Problems of development of electrochemical production of Russia and possibility of their decision

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Abstract. The relevance of the study of the current state of electrochemical production is that electrochemistry every year is becoming increasingly important in the domestic industry. The development of electrochemical methods of processing leads to an increase in both the processing capacity and the achievement of new technical effects, significantly increasing the strength, durability and other performance parameters of the parts.

Introduction.
The mechanical engineering around the world admits how the leading branch of production. The level of development of it of branch influences a condition of production capacity of the country, creates conditions for steady functioning of all branches of economy (transport and communication, agro-industrial complex, defensive and construction branches, etc.) and fillings by products of the market of consumer goods.

Depends on the level of development of this branch the most important specific indicators of gross domestic product of the state, labor productivity, level of ecological safety of the industry and, of course, defense capability of the country.

For today's time increase in growth of the competition is observed. The common goal on the present consists in creation of the main part of fixed capital of economy. In the course of investment and construction activity the equipment and machines of different function, devices and units, vehicles, knots turn into the active capital of economy of our state and by that form the production device. Thus, there is a reproduction process in national economy.

– it is possible to call the high level of wear of the fixed business assets one of the most serious problems of the Russian Federation. Average age of production oborudovaniye averages 20 years. More than 40% of oborudovaniye have age of 20 years, and at some enterprises even machines, nearly semicentennial prescription are used. Funds of many organizations of branch demand updating that is impossible without investment of big investments.

The high share of the outdated equipment in production doesn't give the chance of full use of production capacities the enterprises. In order that production of the domestic industry was competitive in the international markets, it is necessary to have the most modern of the equipment.

Electrochemical production gains escalating value in the industry every year. Construction of powerful power plants I have created favorable prospects for further development of electrochemical technology.

The modern electrochemical industry is one of the main consumers of electric energy. In this regard it is necessary to notice that many problems of power and electrochemistry were mutually
connected. Development of chemical and especially electrochemical industry depends on the level of achievements in the field of power. At the same time in progress of power the important place is taken by electrochemical technology.

Main part.
Electrochemical methods develop in the industries by the advancing rates in comparison with chemical in connection with their obvious advantages. In electrochemical processes the equipment in many cases is simpler and more compact in comparison with alternative chemical processes, electrochemical methods of receiving a number of products are characterized by smaller number of production stages and operations, cheaper raw materials and bigger depth of his transformation, simultaneous formation of valuable products. These advantages often cause lower prime cost of the received production [1].

The technology of electrochemical processing has advantages in comparison with traditional methods of processing such as: a method of laser processing, laser cutting, use of milling and engraving machines, use of the multicoordinate high-speed processing centers, machining [2].

For example, uses of regularities of process of division by disk tools with calculated geometrical parameters with adaptive management on several coordinates, creation of new ways of management of the provision of various parts of the tool and calibration of a groove after division of preparation with the minimum allowance gives the chance of increase in accuracy of processing with the minimum losses of material at division. The exception of the subsequent operations on processing of places of division of details allows to accelerate several times processing, to considerably increase the accuracy and quality of details, to cut a consumption of scarce materials [3].

Advantages of electrochemical processing:
- the reached record indicators on roughness of a surface and accuracy of copying allow to exclude traditional finishing operations: fair grinding and polishing;
- lack of hangnails and a defective layer after electrochemical processing on the processed product surface;
- economy of working hours on production of products;
- economy of the electric power on production;
- electrochemical machines don't demand laying of special communications and is connected to the general exhaust system and the sewerage;
- electrochemical machines conform to requirements for noise influence and electromagnetic compatibility;
- electrochemical machines are rather compact (occupy no more than 4 sq.m.), are convenient in installation and transportation;
- practically all conducting materials at correctly developed technological processing and the picked-up electrolyte are exposed to electrochemical shaping;
- at serial production of products the prime cost, time of production of lot of products in two and more times decreases;
- at electrochemical processing, except the electric power, only water is spent [4].

In the conditions of the strained and developing competition, for saving the provision in the market, the enterprises of electrochemical production need to solve a set of different problems. For example, the problems connected with processes of management of quality of production, a conclusion of complex products with new consumer properties on the market, expansions of her range, etc. [5].

But it is only not enough to create a new product with excellent characteristics, it is very difficult to introduce it on the market. Such inventors as Thomas Edison and Nikola Teslo developed the inventions based on electricity use such as bulb or electric motor. But without due financial support and the thought-over marketing strategy of investors about such important, changed the world, innovations at that time nobody could learn [6].

At release of a ready-made product on the open market within the first two years close attention is necessary, continuous monitoring will allow to reveal and in time to correct all inaccuracies. It is
possible to allocate the following factors which are the reasons of a failure of new products in the market:

- insufficient analysis of the market;
- defects of a product;
- lack of effective marketing actions;
- excessively high expenses;
- actions of competitors;
- a lack of support at removal of a product on the market;
- production problems.

Advance on the market of hybrid cars which distribution restrained not only the price, but also insufficient development at the first stage of infrastructure of their service can be an example [7].

Development of electrochemical methods of processing leads both processing productivities, and quality of details to increase. Besides, development of new ways of processing allows to reach new technical effects, for example, considerably to increase durability, wear resistance and to reach other operational parameters of details.

Dimensional electrochemical processing of metals will become a widespread method. It is very favorable to polish in every respect products and to remove roughnesses, especially from details of irregular shape or the tiny size, electrochemical way. In the same way the organic electrosynthesis allowing not only to receive clean products, but also to lower number of steps of reaction will develop more widely and more widely.

It is very important that electrochemical technology in all her versions - one of the cleanest and safe for Wednesday. Besides, electrochemical processes are capable to maintain ecological equilibrium. For example, the oxygen received as a by-product at electrolysis can be used for aeration of water in the rivers and lakes and to improve there biological conditions.

Many dangerous substances can be neutralized electrochemical influence, and to affect selectively, only the most dangerous toxic components, without spending the electric power for oxidation of other components. Thanks to it neutralization becomes especially economic. Purification of waters with electrodialysis, electroosmotic methods of drying of materials and other methods will promote protection of the environment too [8].

The main lack of electrochemical processes – high power consumption therefore power expenses make the main article of prime cost of products. Therefore decrease in energy consumption by improvement of technology and also rational, economic use of the electric power is especially important for electrochemical productions.

Conclusion.
At the moment, in the conditions of the cruel competition to the enterprises the problem of substantial increase of quality of different types of products, updating and expansion of her range according to modern requirements of the developing scientific and technical progress and also the increasing needs of the population lays down.

The high-quality transformations directed to change of technological way and with ensuring satisfaction of necessary requirements of production on the basis of innovative technologies, an optimum image the combining resource-saving and level of profitability modernizes the domestic industry and gives an impetus on active development.

Carrying out modernization of the industry is the urgent and objective need caused by the aspiration of the country to maintain long-term social and economic stability, to increase economic power, to strengthen positions in the international market and to ensure economic security.

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