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ENERGY TECHNOLOGICAL COMBINING OF BULK PETROCHEMICAL ENTERPRISES*

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The petrochemical industry performing the processing of hydrocarbon material and being in the number of fuel and energy resources consumption leaders is characterized by a relatively low efficiency of the supplied energy use.

For the petrochemical energy industry enterprises the efficiency increase main direction one can consider to be the energy saving organization based on the principles of energy–technological integration.

The search for viable solutions on the organization of energy-technological complexes – is an extremely difficult task that requires carrying out a comprehensive analysis of the original system and the one being synthesized. The accepted decisions optimization can be reached only at the implementation of mathematical models formed depending on the set task class. The following tasks can be referred to the number of them:

- the search for superfine production facilities' operating regimes interrelated with energy supply systems;
- the industrial facility's efficient management with due consideration of its infrastructure at superimposition of indignations associated with material and energy imbalances;
- the minimization of specific material and energy consumption for production;
- the efficiency analysis of the synthesized object on a selected criterion in the dynamics of its development, etc.

An instrument for searching and selecting innovative solutions is the fully formed by now integrated methodology of complex industrial systems' analysis and synthesis within the framework of the present and projected technological complexes.

The development of a universal method combining isolated methods is a topical and many-sided task.

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ETHYLENE PRODUCTION ENERGY-TECHNOLOGICAL COMPLEX ORGANIZATION

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An energy saving upcoming trend at petrochemical enterprises is the organization of energy-technological complexes created on the base of secondary energy resources complex utilization systems. The ethylene production – is a large consumer of fuel and energy resources. At that, the considered production is characterized by a considerable output of secondary energy resources. Thus, in ethylene production there are favourable conditions for the energy-technological complex organization.

The first stage in construction of an energy-technological complex is the system's work efficiency estimation by means of a system analysis including the analysis of the considered object's relations structure, the analysis of thermal and thermodynamic effectiveness. The system analysis allows detecting the dependencies between the ethylene production scheme elements, defining the optimal sequence of the scheme computation, re-rating of the elements' efficiency, determining the value of technically usable energy, evaluating the energy saving reserves and revealing the optimum alternative for the energy-technological complex construction.

The suggested energy-technological complex in ethylene production is meant for the production of industrial steam with the pressure of 0,6 MPa, cooled water with the temperature of 7°C and technological streams' heating up, warming and hot water supply load covering. The given complex allows putting into effect the utilization of secondary energy resources being formed in the same production. This is the warmth of pyrolysis furnaces' combustion gases, gas purifiers' recycled and condensed water.

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INNOVATION METHODS TO EXTEND STORAGE LIFE OF COOLED BEEF

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Meat and meat products – is a perfect nutrient medium for various microorganisms' propagation, among which molds, yeast, gram-positive and gram-negative bacteria are most common. In this connection the problem of food staples' and products' maximal preservation is of significant importance. To raise meat products' safety level is possible due to the application of various preservative agents, both of natural and synthetic origin. However, the use of any food additive should be rational, reasonable and require a comprehensive study.

In recent years the research on meat treatment with various preparations for the purpose of storage-life extension has been carried out by the scientists of research centers in our country. The storage life extension and safety of food products is possible with the help of rational and expert application of such food additives as conservatives. The choice of a conservative and the original crude quality (and it depends on the bacterial semination of meat at the stage of its being put into the refrigerator, first of all) are in direct dependence. Not less significant criteria influencing the quality of meat are the pH value, the storage temperature and after slaughtering time.

Depending on the kind of product and its state the method of meat products treatment with conservatives is chosen. The comminuted products are carefully mixed with the conservative. If the products are in the form of pieces, they are subjected to surface treatment (the product is sprinkled with the solution of the conservative or dipped into the solution).

The analysis of the information on the subject testifies that its study was carried out on some directions: the crude safety preservation while treating it with the conservatives, which, in their turn, provide the storage life extension, bacterial semination reduction; the influence of food coatings on quality retaining and cooled meat mass loss reduction; the use of physical methods of effect (ray treatment, heating, modified atmosphere) on the meat for the purpose of negative microflora inhibition.

In spite of the popularization, the research in this direction is limited, and the informative data available do not allow detecting the features of the parameters' and conservation conditions' influence on the quality of meat and its storage life.

The purpose of the present work has been the conservative selection and the cattle meat treatment technology development, which will guarantee the bacterial semination reduction and the beef storage life extension. The solution of the raised problem will allow increasing the cooled meat output and will guarantee its undamaged condition on long storage.

As a part of the study, pieces of slaughter-warm meat weighing 500 g were used. The check sample was not treated; the second sample was treated with the preparation "Desinbac super" of the 0,1% concentration; the third sample was treated with the preparation "Desinbac super" of the 0,3% concentration; the fourth sample was treated with the preparation "Desinbac super" of the 0,5% concentration; the fifth sample was treated with the preparation "Desinbac super" of the 0,75% concentration. The treated samples were hanged on stainless steel hooks and placed into the refrigerator with the camera temperature +4 ^{o}C for 23 days. The selection of intermediate investigation probes was carried out every 5 days. The pH level of the beef before the treatment was 5,8. The microbiological study results at the beef treatment with the preparation "Desinbac super" were got. The results of the investigation are represented in the table.