

Application of Floral Elements in Fabric Remanufacturing

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Abstract: To explore innovative applications of floral elements in modern fashion design, this study addresses the challenge of traditional flat printing patterns being the predominant form of incorporating floral elements into clothing design. Building upon the fundamental concepts and characteristics of floral elements, the paper analyzes the transformation of floral elements from figurative to abstract perspectives. It delves into the expressive modes of floral elements in fabric remanufacturing and explores various application forms. Through a detailed analysis of specific cases, the study summarizes that abstract floral elements predominantly manifest as form abstraction and texture abstraction in fabric remanufacturing. Additionally, it presents the principles of aesthetic forms for floral elements to provide valuable references for the utilization of floral elements in clothing design.

Keywords: Floral elements; Fabric remanufacturing; Aesthetic forms

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1. Research background

In the natural world, flowers have always been cherished by humans, especially women, who adorn themselves with floral patterns. Through artistic techniques such as painting and embroidery, people have introduced floral elements into daily life. Flowers serve as a beautiful link between humans and nature and have become a classic design symbol that endures through fashion trends^[1]. Flowers, as plants in nature, also carry rich social and cultural meanings, reflecting the romantic sentiments of women. Embellishing clothing design with floral elements always brings a touch of romantic style. Although flowers inherently possess beauty, their simplistic replication from the natural world in clothing design can become cliché. Therefore, designers need to distill and transform floral elements into specific clothing languages. This involves organically coordinating floral features such as form, structure, texture, and color through clothing shapes, fabrics, and techniques. This approach allows floral elements to transcend the superficial beauty of the natural realm, incorporating human design thinking and artistic elevation.

2. Representations of figurative floral elements in fabric remanufacturing

To authentically portray the inherent beauty of flowers and leverage the finesse of garment craftsmanship, many

clothing brands employ various techniques such as embroidery, beadwork, printing, three-dimensional (3D) tailoring, and 3D printing, utilizing a variety of fabrics to achieve garments with different textures and forms of floral elements ^[2]. While most brands opt for cost-effective printing and embroidery techniques using machines, some still choose three-dimensional cutting, manual crafting, and 3D printing to create flowers with enhanced realism and dynamism, resembling the liveliness of real flowers.

2.1. Floral three-dimensional embroidery

The current trend in fabric remanufacturing involves transforming flat fabrics into three-dimensional decorative effects through techniques such as pleating, weaving, and fabric stacking. Traditional embroidery, while providing a semi-three-dimensional visual effect, is often combined with three-dimensional floral embellishments. This combination involves the use of various fabrics and accessories, such as chiffon, feathers, and beads, to create floral shapes. In the 2017 collection of the foreign brand Cong Tri Nguyen, fabrics like cotton, khaki, knits, and PVC were used on a 3D embroidered coat. The digital printing and three-dimensional embroidery techniques created visually striking clusters of flowers, showcasing intricate details. The designer emphasized the decoration on the back of the garment, a significant area for portraying the graceful figure of women and a focal point of the design. The overall white and minimalist style accentuated the unique charm of three-dimensional floral embroidery on the back.

2.2. Floral three-dimensional pleating

In recent years, pleating has been a focal point in fabric remanufacturing design. Pleating involves using folding, stacking, and other techniques to create three-dimensional forms on flat fabrics through repetition and combination ^[3]. Based on the characteristics of pleating, several types can be identified: accordion pleats, tuck pleats, lettuce edges, and creative pleats formed according to design objectives. The distinctive feature of floral elements lies in their layered and regularly arranged petals. Floral three-dimensional pleating twists the fabric to form loose and irregular pleats, creating folded petals through stacking and repetition. This imparts a simple and atmospheric beauty to floral elements in fabric remanufacturing design, distinct from the sophistication of three-dimensional embroidery.

3. Techniques of abstract floral element representation in fabric remanufacturing

The application of floral elements in clothing design often involves presenting them in a realistic and lifelike manner. However, over time, there has been innovative abstract representation of floral elements, allowing this traditional element to have more diverse artistic expressions in the future.

3.1. Form abstraction

The classic form of flowers is the regular arrangement of petals, and abstracting the form of flowers generally involves exaggerating the construction of petals. In the 2020 Spring/Summer Haute Couture collection by Givenchy, vibrant flowers were presented on the runway through clever combinations of pleats, sheer fabrics, and lace. The abstract pleats resembling floral patterns and delicate embroidery details on the hem of the skirt made the haute couture dresses more refined and evocative. One of the standout features of the purple three-dimensional pleated gown is the exaggerated wavy silhouette at the shoulders, representing the ultimate simplification of the overall floral shape. The large amplitude of the pleats forms a graceful opening of the flower. Layered translucent materials drape from the head to the shoulders and waist, with Givenchy's "umbrella" hat evolving into a more graceful petal hat. Under the shroud of petals, the floral dress gains modesty and

mystery, allowing the female form to bloom amidst the petals—a display of elegance, tenderness, and romance exclusive to women.

