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Protection of Atmospheric Air and its Role in Nature

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Abstract: *The article discusses the protection of atmospheric air and its functions in nature. Suggestions and recommendations on changes in the atmosphere, atmospheric dust, urbanization and industrial production are given.*

Key words: *Atmosphere, atmospheric dust, industrial production. Atmosphere, atmospheric dust, industrial production.*

Introduction

The atmosphere is an air shell because it protects living organisms from various ultraviolet rays and the harmful effects of meteorites falling from space. Mankind has long used solar energy for its own needs. In recent years, solar energy is well used in the United States, Japan, Israel and France

A number of research institutes in Turkmenistan, Uzbekistan, Georgia, Armenia, Moldova and Ukraine are finding ways to use cheap solar energy in the national economy. Mankind has long used wind energy, one of its inexhaustible resources. Strong wind power plants with different capacities have been built in the United States, the United Kingdom, France, Germany, and Denmark.

Uzbekistan is rich in wind energy, but in the country, this cheap type of energy is rarely used. It is difficult to imagine life on Earth without air, so the problem of surface air has become very relevant today. Because atmospheric air is always mixed, its chemical composition is basically the same all over the planet. Atmospheric nitrogen is formed mainly as a result of the activity of microorganisms on Earth and does not play a significant role in biological processes. Nitrogen accumulated in terrestrial rocks is 50 times more than in the atmosphere. Oxygen, which occurs freely in the atmosphere, is a product of green plants and is an integral part of living organisms and a source of life.

Materials and Methods

Human life requires a lot of energy: to get a lot of energy, you need oxygen. A person breathes an average of 9 kg of air per day. The average human lifespan (75 years) is 700,000 cubic meters of air. Atmospheric dust is an integral part of the air shell. Very fine particles are caused by organic and inorganic processes, erosion of the soil layer, volcanic events, forest, steppe and peat fires, evaporation of sea water. There is a large amount of cosmic dust in the atmosphere, which is 2-5 million tons per year. tons of space dust.

Various dust nuclei in the atmosphere are of great importance in changing the Earth's landscape crust. This is because gaseous water vapor collects around the nucleus, forming water droplets. Dust has the ability to absorb solar radiation and protect the earth's surface from radiation. Dust in the atmosphere occurs in varying amounts depending on the relief, structure and height of the earth's surface.

For example, 1 cubic cm above the city. If there are 100,000 dust particles in the air, 1 cubic cm above the ocean. volume of air will contain 100 dust particles. Human economic activity is changing the composition of the atmosphere: carbon dioxide, carbon monoxide, various toxic gases, radioactive substances and dust particles, which are added to the lower part of the atmosphere, have a great impact on the composition of the air. Atmospheric pollution not only affects the Earth's air and crust, but also endangers human life and the environment. Various gases, water vapor, solid and liquid particles, radioactive dust in the atmospheric air degrade air quality, causing various negative effects on the natural environment.

Whereas in the past the air was polluted only on industrial facilities, now the waste from industry, transport, energy and others is causing air pollution in large areas, thousands of kilometers away. According to the United Nations, between the ages of humanity and the present, 90-110 billion people have died. tons of different fuels were burned, half of which will be for the next 25 years. Coal alone produces about \$ 5 billion a year. tons are burned. Of course, you need oxygen to burn fuel. Currently, 20-25 billion tons of oxygen are used annually to burn fuels. 100 million tons of metal per year for oxidation. tons of oxygen. According to UNESCO, there are about 300 million people working in different countries. 1 billion cars a year consumes the oxygen a person consumes. The problem of oxygen in the atmosphere is also relevant, and its amount is declining from year to year. Therefore, it is of great practical importance to identify the causes of air pollution and prevent it.

As a result of incomplete combustion of fuel in industrial facilities and thermal power plants, various amounts of toxic gases are released into the air, some of which fall to the surface, while others can be stored for a long time in the atmospheric layers. Oil-fired thermal power plants do not emit ash into the air. But it emits three times more sulfur dioxide than a coal-fired station. In addition to emitting various toxic substances and gases into the air, industries absorb large amounts of oxygen from the atmosphere.

