Intent Research Scientific Journal-(IRSJ)
ISSN (E): 2980-4612
Volume 2, Issue 6, June -2023
Website: intentresearch.org/index.php/irsj/index

AIR POLLUTION IN UZBEKISTAN AND TECHNOLOGICAL MEASURES USED IN ITS PREVENTION

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Abstract:
Atmospheric pollution means changes in its composition and properties that have a negative impact on human health, animals, plants and ecosystems. The atmosphere is polluted by natural and artificial means. Volcanic eruptions, dust, forest, steppe, plant dust, microorganisms, cosmic dust, etc. are natural sources of pollution. Energy is a source of artificial pollution. Industrial enterprises, transport, household waste, etc. Currently, 75% of atmospheric pollution comes from natural sources and 25% from anthropogenic sources.

Keywords: Atmosphere, natural pollution, artificial pollution, pollutants, global pollution, technological measures.

Annotatsiya:
Atmosferaning ifloslanishi deganda uning tarkibi va xossalarining inson salomatligi, hayvonlar, o‘simliklar va ekotizimlarga salbiy ta’sir ko‘rsatadigan o‘zgarishi tushuniladi. Atmosfera tabiiy va sun'iy vositalar bilan ifloslanadi. Vulqon otilishi, chang, o‘rmon, dasht, o‘simlik changlari, mikroorganizmlar, kosmik chang va boshqalar tabiiy ifloslanish manbalari hisoblanadi. Energiya sun'iy ifloslanish manbai hisoblanadi.Sanoat korxonalari, transport, maishiy

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chiqindilar va boshqalar. Hozirgi vaqtda atmosfera ifloslanishining 75% tabiiy manbalardan, 25% esa antropogen manbalardan kelib chiqadi.

Kalit so'zlar: Atmosfera,tabiiy ifloslanish,sun'iy ifloslanish,ifloslantiruvchi moddalar,global ifloslanish,texnologik chora-tadbirlar.

Аннотация:
Под загрязнением атмосферы понимаются изменения ее состава и свойств, оказывающие негативное влияние на здоровье человека, животных, растений и экосистем. Атмосфера загрязняется естественным и искусственным путем. Извержения вулканов, пыль лесная, степная, растительная пыль, микроорганизмы, космическая пыль и т.д. являются естественными источниками загрязнения. Энергетика является источником искусственного загрязнения Промышленные предприятия, транспорт, бытовые отходы и т.д. В настоящее время 75 % загрязнения атмосферы приходится на природные источники и 25 % — на антропогенные.

Ключевые слова: Атмосфера, природное загрязнение, искусственное загрязнение, поллютанты, глобальное загрязнение, технологические мероприятия.

Introduction:
The level of artificial pollution of the atmosphere is increasing. Local, regional and global pollution of the atmosphere is observed. Atmospheric polluting compounds are divided into four groups according to their aggregate state: solid, liquid, gaseous and mixed compounds. Major air pollutants and compounds include aerosols, particulate matter, dust, soot, nitrogen oxides (NOx), carbon monoxide (SO, SO2), sulfur oxides (SOx), chlorofluorocarbons, metal oxides, and others. Tens of thousands of substances and compounds have been released into the atmosphere, their compounds have not been fully studied. The effects of such unknown compounds on living organisms, including human health, have not been properly evaluated. In large cities and industrial regions, chemical, physical, acoustic (noise), thermal, electromagnetic pollution of the atmosphere

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has reached a high level. The most dangerous atmospheric pollution is radioactive pollution. The main sources of radioactive contamination are the testing of nuclear weapons, disasters at nuclear power plants. Radioactive pollution causes cancer and other diseases to increase. Heavy air pollution has a negative impact on human health and all living things. In urban and industrial regions, nervous, cardiovascular, chronic bronchitis, emphysema, shortness of breath, and lung cancer diseases are increasing among the population. An increase in eye diseases and children's diseases was noted. The city air contains carcinogenic substances (benz(a)pyrene, aromatic hydrocarbons) in the waste of industrial enterprises and motor vehicles, and cancer diseases appear as a result of their chronic effects.

