

A Study on the Fashion Design Applying Rose of Sharon DTP(Digital Textile Printing)

Jung, Mi Jin

Assistant Professor, Dept. of Fashion, Soong-Eui Women's College

Abstract

The purpose of this study is first, to enhance the national image of Korea by developing rose of Sharon patterns. Secondly, it is to vitalize the fiber industry by enhancing DTP patterns. Thirdly, it is to properly improve the connection between DTP textile design and fashion design. The result of using DTP, which can be edited and tested in small amounts through a computer, to develop a pattern, using Illustrator and Photoshop, of the Rose of Sharon, to integrate into fashion is as follows. 1. The Baedalkye rose of Sharon motif was stylized by editing the colors on the image using a film, and contrasting cold and warm colors instead of using white. This was printed on warm-red chiffon material which completed a free and feminine gypsy-like clothing design. 2. While preserving the distinct colors of Hong Danshimkye, a romantic dress of soft beige chiffon fabric with a stylized motif was presented. In the hip area, a repeated chain of the rose of Sharon pattern was added to make the dress more organized. The two flower prints and the hip area were made to stand out and be eye-catching. 3. The Baek Danshimkye was developed into a motif in a mosaic style which was then printed on silver polyester material and applied for clothing design. The clothing has the rose of Sharon patterns in one size lined up and designed in a modern way. 4. The design of the elegant, cold feeling Chung Danshimkye was printed on metallic silver material which made the design look futuristic. The dress has a tight silhouette with a futuristic space look. The trimming of the original motif is cut round into the shape of a spaceship. 5. The characteristic of Ahsadalkye rose of Sharon's two-toned petal was enhanced to make a stylized motif. The designed motif was printed onto pink translucent chiffon. The scarf, a must-have item for women, was designed with a unique cut made from translucent fabric. The watercolor-like rose of Sharon motif is on the front making the scarf more light, fresh, and spring-like.

Key words: rose of sharon, digital textile printing, fashion design, patterns, national image

I. Introduction

1. Purpose of Study

The flower Rose of Sharon which represents Korean offspring's soul and emotion, has survived as a part of Korean history for a long period of time. Despite its long time with Korean, the flower has weak research on promotion or design development than the cases of other countries. Even though the Rose of Sharon, Korea's national flower, is just as beautiful as foreign countries national flowers and has been through much history with us, it is not actively expressed in the areas of art, literature, and design. Therefore, by using DTP(digital textile printing), a distinct printing method, to create a pattern of Korean national flower and integrate it to fashion design the textile industry can become active and the Rose of Sharon can be positioned as an image of the nation and help spread its greatness. Instead of rushing to increase its economical value, it is important, like the prestigious foreign scholars pointed out, to invent an image of strong Korea to flash into Korean heads as our national image. It is necessary to be aware that having a strong national image will lead domestic products furthermore be the base of higher value-added business for our clothing to export. The flower patterned fabric supplied in the market currently is only considered a simple pattern as assisting to fashion rather than recognizing and representing the value of what the flower's name and content symbolizes.¹⁾ Thus, the patterns of the Rose of Sharon did not receive an opportunity for mass production as most productions were mainly small amounts from master craftsmen. Moreover the leading business of exports of textile industry in the 60s and

70s gave in to the countries with cheap labor and has no place in the competition of design between the developed countries, leading to a depression. Thereupon, by using a DTP method with the pattern of the Rose of Sharon, Korean distinct symbol, to supply to the textile industry, the small amount of handicraft fabric of the Rose of Sharon can become mass produced and export the fabric in large quantities. Furthermore, this could be an opportunity for Korea to secure a domestic pattern in the fashion industry and become a footstep to become a prominent country in design. Currently, the textile industry adopted a computer method of the developed countries which makes the existing screen to use DTP to deviate from dyeing print method for activating future-oriented printing methods. In contrast to the screen printing method which has to dye over a certain amount even when one wants dye once, the DTP method which has no boundaries and can print from one to as many patterns one wants. This method not only is a necessity in mass production but is also economical and save materials when only small amounts of patterns are needed to be printed to test for developmental research of fashion design. In addition, it is more time efficient than other methods of dyeing because it is easier to make corrections since it is designed on a monitor. Therefore, this study uses DTP which can be easily corrected and produced in small amounts to develop a pattern of the Rose of Sharon to integrate into fashion design and present it.

There were three main goals of this research. First, the making a nation image from developing the pattern of the Rose of Sharon. Second, is the promotion of textile industries with the development using DTP patterns. Last, vitalize of integration of textile patterns using DTP into fashion design. This

research is expected to increase the textile of the Rose of Sharon patterns and the quality of fashion, and research of fashion design using DTP. Thus, this study developed 4 digital printed dresses and 1 digital printed scarf with 5 different types of Rose of Sharon.

2. Methods & Range of Study

The range of this research of the history and types of the patterns of the Rose of Sharon is from the latter era of the Chosun Dynasty to 1990.

