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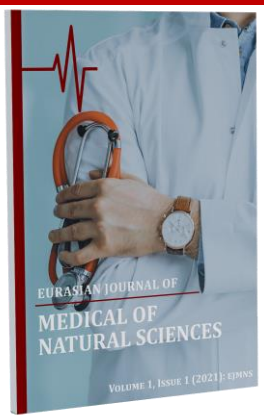

TO STUDY THE PHYSICOCHEMICAL BASIS OF THE PROCESSES OF DYEING AND PRINTING OF MIXED FIBER MATERIALS.

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ABSTRACT

The article focuses on the preparation and physicochemical properties of dyes for dyeing composite fibers, provides a number of comments and examples, and describes its role in a number of studies. In addition, the physicochemical properties of mixed fibers were studied.

At present, it is widely possible to increase the range of mixed fiber fabrics and expand their quantity. The widespread use of mixed fiber fabrics requires the development of special methods of preparing them for decoration.

When preparing composite fiber fabrics for decoration, we must pay attention to the properties of the fiber in the composite fiber fabric. We know that the purpose of preparing textile materials for dyeing and printing is to remove natural impurities from the fiber, excipients (glue, adhesives), to give them sufficient capillary and whiteness.

Japanese experts have concluded that mixed fiber fabrics can be bleached in both alkaline and acidic environments. The essence of this method is that bleaching first takes place in a weakly acidic environment with pH = 5-7, in the presence of polyphosphoric acid. In addition to polyphosphoric acid, a solution of 100% H_2O_2 with a concentration of 10 g/l is also used. Processing time is 10-30 minutes. Then an alkaline agent is added to the bleaching bath until the pH = 9.5-11. T-1000^{0}C, processing time 30 minutes. With such a bleaching method, we can save H_2O_2. Another modern widely used method is the use of high energy sources in the preparation of textile materials for decoration. This method is a one-step method.

High-quality whitening can be achieved as a result of photochemical activation of oxidants or ultrasonic activation of peroxide baths. Peroxide compounds, chlorine-containing bleaches and chlorine can be used as oxidizers. Ultraviolet radiation accelerates the decomposition of bleach. This speeds up the bleaching

process. The whiteness of the fabric reaches 80-82% in 0.1-0.3 minutes.

Under the real conditions of the dyeing process, the main reactions with cellulose and with water occur simultaneously, and some factors accelerate both processes, namely, the binding of the dye to the fiber and its hydrolysis in aqueous solution. Therefore, the following additional requirements are imposed on active paints.

-high reactivity;

-their stability in dry and solution storage;

-strength of covalent bond between dye and fiber;

-high substance content relative to fiber.

When rational dyeing technology is copied and formulated, the correct choice of parameters (temperature, pH, process time, electrolyte concentration, etc.) that ensure maximum absorption of the dye and its minimum loss as a result of hydrolysis is required.

In the process of dyeing mixed fiber fabrics, it is important to prepare a solution of dyes and pay attention to their physicochemical properties.

Dyeing is carried out in an aqueous solution in accordance with a certain modulus (volume). The ratio of the volume of the dye solution to the weight of the dyed fabric is called the modulus. It is found by the following formula: M = V/m, where M is the modulus, mg/g, V is the volume of the dye solution, ml, m is the weight of the fabric, g.

Table 1Modular bath - 50, the amount of dye - 1 g composition of the solution

Name of substances	Quantity, in percentage, relative to the weight of the fabric	The amount of substance in the concentrated solution, g / l, in terms of	The amount of solution to be added, in ml
Acetic acid			
Sodium sulfate			
Water			

Total: 50 ml

By making one of the components of mixed fiber fabric from VVM, it is possible to improve the appearance, softness and softness, hygienic properties of the product. The purpose of the use of blended fibers is to expand the range of products, improve their quality and solve the problem of replacing natural fibers with chemical fibers, that is, the use of chemical fibers instead of deficient natural fibers. This is because the use of blended fibers often not only reduces the consumption of valuable natural fiber raw materials, but also makes them more comfortable and practical to use. Depending on the type of fibers and their ratio in the mixture, the method and conditions of preparation of fabrics (fabrics) based on different fiber mixtures are selected for each individual case. The conditions of preparation should be chosen in such a way as to allow maximum purification of the mixture after chemical treatment from oils and lubricants, contaminants, etc., without damaging the fibers and without compromising their quality.

Typically, no special equipment is used to make composite fiber-based products, but the equipment used for this range of products, and in some cases combined technical processes, is used.

The widespread use of composite fiber fabrics requires the development of special methods of preparing them for decoration.

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