WEB OF SEMANTIC Universial Journal on Innovative Education

Volume 2 Issue 3, Year 2023
ISSN: 2835-3048
https://univerpubl.com/index.php/semantic

The Role of Chemistry in the Development of Industry and Economy

Turgunov Avazkhon Akhmadzhanovich
Senior teacher of Namangan Engineering Construction Institute, 160103, Republic of Uzbekistan, Namangan, I. Karimov st.,12

Article Information

Received: January 20, 2023
Accepted: February 21, 2023
Published: March 22, 2023

Keywords: *chemical industry, modern technology, healthcare, heavy and light engineering, household chemicals, furniture production, food industry.*

ABSTRACT

This article discusses the history of the development of the chemical industry and its importance in the development of industry and economy.

In modern conditions of life it is difficult to overestimate the role of the chemical industry. Medicine and health care, heavy and light engineering, household chemicals, furniture production, the food industry and all the latest science-intensive industries depend to some extent on the production of chemical products.

The chemical industry is a progressive, rapidly developing industry. It plays an important role in the development of the world economy, allowing to expand the raw material base of production and construction, providing them with materials with predetermined properties and thereby saving traditional types of raw materials (metals, wood, etc.)

In the last two decades of the XX century. Southeast Asia has become a region of accelerated development of progressive industries, including chemical and petrochemical industries. The leading countries of this region, purposefully combining the implementation of market reforms with regulatory activities and state support, expanded the import of modern technologies, machinery and other products, formed a favorable investment climate, allowing to attract national capital and foreign direct investment, increased the pace of development of their own scientific research and technical developments, which met the needs of export-oriented industries and industries, including chemical and petrochemical. The PRC, the Republic of Korea and, in recent years, India have achieved major shifts in accelerating economic growth and comprehensive development of promising industries, including the chemical industry.

The modern world chemical industry produces more than 70,000 types of products, and this number is constantly increasing. More than a quarter of the total volume of products produced is consumed by the chemical industry itself as intermediates and raw materials in various processes. The rest is a

raw material for related industries such as pharmaceuticals, food and cosmetics, metallurgy, or is already used as a final product. An example of an end use is automotive fuel, fertilizers and pesticides in agriculture, polymers, household chemicals.

The catalog of chemical products provides reference information on the entire range of substances, reagents and other chemicals produced by chemical industry enterprises. For individual substances, synonyms of the name in Russian and English are given, their chemical properties are described with indication of characteristic reactions, physical characteristics - phase state, solubility in water and organic solvents, melting and boiling points, density and refractive index, acidity, etc. Data are given on the main industrial methods of production and use.

Chemicalization ensures the expansion of the raw material base of the industry, saving natural resources, improving the quality and range of materials and products, reducing the cost of their production,application of efficient production methods. For example, in the future, the role of chemicalization in expanding the fuel and energy base will increase due to the widespread introduction of various methods of coal processing, the use of such products as methanol and carbon as motor fuel, etc. Chemical technology methods are used in the metallurgical industry (oxygen blast, metal enrichment, etc.). In mechanical engineering, plastics are widely used as structural, insulating, decorative, and other materials, etc. Constructions made of plastics, synthetic rubber, etc. are widely used in construction.

The improvement of chemical technology, which makes it possible to create substances with predetermined properties, causes the accelerated development of the production of modern structural plastics and other polymeric materials.

The chemical industry, along with microelectronics and nano-developments, does not stand still and is constantly being improved. To date, more than 90 sub-sectors and directions for the use of chemical products have been opened.

In world practice, it is customary to distinguish 3 main groups of chemical production:

- ✓ basic chemicals: production of various polymers, mineral fertilizers, rubber, resins and synthetic materials;
- ✓ processing chemistry: paints and varnishes, pharmaceuticals, photochemicals, rubber, various chemicals;
- ✓ semi-products: a wide range of products of organic and inorganic chemistry.
- ✓ At the same time, not every production, even including elements of chemistry, can be classified as chemical. The economic activity of a chemical enterprise, as a rule:
- ✓ cost-intensive and energy-intensive;
- ✓ capital-intensive and resource-intensive;
- ✓ has a small staff of highly qualified employees;
- ✓ has a stable strong impact on ecosystems and the biological environment as a whole;
- ✓ focused on mass production;
- ✓ has established and extended logistics routes;
- ✓ interacts with almost all areas
- ✓ industry and consumption.

