

Design of Fabric Accessories for Beauty Parlor

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Abstract

Beauty parlor and hairdressing tools are one of the things that fabric designers have paid less attention to it. The design of fabric packages for beauty parlor has been considered in form and color as well as hygienically in this thesis. This thesis has attempted to present and design hairdresser packaging from two perspectives, namely the principle of design as well as the use of antibacterial property, and has provided numerous examples of this fabric. In this thesis, silver and copper nano-particles have been used to complement hairdressing packaging to improve consumer health. On the other hand, color science and design principles were also used to improve the mental health of consumers, and eventually packages with such properties were designed. The offered textile packs contain nano-materials that create antibacterial properties when contacted with hairdressers and on the other hand, we have tried to play an important role in this design by applying the principles and rules of design and using the concept of hairdressing tools and accessories.

Keywords: Fabric Design; Packaging; Antibacterial; Copper; Silver

1. Introduction

Woven fabrics consist of twisting and at least two strands of perpendicular yarn that woven to each other. The yarns that are along the length of the fabric are called warps and the yarns in the width of the fabric are called woofs (Khalil Khairi, 2002). To weave the fabrics, warps divide into two categories, and the distance between the warps is called the strand, and the woofs pass through

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them. The Comber is fastened to the fabric in front of the woofs yarn and puts the woofs in its final position. This means that the woofs is woven close to the previous woofs and the fabric is woven (Younesi and Khalil Khairi, 2002). The variety of textile factories and workshops is directly related to the design of the fabric and as the fabrics are divided into different types such as gauze, knit felt and ... and differ in terms of design, the texture is also different. Different fabric designs vary depending on the type of texture and the type of bonded yarn (Yavari, 2002). The fabric warp and woof can overlap in a variety of ways. The order in which the warp and woof come together are called fabric designs and it is very important in the appearance of the fabric and its consumption properties. There are three main types of textiles in design (Younesi and Khalil Khairi, 2002).

Taffetized texture is one of the oldest, simplest, most durable types of fabric, with woofs threads alternately, one another one, pass under and over the warps thread and the two sides have a similar display (Khalil Khairi). The number of affiliates in the textile industry is known as taffetized texture that is suitable for both heavy and light weight fabrics and there are many uses that can be made using phantasy colored yarns to produce a variety of fabrics. This texture also has derivatives or similarities, and new texture can be accessed by spreading the taffetized texture along the warps and woofs (or both directions) (Yavari, 2002). In examining the weaving technology and it's evolved and progress, it was necessary to examine the types of fibers from which textiles and garments were made. After fibers, the second most important issue is spindle and yarn spinning methods as well as fabric knitting tools. According to historical evidence, sheep wool has been used in the fabric since the beginning of Neolithic period. Sheep wool is the oldest fiber used in knitting in Iran. Tame the sheep may start in the Iranian plateau and dates back to the Neolithic period (Wolf, 1992). In the early Stone Age, sheep were not only used for sacrifice, but they also used for milk and shepherding the sheep because the technique of spinning and weaving had progressed (Pope, 2001). Silk is another type of animal fiber that originally used by the Chinese. In the first millennium BC, the Persians also cultivated silk. The earliest traces of the use of Chinese silk in Central Asia are found in the first half of the millennium BC. Herbal fibers have been of human interest in the past and used to produce textiles. During the Neolithic period, flax fibers were used in the fabric of textiles. In Iran, the flax cultivation site was the foothills of the north and west (Wolf, 1992). Hemp is also one of the fibers of ancient times for the production of textiles of human interest. Hemp was probably used as a food during the new Neolithic period (Pope, 2001).