In the 2021 Spring/Summer collection of the designer brand Robert Wun, the designer continued to draw inspiration from floral design elements. Using stiff denim and leather fabrics with excellent shaping effects, the designer abstractly showcased the arc-shaped visual characteristics of flower petals through clean cutting. By dispersing the abstract forms of petals throughout various parts of the garment, the habitual visual imagination of combining petals to form flowers is weakened. Through form abstraction and deconstruction, the familiar floral elements are rendered unfamiliar. The use of hollowing techniques retains only the form, while the transparency breaks through the conventional sense of substance, presenting a novel experiment.

3.2. Texture abstraction

Texture refers to the surface texture of the material. Texture can be divided into two categories: visual texture and tactile texture. The appropriate application of texture effects can better express the visual effects of the design. Flowers generally consist of a flower core and petals, with the visual texture of flowers primarily being the visually impactful layered and wrapped arrangement of petals. The tactile texture is the soft and smooth delicate touch of petals. The following cases primarily analyze the visual texture aspect. A dress created by the designer of the LAVIATE brand creatively employs pleating in soft and drapery fabrics to create an abstract floral form with a radial pattern, using the distribution of pleat textures to outline the general contours of petals. This kind of visual texture abstraction creatively utilizes the fabric texture effects formed by pleating, naturally leading people to associate the deformation of the fabric with the image of a flower. Givenchy Spring/Summer 2020's three-dimensional pleated gown exhibits modern abstract lines inspired by the texture phenomenon of layered petals, but in a more abstract and simplified manner. Disrupting the regular linear arrangement, the pleats extend from the skirt to the arms and shoulders, with exaggerated curved lines abstractly summarizing the close connection between petals.

4. Principles of aesthetic forms for floral elements

4.1. Repetitive variations

Repetitive variations involve repeatedly adding floral elements, rearranging and combining them in different ways, and then applying them to clothing to create changes. Repetitive variations can be categorized into regular and irregular patterns^[4]. Regular repetitive variations involve the orderly arranging of floral elements in the form of fabric remanufacturing, creating a harmonious visual rhythm. Irregular repetitive variations involve unpredictable changes in the form, size, quantity, and direction of floral elements, resulting in a rich visual and textural effect in fabric remanufacturing, shaping an innovative and unique decorative aesthetic. The decorated skirt belonging to the Bora Aksu Spring/Summer 2022 filled with three-dimensional flowers follows the design rule of a dense upper part, sparse lower part, and larger upper flowers with smaller lower ones, creating a romantic visual beauty and a flowing sense of space as the flowers spiral upwards around the skirt.

4.2. Overlay variations

Overlay variations entail using one or more materials of the same or different textures to create variations in the floral pattern. Floral elements designed with overlay variations alter the flatness of the original visual effect, introducing layers and rich textures formed by fabric overlay, and showcasing a substantial sense of volume. Overlay variations can also be categorized into regular and irregular patterns. For example, the pink pleated gown belonging to the Marchesa Spring/Summer 2012 uses lightweight chiffon to repetitively overlay in a certain regular pattern, giving the fabric a protruding three-dimensional and layered visual effect and rich textural quality.

4.3. Contrast variations

The use of contrast variations in floral elements during fabric remanufacturing is extensive, covering a range of stylistic, color, and technological variations. When applying contrast variations to floral elements, attention should be paid to adhering to the principles of aesthetic forms and aligning with the properties of the fabric. The asymmetrically designed black gown with contrasting floral patterns belonging to the Christian Dior Couture Fall/Winter 2010 has a skirt with an asymmetrical design: the left side features a floral pleat design with a delicate and flowing visual effect using sheer fabric, while the right side has a restrained design with a hibiscus-shaped skirt, creating a vivid contrast between movement and stillness, with creative contrast variations in the design. The short and lively skirt belonging to the Viktor & Rolf Spring/Summer 2015 has an airy A-line silhouette and employs contrasting techniques. One floral element uses two fabric remanufacturing techniques: digital printing and three-dimensional floral decorations complement each other, combining flat and three-dimensional spatial visual effects, as if the flowers have burst through the constraints of the fabric.

5. Conclusion

Floral elements, through the design application of fabric remanufacturing, showcase unique textural forms and three-dimensional expressions on clothing. The exploration of fabric remanufacturing techniques and artistic expressions provides designers with infinite creative inspiration, moving beyond traditional floral designs represented in flat patterns. This paper analyzes the forms and variations of floral elements, exploring the application of figurative floral elements in fabric remanufacturing from the perspectives of three-dimensional embroidery and three-dimensional pleating. By examining specific instances of floral elements in clothing design, it summarizes the application of floral elements in fabric remanufacturing from the perspectives of form abstraction and texture abstraction. The paper further expands on the design methods of floral elements in fabric remanufacturing by summarizing the principles of aesthetic forms, including repetitive variations, overlay variations, and contrast variations. This practical application advances the understanding and utilization of floral elements in fabric remanufacturing design, providing a valuable reference for designers.

Disclosure statement

The authors declare no conflict of interest.

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