The synthesis of hydrocarbons and the production of polymers account for one third of the world's production of chemicals. This also includes petrochemistry, which receives the basis of raw materials from related industries - oil and gas production. Consumption of basic raw materials does not exceed 4-6%.

The resulting plastics and synthetic resins are subsequently sent to the production of chemical fibers, various parts and structures of the furniture industry, mechanical engineering, fine instrumentation, equipment for construction needs, or they are sent to the next technological stage of chemical production.

All substances are conditionally divided into thermoplastic and thermosetting, with the former actively conquering the market, while the latter are practically out of use.

It is difficult to overestimate the role of the chemical industry in mechanical engineering, including transport. Every year, about a billion car tires and tires are produced in the world.

Chemical rubbers have greater frost resistance, heat capacity, low flammability compared to natural rubbers.

Phosphate, nitrogen and potash fertilizers are actively used in agriculture around the world, which increase yields and certain physicochemical and visual characteristics of products.

Chemical fertilizers are still the object of heated scientific debate, but it is obvious that it is impossible to completely do without them in the current climatic and demographic conditions.

The danger of the emergence of new diseases has strengthened the role of the chemical industry in pharmaceuticals and medicine as such. Bacteria and viruses over the long years of evolution have learned to quickly adapt in an aggressive environment, not to mention congenital pathologies. The lives of millions of people in developed and especially in developing countries depend on the success of the development of the latest chemicals and technologies.

The production of paints and varnishes is in demand in many industries, primarily construction and mechanical engineering. The latest developments in this direction are environmentally friendly paints that are safe during finishing and construction work and in the further operation of buildings and structures.

Summing up, the chemical industry influences the development of the scientific and technological revolution through the chemicalization of the economy along with mechanical engineering and the electric power industry. Chemicalization is the widespread use of chemical technologies and materials in all sectors of the national economy. The cost of chemicalization is determined by a number of characteristics of the chemical industry, which also affects the location of its enterprises.

References

1. Sadriddinovich, B. N., Akhmadjanovich, T. A., & Gulomjonovna, Y. Y. (2022, December). Technology of obtaining magnesium and sulfate ion superphosphate from efk concentration waste. In *International scientific-practical conference on" Modern education: problems and solutions"* (Vol. 1, No. 5).
2. Sadriddinovich, B. N., & Axmadjanovich, T. A. (2021). Role Of Mahalla's Participation In The Development Of Education. *International Journal of Progressive Sciences and Technologies*, *25*(1), 375-378.
3. Рахманов, Ш. В., Тургунов, А. А. (2021). Табиатни муҳофаза қилиш-ҳар бир фуқоронинг бурчидир. *International Journal of Discourse on Innovation, Integration And Education*, *2*(1), 97-98.
4. Valijonovich, R. S., Axmadjanovich, T. A., & Khoshimjon, Y. S. (2021). Causes and Consequences of Floods and Floods in The Safety of Life, Measures to Protect the Population and The Territory. *International Journal of Progressive Sciences and Technologies*,*25*(1),83-86.