One of the problems most people have when going to a hairdresser is having a hairdresser bag or pack that can carry it easily and, after every use, there is no need to washing and cleaning the cosmetics thoroughly. The importance of the subject becomes clear when the use of an antimicrobial cloth can also solve the mentioned problem and also be biocompatible. Formerly used to wash hairdressers with substances such as alcohol to remedy this problem, however, inserting these things into a bag or packaging can cause contamination and on the other hand Packages available in the market for hairdressers is more like a handbag which has no special place for the equipment and it often holds things together in a compartment with zipper or the button. In this thesis, we will try to design a set of fabrics for placement of hairdressers. It is designed specifically for each of the tools used, including scissors, combs, foil, clips, and razors and so on. However, the fabrics used in this packaging have antibacterial properties to aid the health of the users. According to the researches, there is no academic and written research in Iran for designing hairdressing supplies and accessories and so fabric design is not scientifically done either. But in the marketplace for accessories, hairdresser accessories are often made of plastic and less environmentally friendly. While their designs are not thoughtful and practical, they are merely a place for multiple tools. Most of the packages in the market are stereotyped and none have

antibacterial properties. One of the textiles that have always been a health concern for families is the textile packs of hairdressers, because it is in contact with body skin when making up and it can cause sensitivity if the materials used are not desirable and lack the standard and hygiene and in the long time lead to skin diseases. This is especially threatening for infants and children with sensitive skin. So keeping it healthy has always been important. Therefore, fabric packs of hairdressing tools that can enhance this issue, have particular importance. Accordingly, the following research questions are asked.

1. How to make a cosmetics pack that does not need to be washed?
2. Why is a Hairdressing Pack needed to be designed?

2. Research Methodology

The method of data analysis in this thesis is qualitative and quantitative. Thus, according to the designs done in the field of hairdressing pack, the aesthetic analysis of designs will be done qualitatively. But in the laboratory, given the data, data analysis will be quantitative. The research method in this study is descriptive-experimental. The method of collecting information in this study is laboratory research and in the practical part, the laboratory method has been used. The library method uses formal and informal written documents including theses, books, articles, databases, research and information, etc., and the laboratory method has used laboratory data acquisition.

2.1. Materials and Used Devices

The project used the consumable chemicals listed in Table 1.

Table 1 Characteristics of the chemicals used

Name of the material	Manufacturer name	Chemical formula
Silver	Sigma Aldrich	Ag
Copper	Sigma Aldrich	Cu

The specifications of the devices used are also given in Table 2.

Table 2 Specifications of the devices used

Device name	Manufacturer	Description
Oven	Shimifan-Germany	-
Magnetic stirrer	Heidolph- Germany	-
Digital Balance	KERN-Germany	0.0001 g Accuracy
Ultrasonic bath	EURONDA- Italy	Frequency: 40 kHz, Power: 100 W

2.2. Fabric Preparation

The cellulose fabric was first washed with distilled water. The nano-composites were then inserted into the ultrasonic bath with specified percentages (1.5% wt of nano-materials). At 50°C the suspension was prepared after 30 minutes. The fabric was then added to the bath and placed under ultrasonic waves to complete the fabric. Finally, the sample was washed and dried.

2.3. Antimicrobial Test

The quantitative evaluation of the antimicrobial activity of complementary fabrics against Gram-positive *Staphylococcus aureus* (ATCC 25923) and gram-negative *Escherichia coli* bacteria (ATCC

25922) was evaluated according to the 2004-100AATCC standard method. In this method, the specimens were placed at 10×10 mm in the vicinity of a bacterial suspension prepared based on McFarland half. The samples were then incubated in the incubator at 37°C for 24 h and then, for quantitative examination of the microbes, 100 μL of tryptic soy agar were placed on a plate. For bacterial growth, the culture media were incubated for 24 h in 37°C incubation. Finally, the number of bacterial colonies in each container was counted and the percentage of bacterial decline was calculated using the following equation:

$$(R)\% = (A-B) / A \times 100$$

In this equation, A is the number of raw colonies (control), B is the number of secondary colonies (solution adjacent to the treated product) and R is the percentage of bacterial reduction in the treated sample compared to the control sample.