For example, it takes 150 cubic meters to extract one ton of pig iron from ore, 35-70 cubic meters to produce one ton of steel, 500 cubic meters to produce one ton of ammonia, and 3600 cubic meters to produce one ton of acetylene. Dust, dry matter, lakes, etc. are harmful to human health. As a result of incomplete combustion of fuel, low quality and poor performance of smoke trapping equipment, various compounds in the air gradually fall to the surface.

In 1952, a week-long dirty fog in London killed 4,000 people, and then (within 3 months) several thousand more. In December 1962, 750 people from the organization died in the city. Cement plants also pollute the atmosphere a lot. Cement dust can spread to far-flung places. Millions of tons of valuable building materials are now being saved by installing equipment that traps dust particles in factories. In recent times, the remnants of the chemical industry have been polluting the atmosphere a lot. Toxic gases and compounds from the chemical industry are mixing with the air, increasing the amount of toxic gases.

As a result, fauna and flora in areas close to chemical plants and factories are damaged and some plants are completely destroyed. As a result, the natural landscape in such lands loses its original character and takes on a special character. The high content of carbon dioxide, carbon monoxide, nitrogen, chlorine, phosphorus, phenol, fluorine and others in the air affects human health. As a result, many people suffer from diseases such as asthma and cancer. In 1950, biochemist Ayri Geigan-Smith discovered that various nitrogenous compounds of ozone in the atmosphere were extremely dangerous. Ozone reacts very quickly, destroying chlorophyll species in plant leaves, absorbing rubber and cotton fabrics.

Nitrogen compounds, on the other hand, cause eye diseases and emit odors when inhaled. Chemical compounds and structures are also destroying historical and architectural monuments. Rare monuments and statues on the streets of Venice, St. Petersburg, Cologne, Milan, London and other similar ancient cities are crumbling or corroding. Types of transport emit various compounds in addition to carbon dioxide, which is harmful to human health. Small particles emitted from motor vehicles, including rubber particles from car tires, are generally life-threatening to breathe (a single car tire emits 10 kg of dusty rubber particles per year into the air). The effects of radioactive substances on the pollution of the atmosphere and the natural environment are very dangerous. The artificial spread of radioactive substances on the earth's surface began mainly after World War II. Many atomic, hydrogen, and neutron bombs of various powers have been tested in the atmosphere, underwater, and on land. As a result, radioactive substances were released into the atmosphere.

The detonation of a single atomic bomb produces more than 200 different radioactive substances, some of which form radioactive chains and pass from one element to another. Large particles of radioactive material released into the atmosphere as a result of an explosion can fall back into the ground in a matter of hours in the form of dry dust or added to precipitation.

Due to human activities, atmospheric air contains more gas, dust, dry matter, and solid particles than cities and villages. The total area of cities in the world is 0.5 million sq. km. is 0.3% of the Earth's surface. 49% of the world's population lives in cities with more than 100,000 inhabitants.

The city's population is 74 percent of the total population in North America, 71 percent in Europe, and 86 percent in the United Kingdom. The Republic of Uzbekistan occupies 1/3 of Central Asia (excluding Kazakhstan), 60% of the total population and 62% of the urban population. The majority of the population of the Republic of Uzbekistan lives in rural areas, where the urban population is 36%. There are many large cities in the world with dense population, developed industry and transport. Dust in the air of urban, rural and water basins occurs in varying amounts depending on the relief feature, structure, height, and even its geographical location.

Results and Discussions

Over the next 100 years, the air of the world's largest cities will be monitored at meteorological stations, teleminators, on the roofs of high-rise buildings on the basis of daily observations and special photographic information from satellites.

Due to the humidity of the climate over the city of London, where there is a humid maritime climate, anthropogenic dust and gases in the atmosphere react chemically, become highly toxic, and a yellowish bitter mist (smog) is formed.