As a textile pattern, the Rose of Sharon research mainly used digital printing method out of knit, dye, printing, needlework, weaving etc, for it can be corrected easily, therefore, produce a variety of designs. As software for developing the design, Adobe Photoshop and Illustrator was mainly used instead of the professional software like Textpro or 4D Box. This was because when integrating fashion design with textile patterns, using software that is generally used in the area of fashion design can increase the distribution rate and usability. In this research the background of the Rose of Sharon pattern history and types, digital printing and textile was studied by information from books related to textile design, fashion, esthetics, related research papers, newspaper, internet etc.

II. Theoretical Background

1. Study of DTP

1) Digital Printing and Textile Design

Digital printing is a printing method which omits

color distinguishing, drafting and such operational process using an exclusive textile design CAD system to digitalize the designing process and printing straight from an inkjet printer. By digitalizing the entire process from designing to printing of fabric, it maximizes the reduction of labor costs, expenses and time; this can be called a shortened printing system.

To start with, Digital printing makes it easy to deal with creative, detailed designs<Fig.1>. It can scan complicated images that can be edited by the computer which other printing methods were unable to do before. Then, the image can be printed by an inkjet printer where the designer can freely use hundreds of color, three-dimensional feeling and so on to express his artwork in more detail

Digital Printing's second advantage is the decrease of time to design and print. The original design is scanned and saved on the computer so it could be easily edited by simple computer work; therefore, the time for editing can be saved. Also, there would be no need to go through the complicated process when the design needs to be reprinted. While Digital Printing would take only one or two days, the original printing method would need 14 or more days,

The third benefit of Digital Printing is that this system can reduce water pollution along with many other kinds of pollution. Because the designer can see the image beforehand, the samples do not all need to be printed so there is less fabric wasted. In addition, this method can greatly reduce the waste that is produced in the process of mixing the dye.²⁾ The by-product that is produced when making the film that breaks down color, screens and so on do not need to be wasted. All this can lead towards change to an environmentally friendly printing method.



<Fig. 1> Digital Printed fashion
(source:Digital Printing,
Seoul:Hahkmoonsa, 2002)



<Fig. 2> Conventional Printing
(source:Digital Printing,
Seoul:Hahkmoonsa, 2002)



<Fig. 3> Digital Printing
(source:Digital Printing,
Seoul:Hahkmoonsa, 2002)

Lastly, digital printing can decrease labor costs and subsidiary materials. Printing methods before took up to two weeks and a dozen people working. On the other hand, digital printing takes only one or two days and one designer. In addition, there is no need to process or print a film so material costs can also be decreased. All in all, Digital Printing is much more efficient than the existing method.³⁾

2) The Process of Digital Printing and Conventional Printing

The conventional printing takes the original copy of the design and drafts it using CAD. Then, it is divided by degree of color and the image is moved to the film in the process of forming plate.⁴⁾ In order to print a product the process of making a plate, mixing dye colors, print, color fastness, steaming for permanence, defending process all need to be done<Fig. 2>.

On the other hand, the Digital Printing process, with the help of CAD, takes the original copy of the design and goes through image processing. Then, the sample can be confirmed simply when it is directly printed on the fabric. The operation can be finished with perfection<Fig.3>.

<Table 1> A Comparison of DTP Vs. Conventional printing

Process of Digital Printing	Process of Conventional Printing
	Design on papers
Design on papers	↓ Operation
↓	↓ Drafting(CAD)
Operation	↓ Process
↓	↓ Making film
Scan and CAD Edit	↓ Plate making
↓	↓ Mixing dye
image	↓ Printing
↓	↓ After work
Print on fabric	

2. Rose of Sharon & Design

1) Symbol of the Rose of Sharon as a National Flower

The Ministry of Culture, Sports and Tourism surveyed the citizens of Korea in 2006 for their opinion on the 100 things that symbolize our national culture. The flower, Rose of Sharon, along with the

flag of Korea was chosen to be one of the items that represent our nation.

The Rose of Sharon symbolizes our nation. The evidence can be found in old literature. In old poems, there are many lines that mention that Korea has much Rose of Sharon.

In old documents, Shil-la dynasty was often mention as 'The country of Rose of Sharon' (Keun-Hwa-Hyang) and China referred Korea to 'The country of noble men where the Rose of Sharon blossom and wither'. Like this, Rose of Sharon which was loved by our people burst into bloom and this was when this flower officially started to be our national flower. During the Japanese colonial period, schoolteacher Namkoong, Uk of Bae-Hwa-Hak-Dang (School that boycotted against Japanese goods) drew the map of Korea by expressing the thirteen province of Jo-Son using thirteen Roses of Sharon which the girl students weaved⁵⁾. This confirmed the fact that the Rose of Sharon symbolizes our country<Fig.4>. The Rose of Sharon also symbolizes our democratic and resistant spirit.