3. Antimicrobial Activity Results

The spread of various diseases by pathogenic bacteria and their resistance to antibiotics has led researchers to seek safe and hygienic ways to produce products suitable for human well-being. With the advent of nanotechnology in the present century, nano-materials such as silver, gold, zinc, copper and titanium dioxide have been used as antimicrobial agents. In this study, the antimicrobial efficacy of cotton samples in reducing the two common strains of Gram-positive *Staphylococcus aureus* was the source of eye, skin, bone and joint infections and Gram-negative *Escherichia coli* bacterium is origin of urinary, nosocomial and blood infections. The quantitative values of the antimicrobial test of the samples indicate that the raw fabrics have no microbial properties and in the treated samples the percentage of bacterial reduction for Gram-positive *Staphylococcus aureus* was 97.3% and Gram-negative *Escherichia coli* was 100%. Therefore, the use of these nano-particles facilitates the decomposition of bacteria. Bacterial breakdown by the desired material can be caused by the destruction of the membrane, wall and enzymes of the bacteria.

3.1. First Proposed Design Analysis: Oyster Design

Packaging is an indispensable component of a product that recognizes and maintains the product from production to consumption, which should have a beautiful appearance and protect its contents. Packaging in today's world has a meaning beyond the aesthetic. Using different types of packages, while also providing better storage capability, is also effective in gaining a higher market share for the product in question. Inadequate attention to the standards of hygiene kits made hygiene away from important products and despite having very good quality at production due to the emergence of some secondary contamination or supply in sizes or off-standard items they cannot reach the global markets. Obviously, with the implementation of hygiene packaging plans, we will be able to compete with similar foreign products in the global markets. The science of packaging design, the art and technology of product protection is to store, store, transport, and distribute sales inventory and use in such a way that the least damage to the product content is consumed during production. The material chosen to cover the product is important in this project to try to make more use of the fabric to help make these tools antibacterial, the main task of the product protection packaging. The packages include its physics and graphic design. In the first case, in terms of physics design, the product case tried to have a boxed case design and be able to fit antibacterial fabrics into it. Cosmetics are related to the skin. The oyster shells make the epidermis or layer on the skin soft, and the appearance of this coating is like the oyster that externally encapsulates the graphic in the hands of the target audience for softness and protection and inside the wraparound eyelash curler, which is

covered with antibacterial fabrics, does not allow any bacteria to enter the box and after each use of eyelash curler by placing the fleece inside the box and the eyelash curler contact with the antibacterial cloth kills any bacteria. Because the shell has the task of protecting the pearl within it, it protects our eyelash curler product and it doesn't allow bacteria to enter. The designer in this packaging has likened the eye to a pearl that is sensitive and there should be no contamination, and it has two upper and lower eyelids similar to the mussel in which the product is housed and covered. It also prevents breakage from getting wet and so on. The reason for the use of white in the antibacterial fabrics inside the shell is because of its purity, cleanliness and sterility and like a pearl that has a special shine, in the shell that opens, the color of the fabrics has a special shine and given the character of the fabrics, the designer has been trying to shine inside the shell with this color and show the tool being very clean.



Fig 1 Oyster Design

3.2. Second Design Analysis: Pad Design

Objects inside the pack need protection from other factors such as germs, heat, and so on. It is used to suit the different product packaging considered. Protections against depletion of oxygen, water vapor, dust, ultraviolet radiation, etc., are included in the package. Pack impermeability is an essential factor in packaging design and maintaining the quality of the contents inside the package and extending its service life is one of the most important tasks of packaging. Packages must have features that make it easy to redistribute, move, display, open and reopen, sell, use. Packaging is a