Lead compounds in the exhaust gases of motor vehicles are also extremely dangerous for human health. Various poisonous gases in the atmosphere harm plants and animals. Sulfur gas, hydrogen fluoride, ozone, lead, chlorine, etc. have a strong effect on plants. Death of plants, reduction of yield and change of photosynthesis intensity are observed. Severe air pollution causes the death of some pets. The permissible amount of pollutants in atmospheric air that do not directly or indirectly have a harmful effect on the human body is called REM (PDK).In addition, it means that harmful compounds do not harm a person's work performance and mood. Air pollution higher than regular REM leads to a sharp increase in the level of morbidity of the population. The level and impact of air pollution in residential areas are determined by REM indicators. The air pollution index (AII) complex indicator is also used. Depending on the degree of influence of different substances, different REM indicators are determined. For example, the following REM indicators can be distinguished: this is gas-3 mggm3; sulfur dioxide - 0.05 mg m3; chlorine - 0.03 mggm3; phenol - 0.01 mg g m3; formaldehyde - 0.003 mggm3; body-0.05 mggm3 and others. REM indicators may vary in different countries.

Materials and Methods:

In order to limit air pollution, permissible emissions in industry and transport - PDV standards are established. Separate PDV rates are approved for each stationary source. Compliance with this standard ensures that air pollution is at the REM level. Air pollution has various socio-economic consequences.

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Deterioration of people's health, destruction of buildings, historical monuments, death of animals and other events cause great economic damage. Ambient air is self-purifying. But this possibility of the atmosphere is limited in large industrial districts and cities. Elimination of high levels of man-made pollution is a task that must be done by people themselves.

There are various ways to prevent and reduce air pollution. Installation of dust and gas cleaning devices, change of production technology, especially transition to low-emission, zero-emission technology are among the most promising ways to solve this problem. Harmful enterprises will be moved to the outskirts of the city, sanitary protection zones will be established. According to the level of harmful effects, enterprises are divided into five classes. The width of the sanitary protection zone for enterprises of the first category is 1000 m, the second - 500 m, the third - 300 m, the fourth - 100 m, and the fifth - 50 m. It is not possible to place residences, schools, and sports fields in the sanitary protection zone.

The largest contribution to atmospheric air pollution is made by enterprises of the heat and energy complex, which make up 67.1% of the allocated funds. These are enterprises of the National Corporation "Uzbekneftgaz" and the Ministry of Energy. 32.9% of the allocated funds will be contributed by other enterprises. They are metallurgical industry, construction industry, utility industry, chemical industry, food industry, light industry.

The contribution of other sectors is very small. In 1997, 72.5% of natural gas, 11.3% of fuel oil, and 3.7% of coal were used for the production of electricity and thermal energy, and total emissions to the atmosphere amounted to 252.2 per year. Construction of facilities the ecological condition of settlements was not taken into account when choosing a place for it, or objects were built directly near these points. In the places where they are located, it was observed that atmospheric air pollution with nitrogen oxide, sulfur dioxide, and solid particles is high. Oil and gas extraction and processing industries occupy a special place among permanent sources of air pollution, their emissions in 1997 amounted to 298,000 tons. produced, of which 101.0 thousand tons (33%) are hydrocarbons. In this network, 100 million m3 of natural gas is burned without purification per year, which leads to the release of hydrocarbons and sulfur dioxide into the

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atmosphere. The contribution of industrial enterprises in air pollution is given below.[1]

Pollutant sources. The main source of industrial air pollutants is a coal-fired thermal power plant that emits soot, ash, SO2 into the atmosphere, metallurgical enterprises that emit soot, dust, iron oxides and SO2, and in some cases fluorides, gases they emit into the atmosphere in large quantities. Cement plants are a source of dust. Enterprises producing inorganic substances pollute the atmosphere with gases such as SO2, SiF4, HF, NO, NO2. Cellulose production, oil refining enterprises emit foul-smelling gaseous waste into the atmosphere.

In addition, all industrial enterprises have their own energy systems, and the gases released from them also pollute the air.

Air pollution by chemical industry enterprises can be divided into several groups:

1. Incomplete yield of the product or specific characteristics of the reaction that do not allow using 100% raw ash (for example, production of N2SO4 by the contact method) or as a result of the loss of the final product (dust from the cement or coal industry, NN3 oxidation incomplete washout of NOx in the production of NNO3 with)

2. Throwing waste and impurities in raw ash into the atmosphere. For example, fluorine is obtained from natural phosphate, ore and ceramic raw materials in the form of NF and SiF4, sulfur from natural gas, crude oil and coal, and SO2 and N2S, potassium compounds from sulphide ore. Production of cement, arsenic, selenium and sulfur colchedone in the production of N2SO4.[2]

3. A number of substances used in production processes, for example, volatile organic solvents, SS2 and N2S in the preparation of artificial silk and viscose, NOx, F compounds in the extraction of N2SO4 in chamber and tower methods.