As new culture entered Korea after Gap-Oh-Kyong-Jang, each tried to increase the self-esteem of our nation and tried to preserve equal places with powers. This is the reason the necessity of a national flower was recognized.⁶⁾ Once the Rose of Sharon was mentioned in the chorus of Korea's national anthem, it confirmed the place of this flower being the national flower.

Post-war to the Japanese annexation of Korea, when Korea lost their rights to Japan, the Rose of Sharon was also chosen to symbolize Korea against Cherry Blossoms, the national flower of Japan. Family insignia was inserted into the Japan and European countries formal dress, but Korea chose to

insert a pattern of the Rose of Sharon to symbolize the whole nation. Father Richard Rut, from England, who lived in the latter era of Chosun dynasty for twenty years, highly praised the fact that all countries national flower started from being an imperial and aristocratic flower, but only Korea chose the Rose of Sharon as a national flower for being the peoples' flower. This made it a part of the tradition of the nation.⁷⁾

The reason the Rose of Sharon could be with Koreans during the period of our nation's difficulties comes from its spirit of resistance. A tale of the Rose of Sharon which did not bloom when the king of late Tang demanded to plant flowers in the three months of winter (Sam-Dong) is an example of this spirit.

Japan enforced a policy of annihilating the national flower which ordered that the Rose of Sharon should not be planted. Schools even made student dig up this flower and rewarded them if they dug a lot of them up. When Osahn School refused to close down the Hill of Rose of Sharon, which the flower bloomed all over, after the Japanese demanded them to, they lit fire on it. The angry students all protested and resisted against Japans' oppression.⁸⁾

The Rose of Sharon symbolizes Koreans' beauty. After independence, government was formed and the flower was designated for it was mentioned in the national anthem. As a national flower, an ornamental design of the Rose of Sharon was included in Korean money, stamps, ornaments in events, direction boards, and in many official documents of governments in order to increase its influence.

Before the latter era of Chosun Dynasty, there were more drawings of the flower Peony than the Rose of Sharon due to the influence of China. One

of the drawings of the Rose of Sharon is a famous folk painting called <Jang Ho Won > drawn by Suk Yu (1827-1873). Suk Yu was famous for drawing landscape, people, and flowers and birds<Fig.7>.⁹⁾

Even though the Rose of Sharon had much meaning to Koreans as it has been with Korean history for a long period of time, it has not been promoted as a national image to other foreign countries.

The English name of this flower, ‘Rose of Sharon’, means ‘the rose that blooms in a region called Sharon’. However, the region Sharon, which is in the bible it considered a ‘Holy soil’ or ‘a promising God’s land’ because it produces lots of crops due to the fertile soil.¹⁰⁾ So, one can say that the name of this flower means that it is such a beautiful flower that it is like a rose that blooms in a promising land of Gods. Therefore, the world’s perception of the Rose of Sharon is that it is a very beautiful flower.¹¹⁾

The Rose of Sharon evenly blooms all over the world, except in cold areas. This shows that this flower has potential to be globalized since it is thought of a holy flower in not only Korea but also to the world. In order to emphasize the Rose of Sharon as an image of Korea, it needs potential to be a source for globalization. There is, however, not enough activity done so far for making it a symbol of our nation. Thus, it would be meaningful if Roses of Sharon are characterized by types and symbolized with Korean characteristics. This study will be developed with 5 fashion designs of 5 types of rose of sharon based on symbolized meaning<table 2>.

<Table 2> Symbolizing of the Rose of Sharon (source:www.mughwa.or.kr)

	Original shape	Characterized shape	symbolizing
Baedal kye			pure, liberal
Chungd anshim kye			mystic, cosmos
Hongda nshimk ye			passion, romantic
Baekda nshimk ye			modern, chic
Asahda lkye			fancy, lovely

2) Rose of Sharon & Cultural Products

Since the Rose of Sharon is a national flower, the pattern of it is in many government facilities, in the Presidential residence, and in the middle of the service mark of the office. In addition, it is included in the badges of the members of the National Assembly, police insignia, and in many elegant awards including the Grand Order of the Rose of Sharon.

The sketch of the Rose of Sharon appeared in currency as well. The silver money on the 5Nyang in 1892 had a branch of the flower. The first currency with the whole flower was in a 10Hwan coin produced in 1959. On paper money, the first sketch appeared in 1932 on the 10 Won<fig5>.



<Fig. 4> An Embroidery of the Rose of Sharon(source:http://kin.naver.com)



<Fig. 5> A bill printed in 1947 (source:http://kin.naver.com)



▲ Commemorative stamp for opening the Upper House
▲ Commemorative stamp for setting up a government, 1948.

<Fig. 6> Rose of Sharon Printed Stamps (source:Korean traditional Flowers, Seoul:Nexus, 1999)



<Fig. 7> A Painting of the Rose of Sharon (source:Korean traditional lowers, Seoul:Nexus, 1999)



<Fig. 8> Rose of Sharon printed Po-shin-kak Bell (source:http://kin.naver.com)



<Fig. 9> A fashion show of rose of sharon (source:http://news1.kr)

The sketch of the Rose of Sharon was also included in stamps. Until we were free from the Japanese, we had to use their stamps. The first stamps announced, included a sketch of the Rose of Sharon, which was during the government transition period in 1946.