complex, dynamic, scientific, artistic business operation that encompasses at its most basic the functions of protection, maintenance, transportation, information and sales. Packaging is a kind of service performance that cannot exist by itself, because it needs a commodity. If there is no product there will be no packaging. Today packaging is economical and easy to transport. Price, time, and the right place determine the free market economy. Today's packaging must be designed and manufactured according to international standards. Because the packaging should have at least a share of the finished price per unit of product, In addition, the packaging is considered to be free of charge and an interest in the buyer. In fact, the packaging should have a beautiful appearance, protect its contents and be able to be arranged in bulk and positioned on standard pallets and finally have the necessary shelves on store shelves. The packaging design of the makeup pad is inspired by the milk envelope packaging, which evokes a sense of cleanliness. Natural beauty experts say milk can soften, brighten and exfoliate skin and even more so, it will help your skin so it is the best option for the skin and packaging you want. The most important issue in women's skin care is that this design has been presented with a focus on the perception of milk that symbolizes health, repair, softness, and more. Therefore, the design of this packaging is white, which symbolizes purity and innocence, reflecting light, color, freshness and simplicity. White is a blank canvas and a sign of cleanliness, equality or a new beginning. As a color in packaging design, it is a sign of the security and conservatism of the product. But it's a good choice for expressing a picture of cleanliness, cleanliness, efficiency or simplicity. Adding a few more colors to the color of the packaging design can create different messages in white. Therefore, in the design of this product, the color blue that is the color of trust, honesty, power and unity has been added and used alongside white. When used in the design of packaging the color blue undoubtedly expresses the confidence that the customer can have in the product. Also, the use of pale blue makes the product more creative.



Fig 2 Pad Design

3.3. Third Design Analysis: Brush Design

When designing a cosmetic bag, one should note the key points that make it easy to use and application, including:

- Saving in Application
- Reduce the amount of waste and reduce the cost of finished goods
- Help to make informed purchases
- Ease of use
- Help to raise the standard of living
- Help to increase employment and income levels
- Help to reduce severe disease
- Keeping the product healthy

The design of the bag for thermal hair brush is made of a rectangular shape proportional to the position of the main part of the brush that has direct contact with the hair and is suitable for germs. Covered with an antibacterial fabric, it does not allow any bacteria to enter the box and after each use by brushing it inside the box and contacting it with the antibacterial cloth, it kills any bacteria. The packaging must be designed in such a way that it contains the least amount of ingredients and at the same time fulfills its task. Material reductions in this way make subsequent considerations and measures regarding reuse, recycling and recovery of the excess material unnecessary. Various marketing studies have shown that packaging design is one of the most effective marketing tools for sales. The ultimate driver of success is packaging design. The design should be designed so that any group of people can understand it and understand the product's performance. Now if they are in the category of illiterate, children and so on, the cover design is proof of the beauty of the hair and the freshness of the product. Proper use of color also transmits the message and makes it easier to find the product in the shop layout. Another point is that although the use of four colors is valuable. The relationship between colors and concepts such as masculinity, femininity, and so on; for example, the relation of red to aggression and masculinity as opposed to pink and its relation to softness and femininity. Blue is known for calm, white for purity, and so on. There is a subtle and subtle connection between color and culture that varies from culture to culture. In terms of the inner concepts of color, especially the emotional aspects of it, individuals also extract more subtle influences. Effects that is effective in expressing the shape, texture and identity of the object. Therefore, this important color feature can be used to provide a specific identity to the product and in other words, a product can be visualized using color, visually feel, warmer in heat, lighter in weight and even smaller in size. Therefore, the color of the product is pink. Pink is one of the most delicate and sentimental colors. It gives the audience a sense of cleanliness, comfort, hope and comfort. The target audience is young girls, children and even women.



