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ENVIRONMENTAL CONTROL OF WATER POLLUTION

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Abstract
Literary analysis of groups of toxic compounds that can cause a violation of the aqueous medium is carried out. Their characteristics and a brief overview are given.
Keywords: toxic substances, reservoir, aquatic environment, pollutant, sewage, environmental monitoring, controlling, phytoplankton

Introduction

Rapid population growth in urban areas leads to increasing amounts of wastes of human origin. A considerable part of them are biogenic organic wastes that enter wastewater. This leads to deterioration of the ecological status of water bodies and the gradual reduction of water quality. Ponds overgrow with lots of macrophytes and are covered with silt. The concentration of phytoplankton in natural waters is growing, level of oxygen in water decreases, which dramatically reduces the level of dissolved oxygen and leads to death of fish and other aquatic organisms. A major problem is the supply of urban population with drinkable water.

The analysis of phytoplankton features

Monitoring the ecological situation and preservation of the biodiversity of aquatic ecosystems occupy an important role in the general system of nature protection and are important components that determine the sustainable development of society. However, the theoretical and practical aspects of the automated control ecological situation of water ecosystems are not developed enough, because integral indicators for assessing their situation, vastly are relative and subjective. Suspended particles of phytoplankton are biological cells and bioindicators of water pollution.

The main parameter of polydisperse mediums are volume concentrations of phytoplankton particles of different species. The quantitative correlation between the volume concentration of these particles are the criterion of assessment of aquatic ecosystems, including indices of biodiversity, ecological balance, integrated bioindicators of human and industrial impact of various pollution and others. Actuality caused by the necessity the development of new methods and tools for monitoring of water bodies based on bioindication by phytoplankton as traditional, such as automated microscopy [1], is characterized by low values of performance and reliability monitoring.

The study aims is to improve performance and reliability monitoring of the ecological state of water bodies based on biological indication of phytoplankton with use multispectral images of suspended particles, which are determined on the basis of volumetric concentration and develop appropriate methods and devices.

Blue-green hydrants who participate in many chemical processes of reservoirs, being in warehouse, contradictory interactions with common hydro-ions. 3 one side they will produce knowledge of another organic substance, on the other hand, widely used random ones Toxic influence on hydrographs, on fish. The massive development of blue-green algae thus becomes "blossom" with water, staining water in a blue-green or brown color. In Ukpain flowering reservoirs is a rather difficult problem due to favorable climatic conditions for mass development of blue-green reservoirs and availability a significant number of fishing water reservoirs, in which this process takes place, completing the losses and complications of conducting the economic district. Okim this, this problem got worse after the cascade was created Dnieper reservoirs, which reduce the number of microbes that have a low molecular weight and have a deep, which contributes to the good water degradation and the massive development of blue-green reservoirs [4].

The apparent concentration of phytoplankton particles associated with comparing their parameters are for each type of particle is within acceptable ranges and are determined by shape, internal structure, spectral and polarization properties. The most common parameters for the study of suspended particles using

electrochemical methods. Conductometric method is based on measuring the electrical resistance of individual particles in a flow cell devices using Coulter cell. This method is not sensitive enough for reliable identification of suspended particles of different types and can not assess their aggregation. Optical methods allow you to define a much larger number of characteristics of suspended particles [2-3].

Living organisms have the ability to regulate the concentrations of substances, which they receive in the process of metabolism, they are able to detoxify xenobiotics, but their ability is quite limited. In addition, xenobiotics can accumulate in living organisms. Bioaccumulation toxic substances underlie distant toxic effects [4].

Conclusion

The method and means of control can efficiently control the concentration of phytoplankton in the photo-bioreactor wastewater treatment plants, and can be used to assess the status of water bodies based on bioindication by phytoplankton and complex human impacts on aquatic ecosystems. With the proposed controls can maintain optimal mode photo-bioreactor wastewater treatment plant that will provide the maximum possible amount of phytoplankton biomass.

Surface waters of the land belong to the surrounding environment the environment that has undergone the most significant changes and transformations as a result of human activity. Anthropogenic factor in the formation of their chemical composition and quality is now proportional to natural geochemical and biological processes. Transformation of catchment areas, unorganized diffuse wastewater from catchment areas, transboundary flows, atmospheric precipitation, industrial and domestic discharges cause massive pollution of water bodies, violating their internal processes of migration, colloquium and transformation of substances, negatively affecting water quality, resulting in diseases of hydrobionts and disruption of functioning, as well in some places and the structure of aquatic ecosystems.

This state of affairs requires urgent response in order to preserve the remaining stocks of water, which remained in more or less good quality and the development of effective methods and techniques for water purification and ensuring the restoration of their quality in the course of natural processes of self-purification, and as well as the sustainable development of aquatic ecosystems by identifying permissible man-made pressures.

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