After, stamps were published with a sketch of a portrait of Jun Lee, a patriotic martyr, and the Rose of Sharon. In the 1950s, 'The Rose of Sharon Stamp', which had a drawing of two fully blossomed Roses of Sharon, was issued.<fig.6>

In the 1960s, there were sketches of a Rose of Sharon in natural colors on the stamp made for the commemoration of the National Liberation Day of Korea. In the 1970s, the stamp for congratulating the 7th president.

appointment also had the flower in the middle of the badge of the president. Also, the stamp for Children's Day, too, has the flower drawn on the top of the music for the Children's Day Song<Fig.6>.

Besides this, the drawing of the Rose of Sharon and its branch appeared in text books in the latter era of Chosun Dynasty. Also, in front of the Bosingak Bell there is a drawing of the Rose of Sharon embedded<fig.8>. Not only that but also the flower is patterned with the flag of Korea in the ceiling of the waiting room in Seoul Station.

Fashion and cultural products area is opened to rose of sharon motif all the time. There was a fashion show of rose of sharon in Hong-chun area of korea<fig.9>. A Rose of Sharon framed divider won a prize at 'Rose of sharon cultural products



<Fig. 10> cultural product of rose of sharon (source:<http://http://www.mugunghwa.or.kr/>)



<Fig. 11>Cherry Blossoms printed on Kimono (source:<http://blog.naver.com>)



<Fig.12>Poppies printed on Indian Textiles. (source:<http://blog.naver.com>)



<Fig.13>Apricot flowers printed on Chinese Textiles(source:<http://blog.naver.com>)

contest'<fig.10>. Letter papers are uniquely designed with characterized Rose of Sharon<fig.10>.

2) National Flowers & National Images

There are many examples of national images which were enhanced by national plants according to Kim(2002).¹²⁾

It would be an example of contribution of flowers in terms of establishing image of nation, for rose bringing up the image of England, tulips remind people of Netherlands. Especially, Japan used cherry blossoms as a cultural element of national brand. They hold festival of cherry blossoms called 'sakura matsuri' so that people from all over the world would be aware of cherry blossoms as a cultural elements. Besides, it is an important point that by making variety cultural products of cherry blossoms, Japan made an opportunity to spread image of cherry blossoms as aesthetic part of Japan all over the world.

In terms of fashion design, national flowers are not exceptional element, apricot flowers are often seen Chinese textiles in China<fig.11>. The Japanese traditional costume, Kimono are often printed with cherry blossoms<fig.12>. Poppies are the national

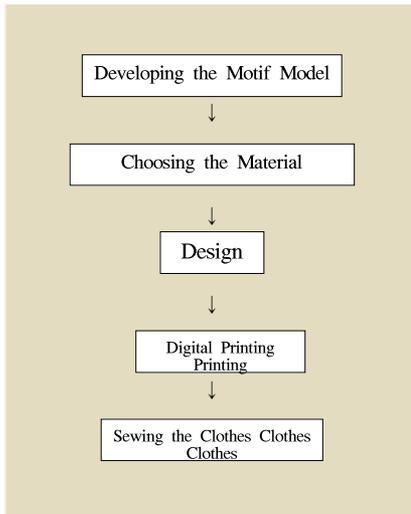
flower of India, it is not hard to find out patterns of mohnblumen among the traditional costume, Sari<fig.13>.

At this point of view, the Rose of Sharon should not be considered as just a kind of plants. It is deserved to focused as an important element of cultural brand of a nation.

III. A Development of DTP Fashion Design Using the Rose of Sharon

Using DTP textile for fashion design goes through the process of choosing the motif, developing the motif(CAD), choosing the material, design, Digital Printing, sewing the clothig.<Table 3>. In this paper, we used computer software to develop the motif, Adobe Illustrator for motif drawing, and used Photoshop CAD for editing the motif image. This study developed 5 fashion items based on 5 different types of Rose of Sharon including engineering design.¹³⁾

<Table 3> Process of Rose of Sharon DTP



<Fig. 14> Types of the Rose of Sharon
(source: <http://www.mugunghwa.or.kr>)

1. Developing the Motif of the Rose of Sharon

1) Analyzing the Types of Rose of Sharon

According to the national standard plant list from Korea Forest Service, there are 178 kinds of Rose of Sharon.¹⁴⁾ There are many factors to categorize this flower.

The types of the Rose of Sharon<Fig. 14> can be categorized by the color and the central danshim. Danshim is a red line distributed in the central area of the stamen. The dictionary definition of danshim is caring heart. It is compared to red patterns of rays in the stamen which looks like a caring heart towards the flower. Danshimkye is the flower that is known as the national flower. There is a red spot near the central stamen and the petal has a variety of red, white, and blue. Here the red is called Hong Danshimkye, the white is called Baek Danshimkye, and the blue is called Chung Danshimkye.