5. Valijanovich, R. S., & Ahmadjanovich, T. A. (2021). CURRENT STATUS OF GROWING AND HARVESTING CORN AND CRUSHING COTTON. *Galaxy International Interdisciplinary Research Journal*, *9*(12), 1002-1006.
6. Пулатов, А. С., Тургунов, А. А., & Эргашев, И. И. (2021). ОПТИМИЗАЦИЯ ПИЩЕВОЙ ЦЕННОСТИ МЯСНЫХ КОНСЕРВОВ НА ОСНОВЕ ИСПОЛЬЗОВАНИЯ РАСТИТЕЛЬНЫХ КОМПОНЕНТОВ, ПРОИЗВЕДЕННЫХ В РЕСПУБЛИКЕ УЗБЕКИСТАН. *Вестник Южно-Уральского государственного университета. Серия: Пищевые и биотехнологии*, *9*(2), 93-98.
7. Бахриддинов, Н. С., & Тургунов, А. А. (2022). Экстракцион фосфат кислота олиш даврида фильтрлаш даражасини ошириш. *principal issues of scientific research and modern education*, *1*(8).
8. Soliev, R., Avazxon, T., & Sharifjon, R. (2021). Production Of Heat-Resistant And Frost-Resistant Composite Hermetic Mastics For Filling Cracks In Asphalt Concrete Roads And Defensive Joints Of Roads With Concrete Pavement. *NVEO-NATURAL VOLATILES & ESSENTIAL OILS Journal| NVEO*, 2677-2685.
9. Rakhmanov, S. V., & Turgunov, A. A. (2022). The use of biological resources is a guarantee of economic stability. *asia pacific journal of marketing & management review ISSN: 2319-2836 Impact Factor: 7.603*, *11*(03), 4-8.
10. Рахманов, Ш. В., & Тургунов, А. А. (2022). Кимёвий ифлосланган тупроқларнинг мелиоратив ҳолатини яхшилаш. *ФарПИ илмий-техник журнали.–Фарғона.–2022*, *3*, 237-239.
11. Tuxtamirzaevich, M. A., & Axmadjanovich, T. A. (2023). SUV TOSHQINI SODIR BOLGANDA AHOLINING HARAKATI. *PRINCIPAL ISSUES OF SCIENTIFIC RESEARCH AND MODERN EDUCATION*, *2*(1).
12. Turgunov A A, Yakubzhanova Y G, Yuldoshev Sh K, Mirzaliyev Z S. Maize, maintenance and development of ways to overcome deficiencies in growth from the subsyste//PEDAGOG. – 2022. – №. 4. – С. 953-959
13. Бахриддинов, Н. С., & Тургунов, А. А. (2022, December). КОНЦЕНТРИРОВАНИЯ ЭКСТРАКЦИОННОЙ ФОСФОРНОЙ КИСЛОТЫ ИЗ КЫЗЫЛКУМСКИХ ФОСФОРИТОВ. In *Proceedings of International Conference on Modern Science and Scientific Studies* (Vol. 3, pp. 410-419)
14. Mamadaliev AT, T. A. (2022). Suv toshqini sodir bolganda aholining harakati. *PRINCIPAL ISSUES OF SCIENTIFIC RESEARCH AND MODERN EDUCATION*, *1*(10).
15. Sadriddinovich, B. N., & Akhmadzhanovich, T. A. (2022, December). ADVANTAGE OF SEPARATING THE RESIDUE GENERATED BY THE CONCENTRATION OF THE EXTRACTABLE PHOSPHORIC ACID. In *Proceedings of International Educators Conference* (Vol. 1, No. 3, pp. 461-472).
16. Mamadaliev, A. T., & Turgunov, A. A. (2022). Causes of the occurrence of landslides and measures for its prevention. *Scientific Impulse*, *5*, 100.
17. Бахрєддєнов, Н. С., & Тургунов, А. А. (2022). КОНЦЕНТРИРОВАНИЯ ЭКСТРАКЦИОННОЙ ФОСФОРНОЙ КИСЛОТЫ ИЗ КЫЗЫЛКУМСКИХ

ФОСФОРИТОВ. In *Proceedings of International Conference on Modern Science and Scientific Studies* (Vol. 3, pp. 410-419).

