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# **Study of Natural Color Technology (on the example of Fergana Valley craftsmen)**

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**ABSTRACT:** The main point of this article is to give a deeper insight into the fields of color and painting, to improve people's skills in color selection, to have a deeper understanding of working with color, as well as to address the history of colors, to give a broader understanding of their nature, to explain The main task of this article is to develop the ability to know, perceive the state of color and use it purposefully, to firmly define the names of colors in the Uzbek language.

**KEYWORDS:** painter, handicraft, miniature, painting, fresco, swamp, silk, fabric, cotton, royan, tumor, onion peel, mulberry peel, flowerpot.

## **I. INTRODUCTION**

As we observe nature, we are amazed to see that the world around us is made up of different colors. Our ancestors have been studying this mysterious world of nature for centuries. Color is a sensation in a person that creates an external stimulus under the influence of light through the eyes. Its function is important in creating a comfortable and pleasant environment in the environment that surrounds a person. Color is the most powerful tool for human emotion[1].Scientific experience and scientific research show that each nation has its own favorite color scheme and color thinking, depending on the changes in nature and the environment..

## **II. RELATED WORK**

In the last century, questions about color have come to the attention of scientists seeking as an independent science. The great painters and theorists of the past were Chekkino Chennini (1400s), Leon Battista Alberti (1400-1472), Piero della Francesco (1416-1492), Leonardo da Vinci (1452-1519), Giorgio Vazari (1511-1574), Gianpaolo Lomatsoo (1539-1600), Albrecht Dürer (1471-1528), Francisco Pacheco (1564-1654) wrote about his research on painting. Newton (1642-1727) and M. Lomonosov (1711-1765), great scientists, also conducted research on color.[2]It is known that from ancient times the connection of colors with magical qualities and features has been emphasized. Traditional notions about colors have been formed in many cultures.In Central Asia, the doctrine of colors has long been developed in connection with the work of miniatures, paintings, and frescoes on the walls, panels.

## **III. LITERATURE SURVEY**

Because the art of painting required the ability to choose colors and prepare them. Therefore, each student was first required to prepare colors and memorize their names. At the same time, other types of professionals have chosen colors based on their style, ethnicity, customs, and traditions, as well as naming the colors they use to color their products.Special mineral dyes were used in Central Asia. Iron sulphate was used to make black paint. Pomegranate peel was added to make the paint resistant to light.

## **IV. METHODOLOGY**

Natural dyes were used to dye the fabric: the leaves or bark of the birch and the red fruit of the black birch. The color formed from them is unknown[3].In these scientific articles, we scientifically study the work of craftsmen of the Fergana Valley, who worked on the creation of such ancient colors.Craftsmen produce their products taking into account market requirements. For example, Tadjibayev Hakimjon was born in Namangan, Namangan region, and grew up in a family of craftsmen. Its style differs from other styles by its uniqueness to the traditions of Namangan

embroidery. H. Tadjibayev uses ancestral coloring techniques for embroidery, mainly red and swamp colors, poetic and cotton fabrics from yellow. He says this is typical of Namangan traditional embroidery of the last century. The master used the technology of dyeing colored yarns in a natural way and made dyes from natural dyes. This process took a long time. According to the artisan, dye colors can be obtained from all types of plants. Especially the tumor, onion peel, mulberry peel, rose hips and other plants[4]

#### V. EXPERIMENTAL RESULTS

The ancient names of the colors are called “royan”<sup>5</sup> and almost all the colors are named after this plant. H. According to Tadjibayev, by watching the colors in the finished products, not only in Uzbekistan, but all over the world, warm colors attract the attention of young people, while cold colors appeal to people over the age of forty. The master pointed out that the more he liked red, yellow, orange, the more Westerners wanted calm. The colors we used six years ago are no longer working. If we used dark colors before, now we use some calm colors[5]. You can see on picture 1.



Picture 1. Color preparation process of Tadjibayev Hakimjon.

In ancient Margilan, artisans obtained the yellow color by removing the bark of willow, mulberry and spruce trees from the trunk and boiling it in a pot.[6]

It turned out that the famous Chitgar from Margilan Solijon Ota Ahmadaliev got the yellow color using a simple method. It was found that the flowers of the eggplant (Japanese sakura) can be obtained only in July and August of the year, and by boiling, they turn yellow.[7]. You can see on picture 2.



Picture 2. Silk yarns dyed in natural dyes.

## VI. CONCLUSION AND FUTURE WORK

On other artistic paints used in the eleventh century, M. Kashgari's information is interesting. Syringe-pink, copper oxide-green, and cinnabar-red. Undoubtedly, these paints were used in various pictorial works (in murals, pottery, manuscript decoration). Without exception, some of them were used in fabric decorations. As a result of our study, the tones of paints and their naming in Uzbek have not been considered in detail. So when we talk about color, we use the names of things that exist in nature, flowers, plants, and shrubs. For example, velvet color, jiyda color, almond color, fire color, grass color or grass color and so on. But conditional names of this kind often may not allow a clear idea of the tones of the colors. Therefore, in order to get acquainted with the properties of dyes, it is desirable to study them by dividing them into special groups. The symbol that represents the names of colors, that is, the basis on which one of them is called red, one blue, the third purple, and so on, is called a color fold. Color is an important factor not only in observing the environment, but also in human memory. That is why it is important to pay attention to the exact naming of colors, because it can be seen as a source of certain information carriers. In this article, we have tried to study colors from our own territory. Our main goal is to scientifically study the lost color technology and apply it to life or production. Through these colors that we pass on our culture and history to the next generation.

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