Fig 3 Brush Design

3.4. Fourth Design Analysis: Face Threading Design

Packaging is an art or operation used in preparing work for shipment and / or delivery to the customer, and can also be said to be a container that accommodates customers. The design of the face threading box uses a design that resembles the cocoon of soft, delicate silk, delicate silk that is found by opening the box and separating the butterfly on the cocoon cover. Silk cocoon has a sense of softness, softness and cleanliness. Inside the box is covered with an antibacterial cloth that after each use it removes all the germs in the box and is clean and free of any germs for later use. The first thing that comes to our mind is that the packaging is the protection and preservation of the product inside. Although the concept is based on the concept of packaging, it does not have the role of today's packaging. In today's world, packaging has important and varied roles. Concerning the role of packaging in the modern world, there are various classifications, each of which are comprehensive.

Packaging Applications:

- Introducing the name and logo of the product
- Motivate customer buying
- Direct communication with the consumer and tips on how to use it
- Indirect communication using specific colors, shapes, or genus that reflects the quality of the product.
- Creating new markets

In fact, today, unlike in the past, multipurpose packaging has functioned. In the past, packaging was only used to transport and protect the product from failure or breakage. Purple color has been used in the packaging design for this product. This color, in addition to creating a spiritual state of relaxation, is a happy and vibrant color and older ladies and young girls are in favor of this color. It is almost a mysterious color that many people are very fond. The purple color evokes a sense of gentleness, a sense of nostalgia and romance.



Fig 4 Face Threading Design

3.5. Fifth Design Analysis: Sandwich Design

Curious about opening a product box is one of the instincts, or in other words, of many people's favorite pastimes. The more attractive and beautiful the packaging of the product is, the more willing the customer will be to buy. On the other hand, the packaging represents the kind of value that the manufacturer places on its product. Clearly, cheap, low-quality packaging drives the customer's mind toward a low-quality product. Sometimes a quality product only fails because of poor packaging. Packaging enables better service delivery from the manufacturer to customer satisfaction. Sandwiches are a food that everyone wants to have in their meals, because in addition to the deliciousness, the ease of desire has caused this tendency, since this dish contains all the ingredients and the person has the contents and the bread in their bread, the design of the bag for hairdresser accessories came with the idea of a hamburger that people can put all the products in the bag after the job, to disinfect all the antibacterial fabric in the bag and it's completely clean for later use. This design gives the customer a sense of cleanliness from the food. Conservation and

protection of chemical, physical and mechanical agents have long been one of the benefits of this project and better engineering. As a result, there is more layout and order in stores and better efficiency and ease of use. On the other hand, color not only plays an important role in the packaging design of products on the shelf, rather it transmits an advertising message, encouraging consumers to buy that product. The packaging of this product uses a golden color that symbolizes kindness, care and love that adds to the charm and beauty of this packaging. Gold is a color that indicates the superiority and specialty of a product.



Fig 5 Sandwich Design

4. Conclusion

Modern fabrics are an important factor in expressing the creativity of artists. Today, with the development of fabrication machines, various fabric packages are produced and supplied. Maintaining the health and well-being of hairdressing tools and accessories is emphasized by male cloth packaging. Therefore, the design of hairdressing cloth packages that will be able to maintain and promote skin health will be of particular innovation. The production of modern and efficient hairdressing textile packages has led to a dramatic change in the field of textile design in this area and designers use new fabrics for their purposes and influence the shape, design and appearance of packs by choosing the type of fabric. Fabric designers use these achievements as a means of presenting their designs in today's world. This thesis attempts to present and design hairdresser packs with two basic categories, namely the principle design as well as the use of antibacterial property. In this thesis, nano-copper and nano-silver have been used to complement hairdressing packaging to improve consumer health. On the other hand, color science and design principles were

also used to improve the mental health of consumers and finally pack were designed with such features. The fabric packs contain nano-materials that can eliminate bacterial contamination of the tool when contacted by a hairdresser and on the other hand, we have tried to play an important role in their design by applying design principles and scientifically using color as one of the main foundations of the visual arts. Due to the process done in this thesis, it is suggested that different methods such as electrification for the design of hairdressing packaging be used to develop such textile packages.

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