In large cities of the Republic of Uzbekistan, clean air is constantly monitored. Despite the efforts of Beijing's city air pollution control inspections, some enterprises continue to emit dust, dry matter and toxic gases into the atmosphere due to the lack of treatment facilities. It should be noted that 67% of air pollutants come from power sources, but the remaining highly toxic compounds belong to more than 2,000 stationary enterprises (Almalyk Mining and Metallurgical Combine, Mubarek Gas Processing Plant, enterprises in Almalyk and Fergana, Andijan, Chirchik, Navoi, Quqon, Mubarek). Sulfur oxide, which rises into the air, is converted to sulfuric acid by various processes and falls to the surface with precipitation. Such a process can be observed in the biosphere reserve, located 50 km from Almalyk. Currently, there are no waste disposal lines in Uzbekistan. One of the urgent tasks today is to build high-speed decontamination lines, collect waste and rubbish, and create technologies for their decontamination.

The location of industrial facilities depending on geographical conditions is important in keeping the air clean. At the same time, industrial facilities and large utilities should be located outside the housing

estates in a separate industrial zone. It should also be observed that the direction of the wind blows from the residential area to the industrial area. Cars play a special role in air pollution in Uzbekistan, accounting for 60% of the total emissions into the atmosphere. In large cities such as Tashkent, Andijan, Bukhara, Gulistan, Samarkand, this figure will rise to 80%.

Improving the quality of motor fuels while keeping city air clean, in particular the transition to the use of condensed gases, which emit less gas into the atmosphere, gives good results. Due to the complete combustion of the gas, less toxic substances are released into the atmosphere, and this process is much cheaper to carry out. For example, some cars in Tashkent have been running on solid propane-butane fuel since 1978 instead of gasoline.

Condensed gas emits very little toxic substances into the atmosphere, in addition to being 2-3 times cheaper than gasoline. In 2000, more than 15,000 cars in the country switched to condensed natural gas, reducing emissions by 10,000 tons. In keeping the air of cities clean, it is better not to put transit (intercity) vehicles on city streets, to pass them through the ring road around the city. Electrified transport (underground and surface) plays an important role in keeping the atmosphere clean in cities.

Electrified transport protects the population from polluting gases and noise. Currently, in order to keep the air clean in large cities, alternative fuels are being sought, given the shortage of oil and gasoline.

The future of electric cars in this area is bright. Electric cars run on rechargeable batteries. However, because it was weaker than ordinary cars and the rechargeable batteries were weaker than a gasoline engine, it could not quickly find its place in life. However, in recent years in some countries electric cars are widely used in the national economy

In the United Kingdom, for example, 45,000 electric cars carry passengers, and more than 100,000 electric cars operate in factories, mines, hospitals and parks (their speed does not exceed 32 km per hour). Regular monitoring of air quality in cities and industrial centers is of great importance in keeping urban air clean. For this reason, the weather in most cities is monitored regularly. There are several points that monitor and measure the air condition of large cities 3-4 times a day. The data obtained from the weather monitoring points in the city are summarized and submitted to the city administration.

Currently, air pollution in 26 cities of Uzbekistan is observed at 65 stationary (permanent) posts.

The Hydrometeorology Department is in charge of monitoring air pollution in Uzbekistan. It includes: Environmental Pollution Monitoring Center of the Republic of Uzbekistan, two monitoring complexes in Fergana and Navoi, 7 air pollution monitoring laboratories (Almalyk, Andijan, Samarkand, Chirchik, Angren, Bekabad), 4 air pollution monitoring groups (Bukhara), (Gulistan, Nukus and Namangan), the Sariosiyo interdepartmental laboratory for environmental pollution monitoring and two monitoring stations (Chatkal Reservoir, Abramov Glacier).

Conclusion

Air pollution monitoring is carried out on special programs in Karshi, Termez, Kagan, Dustlik and other regions of our country. It is necessary to expand the area of green plants, which is one of the reliable ways to protect the atmosphere from pollution and improve the air in cities and villages.

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