4. Oxidation processes, release of odorous or oxidation products into the environment as a result of heating or drying, release of mercaptan and N2S during boiling in sodium cellulose preparation.

First of all, it is necessary to dwell on the general essence of the activities carried out for the purpose of cleaning and disposal of industrial waste containing toxic gases. It is designed to remove waste gases from the place of their generation or from the factory area to such a height that the toxic substances contained in them are diffused under the influence of metrological factors (low air currents,

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temperature inversion), people and material assets until they reach the surface of the earth. poses a danger. Combustion of waste gases. It is absolutely impossible to transfer fuel exhaust gases through smoke pipes. They must pass through open pipes and be burned on fire. The end of such pipes should be 4-10 meters above the ground and 120 meters away from any combustible materials.[3]

Results and Discussions:

It is necessary to ensure that the fire burns with minimal noise and light. Soot formation can be prevented by injecting air or water vapor into the pipe.

Complete combustion with thermal or catalytic oxidation. If the insufficiently high concentration of flammable toxic substances in the exhaust gases does not allow them to burn completely in the flame, they can be destroyed at 600-8000C, and in the presence of a catalyst at 200-5000C. Rare metals in ceramic materials, as well as oxides of non-rare metals, can be used as catalysts. When choosing a catalyst, it should be taken into account that they may contain toxic substances.

Adsorption methods. If, as a result of the regeneration of the adsorbent, it is possible to obtain an adsorbent substance in a suitable form for use, it is appropriate to use these methods. For example, the use of these methods in the recovery of SS2 in the production process of viscose silk and staples, and in the regeneration of solvents used in various industries has given positive results. In most cases, activated carbon is used as an adsorbent.

Technological measures:[4]

Technological measures are of great importance in the protection of atmospheric air. According to the results of the inspection, it will be possible to reduce or completely stop the amount of waste discharged into the facilities and atmospheric air. For this, it is necessary to improve technological processes in industrial enterprises. The output will be available. Such a process is a closed process in which there is no waste at all or a product other than the waste is produced. The use of scientific and technical achievements in waste-free production is of great importance in keeping the air of residential areas clean. The United Nations adopted a special resolution on the establishment of low-waste and zero-waste industries. Another important issue is the replacement of toxic substances with less toxic ones. For example, if boilers heated by burning

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coal or fuel oil are heated with gas, harmful substances released into the atmosphere are reduced by 70-90%. Elimination of harmful substances in raw materials is also technologically important. Technological processes should not be stopped even for a minute. Although it is impossible to completely eliminate air pollution, it can be reduced and prevented, which requires the vigilance of engineers and technicians.

Design-based activities involve a number of complex issues:[6]Division of the city territory into zones;

Natural dust control;

Organization of sanitary-protective borders;

improvement of housing construction projects;

Improvement of residence;

Project measures are mainly aimed at preventing the release of waste into the atmosphere. Industrial enterprises should be properly located in the city, built according to the city's master plan and sanitary standards. importance is given to the appearance of fog.

Sanitary-hygienic measures consist of cleaning harmful waste from industrial enterprises and motor vehicles and improving these methods. Treatment plants built in this way reduce or completely eliminate harmful factors released from these industries.[5]

Conclusion:

Devices that perform absorption and adsorption processes are used to clean the air from the waste of industrial enterprises. These are scrubbers, foam generators, bubblers and other devices. Air purification works will reduce the amount of pollution in the atmosphere by several million tons. This, in turn, plays a positive role in protecting public health. In order to ensure the purity of atmospheric air, daily sanitary control was introduced. The following measures are being implemented in industrial enterprises in order to carry out daily sanitary control and prevent atmospheric air pollution. When using equipment that meets hygienic requirements, tightly closing pipes in technological processes and preventing the release of toxic gases through them. As raw materials and reagents moderate use of chemicals used. It is necessary to automate the packaging of products and other processes produced in enterprises.

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It is necessary to transfer technological processes to a closed system and avoid waste as much as possible. The most important thing is to ensure the efficient operation of treatment facilities.

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