

ABSTRACT

Relevance of the topic.

Air pollution contributes to the development of various diseases, including cardiovascular and oncological diseases. Studies show that the population of low- and middle-income countries is particularly affected by air pollution. According to the WHO European Bureau, air pollution is the main cause some of the cases of respiratory diseases among children can also be factors of chronic obstructive diseases of the respiratory organs and cases of bronchial asthma.

The use of systems for remote monitoring of atmospheric indicators is an effective method of identifying sources of changes in the environment. The collected information makes it possible to analyze and forecast trends at the global and local levels, in particular in urbanized areas. This opens up the opportunity to implement measures to combat emission sources, reducing their negative impact on the environment, thus reducing the negative impact on the population.

The purpose and tasks of the research.

The purpose of the work is to develop an automated system for remote monitoring of the environment.

In order to achieve the set goal of the work, it is necessary to solve a number of tasks:

- conduct an analytical review of the available scientific literature in the field of research
- analyze the existing solutions to the problem and analyze their advantages and disadvantages
- develop a hardware monitoring unit
- develop software
- conduct testing of the developed system

The object of research – is the process of monitoring the state of the environment.

The subject of the research – is software and hardware methods and means of creating remote monitoring and data collection systems.

Research methods. To solve the tasks, an analysis of information on existing developments in the field of remote environmental monitoring was carried out. Theoretical material was also studied, a comparative analysis of available remote monitoring methods and tools was carried out.

Scientific novelty of the obtained results. The result of the development is a system of remote monitoring of the environment. The novelty of the developed system lies in the development of a system for collecting monitoring data available for use and integration with existing monitoring systems.

The practical significance of the obtained work results is that the data collected by the system make it possible to carry out an analysis of the state of the environment, and based on the analysis to implement methods of combating pollution in order to reduce the negative impact on the population.

Publications. The work of the conference "AUTOMATED REMOTE ENVIRONMENTAL MONITORING SYSTEM" was published in the collection of proceedings of the XIX All-Ukrainian Scientific and Practical Conference of Students, Postgraduates and Young Scientists "Efficiency and Automation of Engineering Solutions in Instrumentation" using the analyzes and results obtained in the master's qualification work.

Structure of work. The master's thesis consists of an explanatory note and graphic materials. The explanatory note contains an introduction, 4 chapters, conclusions, a list of used sources. Scope of work: explanatory note - 115 sheets of A4 format, 42 illustrations, 28 sources were processed.

Keywords. Microclimate, Arduino UNO, microprocessor system, environmental control, IoT, database, server.