



ANALYSIS OF THE SOURCE OF DUSTY AIR EMISSIONS INTO THE ATMOSPHERE

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ABSTRACT

in this thesis, data taxa about the origin of dust, the methods of its occurrence, the composition of dust, the differences between natural and artificial dust, the impact of dust on human health, the impact of dust on human health in industrial enterprises and the latest technologies that prevent dust are highlighted.

Dust is a very fine solid particle that can float in air, water, or other medium. Its composition can be diverse, and it is formed naturally or artificially. Dust particles typically range in size from 1 micrometer to 100 micrometg, with conspicuous and inconspicuous species.

Visible dust is particles 10 micrometers (μm) or larger, and is usually visible floating in the air when sunlight is shining. Dust is classified into the following types based on its origin. They are house dust, dust collected from carpets, books, furniture, and clothing; dust particles from soil and sand, dust raised by wind or dry roads; wood or metal dust, dust generated during construction and woodworking; plant dust (pollen) is dust, ash and soot distributed by flowers and trees – dust generated by fire or burning activated charcoal.

Studies have identified several factors that contribute to the formation of artificial dust. We can cite factors such as industrial waste (from factories and plants), construction and demolition work, waste from automobiles and vehicles, agricultural activities (tilling the soil), and indoor dust (gas stoves, carpets, book dust, etc.).

Negative effects of dust on human health (results). Dust can remain in the air for a long time and enter the human body through inhalation. It can cause a variety of diseases, including: allergies and asthma, respiratory diseases, and eye and skin problems. While allergies and asthma can be triggered by pollen, animal dander, and house dust, respiratory diseases can be caused by prolonged exposure to dusty environments, leading to bronchitis, pulmonary fibrosis, and even lung cancer. The disease of eye and skin problems is caused by dust itching, redness and dryness of the eyes.

Now we need to answer the question of how to deal with dust. To do this, the use of air filtration systems (HEPA filters, ventilation), the use of wet cleaning and vacuum cleaners, the use of dust spraying systems in construction and industrial areas, the expansion of green

areas and the planting of trees (helps to trap dust), as well as the imposition of environmental restrictions on dust-forming industrial enterprises, also prevent dust

Studies are proving that dust is spread through natural sources. Dust is formed naturally without human intervention. Examples of these include wind erosion, volcanic eruptions, forest and grassland fires, and plant and biological dust. Through wind erosion, dry soil and sand are lifted into the air by the wind, creating dust storms (such as the dust storms that come from the Sahara Desert). Volcanic eruptions can spread volcanic ash and dust over large areas, worsening air quality. Smoke and dust from forest and grassland fires rise into the atmosphere. Plants and biological dust: Trees and plants release pollen (flower pollen), which can cause allergies.

Dusts resulting from human activities include industrial waste, automobiles and vehicles, agricultural activities, construction work, mining and quarrying. In the process of industrial enterprises, metallurgy, chemical plants and cement production, dust is released into the air in large quantities. In this process, preventing dust air from escaping into the atmosphere remains one of the cinnamon treatments.

Natural and technological methods are usually used to combat dust. Technological methods are used to prevent existing dust in industrial enterprises. Modern technologies are used to combat dust. These methods help prevent and reduce industrial dust. Dust suppression systems are used in industrial areas to reduce dust, and water spraying is used to prevent dust from rising. Ventilation and filtration systems also include industrial filters that trap dust. Proper storage of materials in open areas is to keep sand, cement and other dusty materials indoors. It uses wet cleaning to reduce dust in homes and offices. This involves regularly cleaning floors and furniture with a damp cloth. Vacuum cleaners with HEPA filters are effective at trapping fine dust particles. Air purifiers (air purifiers) also improve air quality by filtering dust.

This can be said as a result of research:

1. The impact of invisible dust on human health is high, and (bacteria, viruses, PM2.5, industrial gases, and chemical aerosols) dust removal from industrial enterprises remains a pressing issue today.

2. Analyses require the use of the latest filtration equipment in industrial enterprises. In this regard, it was concluded that wet cleaning prevents dust from rising into the air.

3. The use of air filtration systems (HEPA filters) allows for the capture of the smallest dust particles.

4. Planting more green plants can reduce dust naturally.

5. Controlling emissions from machinery in industrial plants is important for reducing ultrafine dust.

6. It is necessary to widely use filters, water spraying, green areas, vacuum cleaners, and environmental technologies to reduce dust.

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