

*Emelyanov V.E.*

#### **Quality of gasolines has to meet all the requirements of automotive and aviation technics**

*Keywords:* gasoline, motor transport, technical regulations, aviation fuel, small aircraft, tetraethyl lead, quality control.

A necessary condition for the normal operation of transport is to match the quality of the fuel requirements of the vehicle. It is impossible to reduce transport emissions through the use of an old technique of high-quality fuels. First you should update the existing fleet of the country.

In order to organize the production of unleaded aviation gasoline is required to develop technical requirements and standards for this fuel.

### **PETROLEUM PRODUCTS: TECHNOLOGY, INNOVATION, MARKET**

*Khavkin V.A., Gulyaeva L.A., Chernisheva E.A.*

#### **Variants of vacuum distillates hydrocracking**

*Keywords:* deep hydrocracking, mild hydrocracking, vacuum gasoil, diesel fuel, jet fuel, gasoline.

The features of deep and mild hydrocracking are described. The high pressure influence on yields of products (gasoline, jet fuel, diesel fuel) is shown. Typical quality of fuel products is presented.

*Ismailov E.A., Abad-zadeh H. I., Kazimova A.N., Ibragimov R. H., Rustamov M.I.*

#### **Is environmentally safe motor petrol**

*Keywords:* additives, petrol, octane additive, diisopropyl ether, residual oil.

Increase the output of high gasoline complying with the modern standards octane (RON) 95–98 without octane additives and oxygen components can not be done in one refinery in the world. One solution to the problem of increasing the production of high-octane gasoline can be the use of octane additives, developed on the basis of aliphatic alcohols, dialkyl ethers, etc.

Currently, isopropyl alcohol is produced in the software «Sintezkauchuk» (Sumgait). In this production as a by-product formed polymer fraction (residual oil), containing 80% isopropyl ether (DIPE). We developed the technology of preparation of high-oxygenated gasoline with involvement of the by-product (waste production of isopropyl alcohol) in their composition. The administration of waste – DIPE octane motor octane pure 95–96 points in the base gasoline composition in an amount of 10–15% by volume, will increase the production of motor gasoline A-92, A-93, A-95 without increasing their costs, to significantly reduce emissions.

*Veliyeva F.M., Alimardanov H.M., Abasov S.I., Zarbaliyev R.R., Rustamov M.I.*

#### **Mathematical process modeling of dehydrogenation of ethyl benzene in styrene in the presence of carbon dioxide**

*Keywords:* dehydrogenation, ethyl benzol, styrene, kinetics, mathematical modeling, hydra- and thermodynamic regularities, thermal effects.

On the basis of kinetic researches of process of dehydrogenation of ethyl benzene in styrene in the presence of dioxide of carbon the kinetic model is constructed. Kinetic parameters are evaluated, their adequacy is checked. In case of creation of a mathematical model of the reactor influence of a row of factors on process of course of response is probed. The hydrodynamic mode of process is selected, thermal effects of each stage are counted. Dependence of an output, selectivity and conversion on change of initial concentration and temperature is shown.

### **EQUIPMENT and DEVICES**

*Sultanov F.M., Hayrudinov I.R., Shoipov H.S., Mukhametyanov I.R.*

#### **Optimization and improvement of the energy efficiency of a tube heater of vacuum distillation of CDU/VDU-6 unit**

*Keywords:* atmospheric residue, fuel oil heater, heater coil, transfer line, vacuum tower.

The analysis of CDU/VDU-6 unit vacuum heater mode has been performed. It was shown that the optimization of the geometrical configuration of the heater coil and fuel oil supply line transfer from the heater to the vacuum tower will reduce the maximum temperature of fuel oil heating at 9°C and increase the selection of distillate fractions in a vacuum unit to 6.5% w.

## **ANALYTIC METHODS FOR OIL and PETROLEUM PRODUCTS**

*Shatalov K.V., Seregin E.P., Likhterova N.M.*

### **Applying foreign jet fuel test methods to quality inspection of jet fuel**

*Keywords:* jet fuel, test methods, thermo-oxidative stability, lubricity.

The article deals with the results of Russian jet fuel tests. These results show the necessity of carrying out special researches for delimiting the allowable valid value of assessing thermo-oxidative stability on a JFTOT tester and lubricity on BOCLE instrument.

*Varlamov A.P., Evlanova N.I., Ilyasov L.V.*

### **Photoionized generator detector of gases and vapours**

*Keywords:* photoionization, contact potential difference, work release of electrons, effective cross-section of photoionization, the concentration of gases and vapours.

Describes a new type of photoionized detection of gases and vapours, which collect ions occurs under the influence of contact potential difference generated between two electrodes made of different metals. Discusses the schemes and use of data detectors, as well as their characteristics.

*Zakharova M.S., Dorogochinskaya V.A., Ananyev S.S.*

### **Definition of elements in lubricants by X-ray fluorescent method with wavelength dispersion**

*Keywords:* hetero-organic compounds, light petroleum products, X-ray fluorescent spectrometry.

One of the most exact and sensitive methods for definition of elements in lubricants is now the method of X-ray fluorescent spectrometry with wavelength dispersion. Its main advantage is the possibility of simultaneous definition of a wide set of elements with minimal time and material costs. X-ray fluorescent spectrometers are used for definition, as ThermoARL Optim'X and Perform'X by the ThermoScientific Company, whose representative in the Russian Federation is the Termo Tekhno LLC.

## **PORTRAITS**

**Chernysh Mikhail Efimovich. Oilman's fate**

**Oil instead of paints. Artist Sabir Copuroğlu's creative work**

## **STUDYING TOGETHER**

**Abridged English-Russian dictionary of Himmotologiya terms and expressions**

The Compiler – Danilov A.M.

## **MATERIALS of the PETROCHEMICAL and REFINERS ASSOCIATION**

**Extracts of the protocol #116 of ANN board meeting of 07.11.2013 / Subject – The activity of institutes in the field of innovative process development in oil processing and petrochemistry**