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## **CREATION OF DECORATIVE PHOTO ZONE ELEMENTS USING SUBLIMATION PRINT**

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In our time, it is impossible to imagine the activities of any company or enterprise without using various advertising tools and holding PR events. Both of these areas are the process of transmitting information about products, services or the company itself to the target audience. But none of the areas of marketing and advertising can be implemented without creating a corporate identity. The development and use of your own corporate identity is becoming an increasingly popular attribute of any company.

Advertising occupies a large place in the modern world of the latest technology, where there is a promotion of goods and services. The correct choice of means and methods of advertising, well-designed budget of the advertising campaign largely determine the effectiveness of advertising activities.

One of the varieties of promotional souvenir products is textiles or various accessories with advertising elements and company symbols. There are many ways to print on textiles; various materials are used on which they are printed and by which they are printed. This is especially important when advertising various scientific and technical events: exhibitions, presentations, training, conferences. The success of the presentation is directly influenced by the level of design of the presentation venues and the creative professional work of the stand or designers responsible for advertising the event.

To attract the attention of potential buyers, customers or partners in any field (commercial or social), various events are required that can be carried out according to certain scenarios and with mandatory design.

Holding conferences, presentations and other business events often shows the status level of the organizers and is an important tool to maintain their image. One of such image elements is a press stand – press wall and decorative pillow-cubes with symbols of the department of media systems and technologies (fig. 1).

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**Figure 1.**

Typically, photographers and video operators are invited to special events, so a decorated photo zone is not only a beautiful background but also a great opportunity for a company to remind itself by showing off elements of corporate identity such as corporate colors and a logo, possibly some kind of contact or advertising information. Most often, information about the event, the logos of sponsors or participants are posted on press-walls [1].

To give volume to the photo zone, various decorative elements are usually added to the base - banner. Depending on the type of event, these can be balls, flower arrangements, gift boxes, pillows or other props. Decorating the site for the photo is an important and responsible process because when designing the venue you need to

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create a good atmosphere. Thus, all participants will have the right mood and will be able to fully immerse themselves in the event.

The photo zone was supplemented by pillow-cubes with company symbols, during the creation of which the main graphic elements are vector logos and font labels, the main colors of printing were selected for the pillow background – CMYK colors. They complement the photo zone of the event, and they can also be used not only as interior elements that just stand but also as bright elements that you can pick up for an attractive photo and video.

Using CMYK colors and a vector image format, it turned out to show the main advantages of sublimation printing – print sharpness and brightness of transferred colors.

To create pillow cubes, namely printing on fabric, sublimation printing is used. The method of sublimation printing is widely used in the manufacture of textile products with corporate symbols: corporate and advertising ties and scarves, pillows, sports, and promotional clothing, flags, umbrellas, etc.

This type of printing is used to apply images to fabric. Unlike other printing methods, it allows you to apply high-quality photographic images to the fabric. The technology allows you to get bright colors resistant to environmental influences.

Sublimation printing – ink printing, in which the ink passes through sublimation from sublimation paper to the surface to be coated. The method consists in the fact that when printing with ink or ink ribbons, the particles of the coloring matter are instantly heated by the print head and mixed during the transition to the gas state, penetrating deeply into the structure of the printed material. The technology of sublimation printing is widely used in the manufacture of advertising and souvenir products [2].

Sublimation printing requires inkjet printer equipment designed for sublimation ink printing, thermal press, sublimation paper (acting as an intermediate medium) and sublimation ink.

The correct choice of intermediate media provides the highest brightness and saturation of images and also minimizes the amount of scrap and ink consumption. The peculiarity of sublimation paper in its structure is friability and unique chemical treatment, which allows it to leak out with a sufficient amount of ink. So the print quality is mainly determined by the structure of the backing paper since a certain amount of dyes diffuse into the backing paper during contact thermal transfer with the product.

Sublimation inks have an extended color gamut and high optical density, allowing you to print bright, saturated images on most materials. It is not necessary to dry the printed images in a roll. Inks are suitable not only for thermal transfer but also for direct printing. Sublimation inks are odorless and completely environmentally friendly (do not contain heavy metals).

The image transfer process is carried out using a thermal press at a temperature of 180 - 220°C. In this case, the ink, passing into a gaseous state, penetrates into the thickness of the heated polymer. When cooled, the image is inside the polyester layer.

Sublimation is the transition of a substance from a solid-state immediately to a gaseous one, bypassing a liquid one. In the case of applying the sublimation process

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to color the surface of an object, solid dye particles located on the surface of an intermediate medium (usually a paper with a special coating) are sublimated to the molecules of the upper layer of the printed material under the influence of temperature. The strongest intermolecular bonds of the dye molecule form with the molecules of polyesters or polyesters.

An image on an intermediate medium can be formed in one of the following ways: inkjet printing, screen printing, offset printing. It should be noted that the image is applied to the intermediate medium in a mirror image.

In the process of inkjet printing, continuous ink supply systems filled with special sublimation ink are used. Continuous ink systems can be installed on most models of desktop or wide format printing devices. As an intermediate medium, transfer paper is used, supplied both in sheets and in rolls. Unlike conventional types of paper used for inkjet printing, transfer paper is coated with a special layer that does not allow the dye to penetrate the structure of the paper, which determines its good tolerance under the influence of temperature.

A prerequisite for transferring the image to the surface of the printed material is either the polymer structure of the material itself or the presence of a polymer coating on its surface. It should be noted that the print is resistant to environmental influences (in the case of printing on textiles) only if the object of transfer is a synthetic (polyester) canvas. That is, if you transfer the image by the sublimation method onto mixed fabrics and just wash it, the image will fade.

Moreover, the degree of change in color saturation depends on the percentage of cotton in the canvas. Sublimation technology allows you to get excellent quality on such types of fabric: silk, satin, flag net, gabardine, etc.

When printing on metal, ceramics, wood – the surface must be pre-treated with a special coating, for example, acrylic-polyurethane varnish.

The final step in the process of sublimation printing is the actual transfer of the image from the intermediate medium to the printed surface. For this purpose, a thermal press is used, the main tasks of which are to ensure maximum pressure and maintain a constant uniform set temperature over the entire contact surface of the intermediate medium with the printed product. Depending on the type of surface to be sealed and the density of the intermediate medium, the temperature range ranges from 160°C to 220°C.

The duration of exposure is from 40 to 90 seconds. The thermal press can be either with a stationary clamp - one plate is lowered onto another and fixedly fixed, and in the colander version – a system of shafts with a conveyor belt.

In the case of applying the image to specific surfaces, such as cups, plates, baseball caps, etc. Specialized thermal presses are used, the curvature of the surface of the pressing elements of which repeats the curvature of the sealing surface. Sublimation is possible only for products with a percentage of synthetic fibers of more than 50%.

The advantages of this method are the durability of the transferred image and the fact that the applied image is not felt by touch. The essence of sublimation technology is to transfer images at high temperature from sublimation paper to fabric,

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metal or ceramic. In the process of sublimation, the fibers of the product itself are dyed, and not the image is transferred “from above” [3].

Using the technology of sublimation printing, 2 variants of large pillow-cubes and 2 variants of small ones were made, which well complement the photo zone with a press-wall on the conference. It is also convenient to take small pillow-cubes with you to off-site conferences and presentations; they very attract the attention of visitors and participants.

Pillow-cubes were presented at such events as Open Days of Kharkov National University of Radio Electronics., International scientific-technical conference “Print, Multimedia and Web”, International specialized fair “Education in Eastern Ukraine and Education Abroad - 2019”, etc.

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