18. Tukhtamirzaevich, M. A., & Akhmadjanovich, T. A. (2022). CAUSES OF THE OCCURRENCE OF LANDSLIDES AND MEASURES FOR ITS PREVENTION. *Scientific Impulse*, *1*(5), 2149-2156.
19. Ahmadjanovich, T. A., Gulomzhanovna, Y. Y., Khoshimjon, Y. S., & Saidulla, M. Z. (2022). MAIZE, MAINTENANCE AND DEVELOPMENT OF WAYS TO OVERCOME DEFICIENCIES IN GROWTH FROM THE SUBSYSTEM. *PEDAGOG*, *1*(4), 939-946.
20. Akhmadzhanovich, T. A. (2022, December). INTERACTIVE LEARNING METHOD. In *Proceedings of International Educators Conference* (Vol. 3, pp. 517-527).
21. Axmadjanovich, M. A. T. T. A. (2022). KO ‘CHKINING YUZAGA KELISH SABABLARI VA UNING OLDINI OLISH CHORA-TADBIRLARI. *PRINCIPAL ISSUES OF SCIENTIFIC RESEARCH AND MODERN EDUCATION*, *1*(10).
22. Valijonovich, R. S., Axmadjanovich, T. A., & Khoshimjon, Y. S. (2021). Causes and Consequences of Floods and Floods in The Safety of Life. *Measures to Protect the*.
23. Akhmadzhanovich, T. A., & Karimov, I. (2022). IMPORTANCE OF CHEMISTRY IN INDUSTRY AND ECONOMY DEVELOPMENT. *Scientific Impulse*, *1*(5), 1073-1082.
24. Бахриддинов, Н. С., & Тургунов, А. А. (2020). Марказий Қизилқум фосфориларидан суперфосфат олиш. ФарПИ илмий-техник журнали. *Фарғона.–2020*, *2*, 228-232.
25. Рахмонов, Ш. В., & Тургунов, А. А. (2022). СЕЛ ВА СУВ ТОШҚИНЛАРИНИНГ КЕЛИБ ЧИҚИШ САБАБЛАРИ, ОҚИБАТЛАРИ ВА ОЛДИНИ ОЛИШ ЧОРА ТАДБИРЛАРИ. *Экономика и социум*, (4-3 (95)), 874-881.
26. Mamadaliyev, A. T., & Umarov, I. (2022). Texnikaning rivojlanish tarixi. *PEDAGOGS jurnali*, *2*(1), 232-235.
27. Mamadaliyev, A. T. (2022). The movement of the population when a flood happens. *Scientific Impulse*, *1*(5).
28. Mamadaliyev, A. T. (2022). Naturally occurring carbonate minerals and their uses. *Scientific Impulse*, *1*(5).
29. Tukhtamirzaevich, M. A., Karimov, I., & Sadriddinovich, B. N. (2022). TEACHING THE SUBJECT OF ENGINEERING GEOLOGY ON THE BASIS OF NEW PEDAGOGICAL TECHNOLOGY. *Scientific Impulse*, *1*(5), 1064-1072.
30. Мамадалиев, А. Т., & Мамаджанов, З. Н. Фавқулодда вазиятлар ва аҳоли муҳофазаси. *Дарслик. Тошкент*.2.
31. Mamadaliyev, A. T., & Bakhriddinov, N. S. (2022). Teaching the subject of engineering geology on the basis of new pedagogical technology. *Scientific Impulse*, *1*(5).
32. Tukhtamirzaevich, M. A. (2023). Landslide occurrence in the territory of our republic and measures to prevent them. *pedagog*, *6*(2), 372-381.
33. Tukhtamirzaevich, M. A. (2023). The flood phenomenon observed in the territories of our republic and the fight against this phenomenon. *pedagog*, *6*(2), 333-342.

34. Tukhtamirzaevich, M. A. (2022). THE MOVEMENT OF THE POPULATION WHEN A FLOOD HAPPENS. *Scientific Impulse*, *1*(5), 1859-1866.

35. Tukhtamirzaevich, M. A. (2022, December). DIMENSIONS AND JUSTIFICATION OF OPERATING MODES FOR PANING DEVICE OF HAIRED COTTON SEEDS WITH MACRO AND MICRO FERTILIZERS. In *International scientific-practical conference on" Modern education: problems and solutions"* (Vol. 1, No. 5).

36. Tukhtamirzaevich, M. A. (2022, December). RESULTS OF LABORATORY-FIELD TESTING OF HAIRY SEEDS COATED WITH MINERAL FERTILIZERS. In *Proceedings of International Educators Conference* (Vol. 1, No. 3, pp. 528-536).

37. РУз, П. IAP 03493. Способ покрытия поверхности семян сельскохозяйственных культур защитно-питательной оболочкой и устройства для его осущетсвления/К. Гафуров, А. Хожиев, АТ Росабоев, АТ Мамадалиев. *БИ–2007*, *11*.

