

INVESTIGATION OF HARD BIODEGRADABLE PHARMACEUTICALS POLLUTANTS TREATMENT OF HOSPITAL WASTEWATERS

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ABSTRACT

According to the results of the research performed in the different modern research laboratories the remnants of drugs and their derivatives are found in surface waters in France, USA, UK, Germany, Denmark and Sweden. These substances also can be found in sewage sludge, river and ocean sediments and in the municipal landfills filtrates. Some species have been found even in drinking water and ice, ground and ocean waters.

Many studies confirmed the data of the annual drug releasing into the environment, which counts several hundred of kilograms.

Thus, the investigations of negative impact of pharmaceutical substances and their derivatives on aquatic organisms have been performed during more than 20 years and showed an extremely negative presence of any drugs in the waters. Now, they are still considering as emerging organic contaminants in the different type of waters.

The main sources of water pollution by pharmaceuticals and their derivatives are wastewater from hospitals, clinics, pharmaceutical industries and domestic sewage as well. However, the main percentage of pharmaceuticals dumped into wastewaters is coming from the hospitals. This is typical for large cities, where is situated a great number of hospitals and health care institutions. In the opinion of one study hospital wastewaters have been found in a 15 times higher potential ecotoxicity than the general urban have.

The negative effect of pharmaceuticals influence into environment can be decrease due to application of different kinds of additional wastewater treatment as Advanced Oxidation Processes (AOPs). The main approaches of hospitals wastewater treatment in Ukraine and Sweden by implementation of AOPs method were considered in this study. The main data of this research will be presented.

KEYWORDS

Hospitals, Swage waters, Pharmaceuticals, Waters, Treatment, Advanced Oxidation Processes