Firstly, the Rose of Sharon has a Baedalkye. This

has no danshim in the middle and the petal is all white. Since the era of Sang-go, Korea was called the Bae-dal race because Korean people like white and wear white clothing. Secondly, there is a Hong Danshimkye near the middle of the stamen and all of the petals are white called Baek Danshimkye. Thirdly, the red flower which has a danshim is called Hong Danshimkye. Fourthly, the Rose of Sharon which has a Hong Danshimkye and blue petal is called a Chung Danshimkye. Fifthly, there is the Ahsadalkye. This has danshim with red vertical patterns on the end of the white petal. The red patterns is thought to symbolize the sad love between Asadal and Asanyeo.¹⁵⁾

The types of Rose of Sharon the Korea Forest Service holds are mostly Hong Danshimkye and Baek Danshimkye. Also, the government designated and recommend Danshimkye as the supply in order to reduce confusion. Usually, Baek Danshimkye and Hong Danshimkye which has a danshim is distributed in Korea rather than Ahsadalkye or Baedalkye. In addition, it is thought more of as the symbol of Korea.

Motif is not only the base but also the most

<Table 4> Developing the Motif

	Saving images	Drawing images	Upgrading images	Pantone Color Number
Bae-dal kye				5155c
				7461c
				198c
Hong Dan-shimkye				1815c
				4995c
				7513c
Baek Dan-shimkye				1815c
				7433c
				8100c
ChungDanshimkye				2627c
				690c
				7435c
Ah-sadalkye				2738c
				244c
				7444c

important in textile design. Motif is the smallest unit when expressing the topic that will be printed. There are many types such as.

animal patterns, plant patterns, abstract patterns, geometric patterns, traditional patterns and so on.¹⁶⁾

As Korean national flower, the Rose of Sharon symbolizes nation, Koreans' spirit, and aesthetic sense. If we design this as our national image and export it, the value will be very high. Not only that but also it is easy to develop in design and integrate it into a clothing because flowers are most often chosen as a textile motif. This is why the Rose of Sharon was chosen.

Although Danshimkye is the national flower of Korea, the focus of this paper was not narrowed to developing the national flower as a design but to increase the design of the Rose of Sharon. So, there

are types other than Danshimkye included in this paper.

Baedalkye, which has no danshim, was chosen as a motif because our people like to wear white clothing. Hong Danshimkye, Chung Danshimkye, Baek Danshimkye are the main types of national flowers; therefore, it was chosen as a motif to lift Koreans' spirits. Lastly, the red pattern Ahsadalkye was chosen due to the tale of the Asadal which is a part of Korean traditional story.

2) Developing the Motif

Pictures are taken of the chosen Rose of Sharon and saved as an image on a computer. The saved image is opened on Illustrator and drawn with another line. The drawn image of the Rose of Sharon is upgraded using editing features, filters and so on,

on Photoshop.

The main characteristic of Hong Danshimkye was the red ray patterns in the center and the pink petal. To make this stand out the Hong Danshimkye line was patterned to make it clearer and the petals were made more interesting by alternating the colors from pink to white.

The Baek Danshimkye was expressed by drastically contrasting white petals and the Hong Danshimkye and with swirly, curvy lines in the middle red area. Also, mosaic filters were used with the red and white color.

Chung Danshimkye was expressed as a calm, elegant Rose of Sharon by changing the Hong Danshimkye into purple and the petals to a similar color to blue. In order for a change, a filter was used to create a dotted line that scatters the solid color.

The Ahsadalkye kept the two-toned petals, white and red, and did not change the colors. They were kept naturally and the outlines were organized give the form style and make a pattern.

Both the petal and the stamen are white in the Baedalkye. Therefore, the motif focused not on the monotonous white, but the beautiful petals focused in the middle. To do this, sky blue and pink were put in to emphasize the beauty of the flower. Also, a filter was used to make the petals swirl.

2. Selecting the Material

In Digital Printing, the material is such an important part of making a motif stand out that it can even control the success of the design.

Also, in terms of time and financial, it is efficient if the material is chosen before printing because it can be scanned. This way, a simulation predicting the

result can be done beforehand. This way the design does not have to be redone because of a wrong choice of material.

The chosen material is scanned and saved on to a computer. It is then opened for a simulation on Photoshop. The scanned picture of the material is composited together with the motif of Rose of Sharon that has been developed beforehand. By doing this, the image can be edited if the fabric and the color do not go well together or if there is an area where the form looks too dark, before it is printed.

For the Baedalkye, a red fabric was chosen to lavishly support the swirly petals concentrated in the center. The red dynamic curves are harmonized with the warm feeling of the motif.

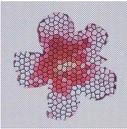
Soft chiffon fabric was chosen since it goes well with the Hong Danshimkye, petals and the feminine silhouette of Hong Danshimkye. In addition, beige, a warm color, was used which harmonizes with the red color of the petals.

