

Fedotova A.
V. Alekseenko, research supervisor
Peoples' Friendship University of Russia

INNOVATIVE TECHNOLOGY AS A FACTOR OF COMPETITIVENESS

Improving the competitiveness of the goods is one of the most important issues of interest to manufacturers now. As we know, the level of competition in the market increases, it means that manufacturers need to look for new approaches constantly to improve the quality of the products. Nanotechnology is one of the means of improving the competitiveness.

Innovative activity in enterprises increases the competitiveness of companies. The main competitive advantage of nanotechnology is that it is microscopic, its size does not exceed 10 nm. They allow you to make more durable goods, while increasing their consumer properties and reducing labor costs, prices, increasing sales.

We consider the nanotechnology application for industrial goods - paintwork products. The need for them is huge in the domestic market. Moreover, an important property for the consumer is the material strength and durability. Cars, the walls of our apartments, houses - all of this in the modern world and the city requires a coating paints not only for decorative purposes, but also in practice. Personalization of space is becoming more and more popular nowadays.

Molecular nanotechnology is actively used in paintwork material industry, which uses special nanobots (nano-assemblers). After learning the innovative technologies and production with this technologies emerged and physicochemical advantages over other methods. Phishing process (transfer pigments from aqueous to organic status) can reach any modular versatility. Producers can get up to 30 different products on the same equipment in this case. The ability to grind components to the state of the primary crystals is important in this production. Known technologies are providing with many hours dissolution of polymers, while the use of nanotechnologies reduces this procedure to a few minutes. This increase in speed is due to the use of nano-assemblers. All thermochemical operations with intermediates materials are produced without using solvents. Applying nanotechnology can significantly reduce the harm of production and, consequently, improve the safety for humans.

Thus, we can distinguish the following improvements in consumer properties of coatings based on nanotechnology:

- Wood materials covered with this paint are deeply protected from blue mold and rot;

- Singularity of these coatings is in its high requirements of the wood protection from the water, they have an optimum water vapor permeability, so that the wood "breathes", that increases the service life of wood and paint to eight years without a change in appearance;

- Primers and paints for metal have a corrosion resistant characteristics and designed for use in hostile industrial environment;

- There is good adhesion in multilayer coatings;

- Increases the warranty period;

- Gives decorative properties and protection from UV radiation;

- Allow to expand the color gamut of coatings.

The new materials shortened the air drying to just night and got wash-out resistance. Nanotechnology provides limited absorption when applied to porous surfaces (plaster, concrete, bricks, paper, wood) of pigment fillers and polymer components AD (aqueous dispersion) paints.

Manufacturer who uses the technology may get an additional effect. Production with the help molecular technology reduces its power consumption. The energy intensity of production can be reduced by means of innovation from 1 ton of products with 190 kW / hour to 61 kW / h. In this case, the profitability of such production increases to 100%. This provides a compact production, that can be placed on an area of 100 square meters and produce there over 20 kinds of products. Nanomaterials have this cost flow if there is the highest professional performance - ie, low price per 1 square meter. A consumer, in turn, receives drastically new product with improved properties, more secure, with wide color gamut and textures for every taste. Yes, nanotech coatings may take a different price niche, but the quality justifies the price. Because of sales volume is going up we can also see the increase of market share of nanotechnology and materials.

Nanotechnology is not only quantitative but also a qualitative leap in industry. Progress in the nanotechnology production gives unique properties to the material to solve effectively a wide range of contemporary problems related to the protection and decoration of metal, plastic, wooden and mineral building structures. It is modern technologies which are able to popularize paintwork materials on tool quality-price, thus increase the competitiveness of the goods and win a new niche in our fast growing market.