38. Мамадалиев, А. Т. (2022, December). ИНЖЕНЕРЛИК ГЕОЛОГИЯСИ ФАНИ МАВЗУСИНИ ЯНГИ ПЕДАГОГИК ТЕХНОЛОГИЯ АСОСИДА ЎҚИТИШ. In *Proceedings of International Educators Conference* (Vol. 1, No. 3, pp. 494-504).

39. Tukhtamirzaevich, M. A. (2022). NATURALLY OCCURRING CARBONATE MINERALS AND THEIR USES. *Scientific Impulse*, *1*(5), 1851-1858.

40. Мамадалиев, А. Т. (2022). Карбонатли минераллар ва уларнинг халқ хўжалигидаги аҳамияти. *PRINCIPAL ISSUES OF SCIENTIFIC RESEARCH AND MODERN EDUCATION*, *1*(10).

41. Tuxtamirzayevich, M. A. (2020). Study of pubescent seeds moving in a stream of water and mineral fertilizers. *International Journal on Integrated Education*, *3*(12), 489

42. Мамадалиев, А. Т. (2023, January). Ўзбекистон республикаси худудларларида сел келиши ва унда аҳолининг ҳаракати. In *Proceedings of International Conference on Scientific Research in Natural and Social Sciences* (Vol. 2, No. 1, pp. 211-220).

43. Tukhtamirzaevich, M. A. (2022). FLOODING IN THE TERRITORY OF THE REPUBLIC OF UZBEKISTAN AND THE MOVEMENT OF THE POPULATION THEREIN. *Scientific Impulse*, *1*(5), 2285-2291.

44. Tuxtamirzaevich, M. A. (2021). Presowing Treatment of Pubescent Cotton Seeds with a Protective and Nutritious Shell, Consisting of Mineral Fertilizers in an Aqueous Solution and a Composition of Microelements. *Design Engineering*, 7046-7052.

45. Мамадалиев, А. Т. (2021). Теоретическое обоснование параметров чашеобразного дражирующего барабана. *Universum: технические науки*, (6-1 (87)), 75-78.

46. Гафуров, К., Росабоев, А., & Мамадалиев, А. (2007). Дражирование опущенных семян хлопчатника с минеральным удобрением. *ФарПИ илмий-техник журнали.–Фарғона*, (3), 55-59

47. Mamadaliev, A. (2019). THEORETICAL SUBSTANTIATION OF PARAMETERS OF THE CUP-SHAPED COATING DRUMS. *Scienceweb academic papers collection*.

48. Росабаев, А. Т., & Мамадалиев, А. Т. (2013). старший преподаватель кафедры экологии и охраны труда Наманганского инженерно-педагогического института, г. Наманган, Республика Узбекистан. *Редакционная коллегия*, 174.

49. Гафуров, К., Шамшидинов, И. Т., Арисланов, А., & Мамадалиев, А. Т. (1998). Способ получения экстракционной фосфорной кислоты. *SU Patent*, *5213*.

50. Tukhtamirzaevich, M. A. (2023). Interactive educational methods in teaching the subject of physicochemical properties of minerals. *Scientific Impulse*, *1*(6), 1718-1725.

51. Шамшидинов, И., Мамаджанов, З., Мамадалиев, А., & Ахунов, Д. (2014). Ангрен каолинларига термик ишлов бериш жараёнини саноат шароитида ўзлаштириш. *ФарПИ илмий-техник журнали.–Фарғона*, *4*, 78-80.

52. Mukhtoraliyeva, M. A., Mamadaliyev, A. T., Umarov, I. I., & Sharopov, B. X. Development of technology on the basis of scientific achievements.«. *Матрица научного познания*, *28*, 4-12.

53. Мамадалиев, А. Т., & Мухторалиева, М. А. БХ Шарапов Принципы обучения специальностям в области строительства. *Научный электронный журнал «матрица научного познания*.

54. Мамадалиев, А. Т., & Мухитдинов, М. Б. Доцент Наманганский инженерно-строительный института Республика Узбекистан, г. Наманган. *НАУЧНЫЙ ЭЛЕКТРОННЫЙ ЖУРНАЛ «МАТРИЦА НАУЧНОГО ПОЗНАНИЯ*, *27*.