For the mosaic stylized Baek Danshimkye, metallic silver polyester fabric was chosen to go with the simple silhouette that makes it seem future-oriented.

Chung Danshimkye is a Rose of Sharon consisted of cold colors. Metallic silver, a futuristic color, was chosen along with a straight silhouette to give a cold, simple feeling.

For the Ahsadalkye, we emphasized the fact that the petals are two colors. In order to make the scarf feel like spring, the pink pattern was made more vivid on pink translucent chiffon fabric composited with a feeling of transparent water painting.

<Table 5> Fabric & Motifs Simulation

	scanned fabric	motifs	simulation
Baedal-kye			
chiffon	pantone 4725		
Hong Danshimkye			
chiffon	pantone 7504c		
Baek Danshimkye			
polyester	pantone 650c		
Chung- Danshimkye			
polyester	pantone 5315c		
Ahsadal-kye			
chiffon	pantone 500c		

3. Design and Printing

The completed motif is composited with the prepared material on a monitor which goes through the simulation process. Then the concept of the clothes that fit the motif is chosen. The silhouette is completed by going through the process of sketching and rendering, in a certain concept chosen beforehand. The designed motif is printed on to the material which is sewed as the silhouette of the designed clothing. Then, the fashion design that used motif is

completed.

Both the petal and the stamen are white in the Baedalkye. Therefore, the motif focused not on the monotonous white, but the beautiful petals focused in the middle. Since the motif was developed as mystic and free atmosphere, the concept of Baedalkye was linked to bohemian look.

The main characteristic of Hong Danshimkye was the red ray patterns in the center and the pink petal. Since it's atmosphere is feminine and cheerful, the design concept was decided as Romantic.

The Baek Danshimkye was expressed by drastically contrasting white petals and the Hong Danshimkye. The color contrast makes obvious chic lines. So, the design concept was made based on modern.

Chung Danshimkye was expressed as a calm, elegant Rose of Sharon by creating a dotted line that scatters the solid color. The futurism was involved with blue-purple motif that has mystic depth of the cosmos.

The Ahsadalkye kept the two-toned petals, white and red, and did not change the colors. Since they were kept naturally and the outlines were organized give the form style and make a pattern, the concept was linked to a scarf that has natural elegance.

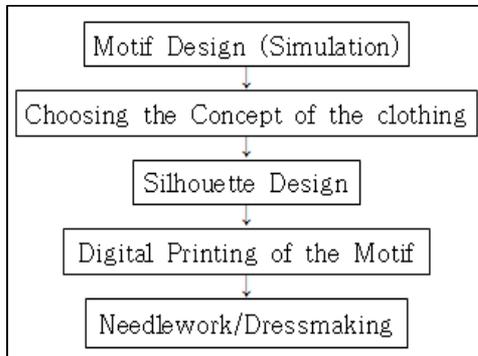
④ Color: Indian pink, blue, red

⑤ Detail: frills

The Baedalkye Rose of Sharon's lines were drawn on Illustrator and the image was edited by using filters on Photoshop. The motif was stylized by using cold and warm colors. Then, it was printed on a warm-red chiffon fabric. The Indian Pink fabric has a dreamy and soft feeling and completes the outfit silhouette to look feminine with a free bohemian style. Overall, there are frills and the dress is layered.

Instead of presenting an image of a traditional nation by realistically printing, a more free and dreamy atmosphere was presented<Fig. 15>.

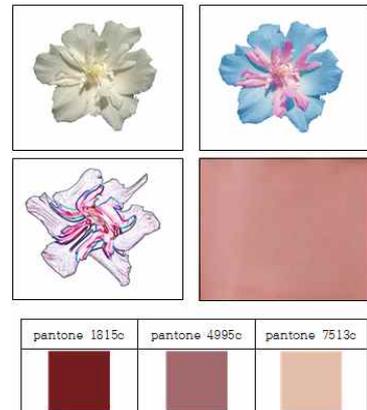
<Table 6> Process of DTP Fashion Design



1) Baedalkye Finished Design - Bohemian Rose of Sharon

Since the concept was linked to a scarf that has natural elegance, this design was titled as 'Bohemian Rose of Sharon'.

- ① Motif: Baedalkye Rose of Sharon
- ② Concept of outfit: Bohemian look
- ③ Fabric: Indian Pink chiffon



<Fig. 15> Baedalkye Finished Design - Bohemian Rose of Sharon

2) Hong Danshimkye Finished Design - Romantic Garden

Since it's atmosphere is feminine and cheerful, the design concept was decided as Romantic and named as 'Romantic Garden'.

- ① Motif: Hong Danshimkye Rose of Sharon
- ② Design Concept: Romantic
- ③ Fabric: Beige Chiffon
- ④ Color: beige, burgundy
- ⑤ Detail: beads

By using Illustrator for color and form of the Hong Danshimkye and using Photoshop's image



<Fig. 16> Hong Danshimkye Finished Design - Romantic Garden

editing filters, the distinct color of the motif could be enhanced. Then, fashion design was completed when the motif was printed on a chiffon fabric, in a similar color to beige.

