2019). The role of innovation thinking in the formation of knowledge. *Вестник науки и образования*, (10-3 (64)), 70-72.
40. Mannonov, Z. A., & Mannonov, J. (2022). THE ROLE OF INNOVATION THINKING IN THE FORMATION OF KNOWLEDGE. *Theoretical aspects in the formation of pedagogical sciences*, *1*(6), 164-168.
41. Adashboyevich, M. J. (2019). PEDAGOGICAL AND PSYCHOLOGICAL BASIS OF FORMATION OF CREATIVE COMPETENCE IN INNOVATION PEDAGOGICAL ACTIVITY OF TEACHERS OF FUTURE PROFESSIONAL EDUCATION. *European Journal of Research and Reflection in Educational Sciences Vol*, *7*(10).
42. Adashboyevich, M. J., Qoviljanovich, I. S., Abduvali o'g'li, I. H., & Xabibullaevich, X. U. (2021). Modern Technology Of Surface Hardening Applied To Parts Of The Car. *NVEO-NATURAL VOLATILES & ESSENTIAL OILS Journal| NVEO*, 2673-2676.
43. Mannonov, J. A. (2019). Pedagogical and psychological basis of formation of creative competence in innovation pedagogical activity of teachers of future professional education. *European Journal of Research and Reflection in Educational Sciences//Great Britain//Progressive Academic Publishing*, *7*(10), 40-45.
44. Mannonov, J. A. (2019). Pedagogical activities with innovative measurement purpose movement in contract. *International Journal of Applied Research*.
45. Adashboevich, M. J., Qoviljanovich, I. S., & Fazlitdinovich, S. F. (2020). Collaborative Learning Based on an Innovative Approach. *International Journal of Progressive Sciences and Technologies*, *23*(2), 690-692.
46. Байбаева, М. Х., Химматалиев, Д. О., & Маннонов, Ж. А. (2021). Роль дидактических игр в учебно-воспитательном процессе. *В номере*, 25.
47. Маннонов, Ж. А., Имомназаров, С. К., Купайсинов, Д. Х. У., & Жамилов, Б. М. У. (2022). ТЕХНОЛОГИЧЕСКИЕ ПРОЦЕССЫ ФУНКЦИОНИРОВАНИЯ ПРОИЗВОДСТВЕННО-ТРАНСПОРТНОЙ СИСТЕМЫ И ВОПРОСЫ ИХ ЛОГИСТИЧЕСКОГО УПРАВЛЕНИЯ. *Universum: технические науки*, (6-3 (99)), 43-47.
48. Mannonov, J. (2018). INDIVIDUAL PROPERTIES FOR INDIVIDUAL EDUCATION. *Мировая наука*, (5), 64-66.
49. Mannonov, J. A. (2019). Bo'lajak o'qituvchilarning metodik kompetentligini rivojlantirish kasbiy tayyorgarlik darajalarini oshirish omili sifatida. TDPU ILMIY AXBOROTLARI. *Pedagogika*, *4*, 21.
50. Джураева, Д. У., & Собиров, М. М. (2022, December). ТЕХНОЛОГИЯ ПОЛУЧЕНИЯ СУСПЕНДИРОВАННЫХ СЛОЖНЫХ УДОБРЕНИЙ С ИНСЕКТИЦИДНОЙ АКТИВНОСТЬЮ. In *Proceedings of International Educators Conference* (Vol. 3, pp. 175-190).

51. Toychiyeva, M. O. (2022). Development of Effective Compositions and Studies of the Properties of Magnesium-Steatite Electro ceramic Composite Materials Based on Local Raw Materials. Telematique, 7799-7806.

52. Qizi, T. M. O. (2023). GIDROELEKTR STANSIYALARNING ISHLASH PRINSPI. Ta'lim fidoyilari, 21, 97-101.

53. Toychiyeva, M. (2023). EDIBON SCADA EESFC QURILMASI ORQALI QUYOSH PANELLARINI VOLT AMPER XARAKTERISTIKASINI OLISH. Solution of social problems in management and economy, 2(1), 89-94.

54. Toychiyeva, M. (2023). КЛАСТЕР ЁНДАШУВИ АСОСИДА ПЕДАГОГИК ТАЪЛИМ СИФАТИНИ БОШҚАРИШ ВА РАҚОБАТБАРДОШЛИГИНИ ТАКОМИЛЛАШТИРИШ. Theoretical aspects in the formation of pedagogical sciences, 2(2), 196-203.