engines. Nevertheless, analysis of instrumental studies at Zurich, Vienna and Budapest airports indicates the inapplicability of using DOAS and FTIR methods to determine the concentration in jet streams since the principle of measuring these spectroscopic systems is aimed at determining only averaged concentrations [6].

The chemiluminescence method for the determination of the concentration of nitrogen oxides was analyzed at the laboratory of the University of Wuppertal (Germany). The system for monitoring nitrogen oxides includes:

– Air circulation pumps in the system to supply sufficient air into the tubes.

– Flow-controlling system consists of the flow meter for every device separately to provide the appropriate gas flow (about 1,5 l/m^3 for every gas analyzer), the flow-controller to adjust the entire gas flow at the system, and flow meter.

– The two gas analyzers ECO physics CCD 770 Al ppt to analyze NO/NOx concentration using the chemiluminescence technique (the reaction of NO with ozone, which emits fluorescence).

$$NO + O_3 \rightarrow NO_2 + O_2 + h\nu \text{ (fluorescence)}, \quad (1)$$

– The gas phase titration by means of Asyco GPT/100 to calibrate the NO and NO_x system.

The combination of systems for detecting NO / NO_2 / NO_x and CO concentrations in the gas flow from an aircraft engine allows determining the emission indices (2) under real operating conditions at the airport:

$$EI(X)=EI(CO_2)*M(X)/M(CO_2)*(Q(X))/(Q(CO_2)), \quad (2)$$

where, M (X) is the molecular weight of the pollutant (X); Q (X) - detected concentration of the pollutant ; EI (CO2) = 3200 g/kg. In terms of transport pollution, in particular the air pollution from the aircraft engines, the emission indices are the fundamental tool applied to make up the inventories and calculate taxes and fares for air pollution. Moreover, the real EI is a representative value to get the real pattern of air pollution contributors at the airport, because the real EI differs from the indices obtained from the engine bench tests. In addition, the relative contribution is important to develop the strategy for the air pollution decrease [7].

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POTENCIALITIES OF REAGENT PURIFICATION OF POLLUTED INDUSTRIAL WASTEWATERS

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Industrial wastewater treatment systems should ensure the effluent safety incoming into the sewer systems as municipal wastewater treatment plants and urban water body ecosystems are at risk of pollution.

Keywords: wastewaters, heavy metal pollution, reagent purification.

Industrial wastewaters are a huge environmental issue. Improperly or completely untreated wastewaters exceeding threshold limit values can cause damage to municipal wastewater treatment systems and receiving water bodies.

Wastewater treatment systems and facilities are utilized for water purification on-site. There are various types and designs of these systems depending on the primary pollutants and a purification rate required.

The study considers the possibility of electroplating wastewater treatment. Electroplating involves a certain number of baths filled with either ordinary tap water or chemical agents as follows:

1. Etching acid solutions i.e. hydrochloric acid solution in a concentration of 200–250 g/l.
2. Degreasing alkaline solutions i.e. sodium hydroxide in a concentration of 30–90 g/l and sodium silicate.

In addition, the wastewater stemming from zinc and passivation baths is contaminated with hazardous substances such as zinc ions and chlorides; and chromium (III) compounds respectively.

To ensure water treatment threshold limit values established by law the following steps of treatment are applied:

1. Coagulation, which involves enlargement of small polluting particles by adding of an iron (III) chloride solution.
2. Alkalization, which increases the alkalinity of the solution and partially precipitates heavy metals by adding calcium hydroxide [1].
3. Sorption, which means contaminant absorption by activated charcoal.
4. Flocculation, which binds particles into flocs for their subsequent sedimentation by adding anionic polyacrylamide [2].

This treatment system provides the effluent safety, as well as the ability to control the purification process by component dosage regulation.

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INTELLIGENT MONITORING

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The article describes an automated system of electrical energy monitoring and accounting, as well as intelligent monitoring.

Keywords: intelligent monitoring, business, new sensors, power consumption, sensors, profit.

A profit is important for every businessman. How to increase it? It can be done by means of the reduction of electricity costs through improved regulation of electricity resources. To regulate the consumption of energy, you need to know the consumption rate at each site. Modern technologies can help us in the accounting and regulation of electric power resources. Electronic Energy Technologies LLC can help us with this issue. The company manufactures electronic electricity sensors that operate wirelessly. Sensors can be installed without damaging the insulation. They also do not require additional power sources. Sensors transmit information to a modem that supports up to 300 of such sensors, and can operate via Wi-Fi, Ethernet, 3G or 4G.

The information from a sensor is sent to a modem every 10 seconds. Further, using the Internet, the information from the modem is sent to the owner's personal account. The data received from each sensor is reflected at the account. The data form complete information about the consumption of the object. Based on this information, energy losses can be detected and corrected. This system also consumes less power than a conventional induction-type meter.

The advantages of this system

Features of new sensors:

01. Installation without insulation breaking;
02. Free maintenance and no batteries required;
04. Data transmission every 10 seconds;