While preserving the distinct color of Hong Danshimkye, a romantic one-piece dress of soft beige chiffon fabric with a stylized motif was presented. The hems, in order to make the dress more romantic, were cut in irregular curves with a flexible rhythm. In the neckline area, beads were repeated to make the dress look more organized. The Rose of Sharon motifs were printed in a row around the trimming in order to stand out and catch one's eyes<Fig. 16>.

3) Baek Danshimkye Finished Design - Modern Rose of Sharon

Since the design concept was made based on modern, it was titled as 'Modern Rose of Sharon'.

- ① Motif: Baek Danshimkye Rose of Sharon
- ② Design Concept: Modern
- ③ Fabric: Metallic Polyester
- ④ Color: red, white, silver
- ⑤ Detail: rounded cutting

Because the Baek Danshimkye Rose of Sharon's colors are very contrasting, Illustrator was used to make the two colors smoothly go along with each other by rendering. Then, the motif was developed by using Photoshop filters to make it into a mosaic style. The motif was then printed and designed on to a silver metallic polyester fabric.

At the front of the fabric several patterns of the Rose of Sharon motif of one size were placed. The modern styled design motif was lined up in the front of the dress<Fig. 17>.



<Fig. 17> Baek Danshimkye Finished Design -
Modern Rose of Sharon

4) Chung Danshimkye Finished Design -
Rose of Sharon in Space Age

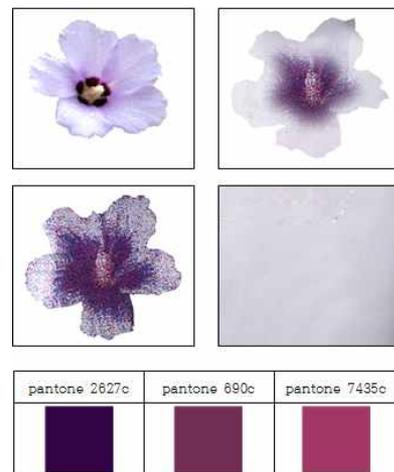
The title of this work is 'Space-age Rose of Sharon' for the futurism was involved with blue-purple motif that has mystic depth of the cosmos. It is planned for engineering design to emphasize the detail of petals.

- ① Motif: Chung Danshimkye Motif
- ② Design Concept: Futuristic
- ③ Fabric: Metallic Silver Polyester
- ④ Color: purple, silver

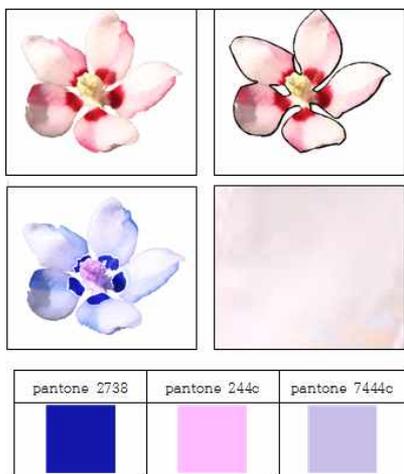
⑤ Detail: rounded cutting

The elegant, cold feeling of Chung Danshimkye was enhanced by maintaining the cold feeling of the color and form using Illustrator and was edited in detail with filters on Photoshop. The dress has a tight silhouette with a futuristic look of space.

The round motif design's trimming area is cut round into a shape of a spaceship<Fig. 18>.



<Fig. 18> Chung Danshimkye Finished Design -
Rose of Sharon in Space Age



<Fig. 19> Ahsadalkye Finished Design- Spring Fashion of the Rose of Sharon

5) Ahsadalkye Finished Design- Spring Fashion of the Rose of Sharon

‘Spring Fashion of the Rose of Sharon’ was titled since the concept was linked to a scarf that has natural elegance.

- ① Motif: Ahsadalkye Rose of Sharon
- ② Design Concept: natural elegant
- ③ Fabric: Light Pink Chiffon
- ④ Color: light pink, blue, red purple
- ⑤ Detail: curved cutting

The characteristic of Ahsadalkye Rose of Sharon’s two-toned petal was enhanced by using Illustrator to make a stylized motif. Then Photoshop filter was used to make a stained glass look. The designed motif was then printed onto pink translucent chiffon.

The scarf, a must-have item of women, was designed with a unique cut made from translucent fabric. The painting-like Rose of Sharon motif is arranged on the front, making the scarf more light, fresh, and spring-like<Fig. 19.>

IV. Results and Discussion

The summary from using DTP, which can be edited and tested in small amounts through a computer, to develop a pattern, using Illustrator and Photoshop, of the Rose of Sharon to integrate it into fashion is as follows.

Digital Printing can save money as it costs less and it is also time efficient when printing small amounts. Also, it is easier to deal with a variety of detailed designs.

The Rose of Sharon, our national flower, symbolizes not only our nation but our spirit and portrays our aesthetic sense.

After the latter era of Chosun Dynasty, the drawing of the Rose of Sharon was frequently used, such as, in stamps, currency, text books and so on. There are five major types of this flower. To begin with, the Baedalkye has a white center and petals. The second type is the Hong Danshimkye, which has a dark red center and pink petals. The third type, Baek Danshimkye, is red in the middle and has white petals. Fourthly, the Chung Danshimkye has a red center with blue petals. Lastly, the Ahsadalkye’s

petals are two-toned and it has a dark red center.

The development of the motif of the Rose of Sharon integrated with the clothing design is as follows.

1. The Baedalkye Rose of Sharon motif was stylized by editing the colors on the image by using a film, contrasting cold and warm colors instead of using white. This was printed on warm-red chiffon material which completed a free and feminine gypsy-like clothing design.

2. While preserving the distinct color of Hong Danshimkye, a romantic one-piece dress of soft beige chiffon fabric with a stylized motif was presented. While preserving the distinct color of Hong Danshimkye, a romantic one-piece dress of soft beige chiffon fabric with a stylized motif was presented. In the neckline area, beads were repeated to make the dress look more organized. The Rose of Sharon motifs were printed in a row around the trimming in order to stand out and catch one's eyes.

3. The Baek Danshimkye was developed into a motif in a mosaic style which was, after, printed on a silver polyester material and then designed. The clothing has one sized patterns of the Rose of Sharon lined up and designed in a modern way.

4. The design of the elegant, cold feeling Chung Danshimkye was printed on metallic silver material which made the design look futuristic. The dress has a tight silhouette with a futuristic look of space. The original motif design's trimming area is cut round into a shape of a spaceship.

5. The characteristic of Ahsadalkye Rose of Sharon's two-toned petal was enhanced to make a stylized motif. The designed motif was printed onto pink translucent chiffon. The scarf, a must-have item of women, was designed with a unique cut made

from translucent fabric. The painting-like Rose of Sharon motif is on the front making the scarf more light, fresh, and spring-like.

This study was held in order to:

First, shed a new light that the national image can become somewhat of a brand by developing a pattern of the Rose of Sharon.

Second, confirming that developing DTP patterns contribute to the acceleration of the textile industry. And lastly, trying to integrate DTP textile patterns into fashion design.

This study is expected to activate Rose of Sharon patterned textiles, developed fashion quality, and fashion design studies using DTP. In later studies, It is encouraged that more in-depth study can be done on Rose of Sharon's color and formative to integrate into fashion.

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무궁화 패턴 디지털 프린팅을 활용한 패션 디자인 연구

정 미 진

승의여자대학교 패션디자인 조교수

요약

이 논문의 목적은 첫째, 무궁화 패턴을 개발함으로써 국가 이미지 위상을 높이고 둘째, 디지털 프린팅을 활성화하여 섬유 산업에 기여하고 셋째, 패션디자인 산업과 디지털 프린팅의 효율적 연계성을 드높이는데 있다. 일러스트레이터와 포토샵을 활용하여 무궁화 패턴을 도안하고 그것을 패션 디자인에 접목 시킨 연구의 결과는 다음과 같다. 1. 배달계 무궁화 모티브가 백색자체보다 한난대비 색을 사용하여 양식화 되고 이 프린트는 여성스러운 붉은 계열 쉬폰 집시풍 원피스 드레스에 적용되었다. 2. 흥단심계 모티브가 구분되는 색상으로 단장된 반면 부드러운 베이지색 쉬폰 소재 드레스에 양식화된 무궁화 모티브가 프린트되었다. 힙 부분에는 드레스를 더 정리되어 보일 수 있는 체인 모양의 무궁화 모티브가 장식되었다. 힙 부분의 두 무궁화 모티브는 시선을 집중시킬 수 있는 포인트로 장식되었다. 3. 백단심계 모티브는 모자이크 스타일로 개발된 후 실버 폴리 소재에 프린팅 되고 디자인되었다. 무궁화를 한 가지 사이즈로 반복해서 줄을 세운 형태로 현대적 느낌을 살렸다. 4. 우아하고 차가운 분위기의 청단심계 모티브는 미래주의적인 느낌 디자인에 초점을 맞춘 광택 소재에 프린팅 되었다. 몸에 붙는 타이트 실루엣의 미래주의적 의상 일부는 둥글게 잘리어 우주의 느낌을 살렸다. 5. 아사달계의 특징인 두 가지 톤 색상 앞이 양식화되어 강조되었다. 분홍 반투명 쉬폰 소재에 프린트 되었다. 여성의 필수 아이템인 스카프는 독특한 컷팅으로 마무리되었고 수채화 같은 얇은 톤의 무궁화 프린트는 스카프를 봄, 신선함, 밝은 분위기로 장식했다.

주제어 : 무궁화, 디지털 텍스타일 프린팅, 패션 디자인, 패턴, 국가 이미지

