



УДК 687.21.016:7.012

## EXPLORING THE DEVELOPMENT PATH OF SHAPING UNDERWEAR DESIGN

WANG Yujuan<sup>1,2,3</sup>, KHYNEVYCH Ruslana<sup>1</sup>

<sup>1</sup> Kyiv National University of Technologies and Design, Kyiv, Ukraine

<sup>2</sup> Shaanxi University of Science & Technology, Xian, People's Republic of China

<sup>3</sup> Xi'an Polytechnic University, Xian, People's Republic of China

**835852935@qq.com, h.ruslana.v@gmail.com**

*This article explores the future development path and direction of Chinese shaping underwear design and strives to realize the intelligent, healthy, fashionable and diversified design of plastic underwear from the perspectives of ergonomics, ecology and aesthetics. The need to adapt underwear to the requirements of modern women due to differences in cultural standards, economic base, aesthetic taste and consumer psychology caused by changes in the needs for purchasing and consuming underwear is substantiated.*

**Key words:** *shaping underwear, design, intelligent, healthy, fashionable, diversified.*

### INTRODUCTION

With the improvement of the economic level, the change of women's consumption concept, the improvement of dressing taste and the presentation of diversified culture, shaping underwear will be according to the different needs of consumers, increasingly towards the lingerie market segmentation; lingerie products such as functional and healthy, fashionable and personalized style will become the new trend of the development of shaping underwear. The development trend of shaping underwear design will also seek the design object solution for the maximum harmony between the system of design object (underwear)--environment (social environment and natural environment)--human[1]. We strive to make the design perfect from the perspectives of ergonomics, ecology and aesthetics, so that the underwear can achieve the new concept of intelligent, healthy, fashionable and diversified development with the basic functions of comfort and shaping.

### PURPOSE

The purpose is to explore the future development path and direction of Chinese shaping underwear design.

### RESULTS AND DISCUSSION

#### 1. Intelligent design of shaping underwear

Based on science and technology and women's values, lifestyle, and dress concept changes, under the support of the human-oriented scientific concept, the new generation of shaping underwear will develop towards a more functional route,



to achieve the intelligence of shaping underwear. This is undoubtedly one of the best manifestations of advocating human services.

The most important performance of smart wearable devices is intelligence and functionality [2]. Taking health monitoring as an example, the most important thing is to accurately monitor all kinds of data on human health. As early as 2005, American Cobin lingerie, known as the world's first smart lingerie, was unveiled in Zhengzhou, China. It can automatically detect the information of women's three circumferences and guide intelligent chips to emit ultra-low-frequency biological waves, women can make their bodies more symmetrical after wearing, showing a concave-convex curve. China's shaping underwear leading brand «Tingmei» has also successfully developed a 'core-moving' intelligent body-shaping underwear that integrates body shaping, fat transfer, fat burning and degreasing. This is the first time to achieve intelligent control, intelligent conduction, intelligent lipolysis, intelligent massage, intelligent adjustment, intelligent shaping and other functions, and its technological content has the world's top level.

In addition, shaping underwear to help monitor the health of the body will also become possible. Recently, U.S. researchers are developing high-tech fabrics made of intelligent underwear, which can monitor the wearer's heartbeat and other physical data in real-time; Germany is researching and developing electronic bras and underwear that can monitor the body's vital signs, and automatically call the emergency ambulance when necessary. Therefore, the high-tech sensing device is 'woven' into the lingerie fibre, providing a solid foundation for the intelligent design of shaping underwear.

## **2. Healthy design of shaping underwear**

Modern women not only hope to use underwear to shape the body curve, but also hope that underwear can help promote the recovery of body function, to achieve the goal.

Chinese brand lingerie enterprise «Odifen», launched a health concept underwear--nano negative ion bra, which is made of negative ion fabric extracted and concentrated by nanotechnology. The bra is safe and healthy to wear, especially since the number of negative ions produced by 'negative ion fibre' is very high [3], which has a good effect on health and stress relief. Of course, there are also new textile technologies that weave fibres with different medicinal functions into underwear materials. Women promote drug penetration by breathing undulating movements during wearing, which can prevent certain diseases and achieve health care. For example, the «Aloe» bra introduced by the underwear industry is to disperse the capsules containing aloe into a paste, add a mix, and press it into the fabric fibre through composite processing to form a material. The miniature storage device of this kind of microcapsule can make its ingredients avoid evaporation, oxidation, contamination and other physical and chemical reactions, and only after rubbing or kneading to make the capsule rupture will the function be released and absorbed by the body, this medicine has the function of nourishing the skin and promoting oxidation, etc.



With the continuous innovation of fabric technology, fibre materials with special functions will be effectively used in the design of corrective underwear, thus accelerating the realization of the functionalization and health of underwear.

### **3. Fashionable design of shaping underwear**

With the presentation of diversified culture and the change in people's consumption concept, the fashion characteristics of underwear as a form of dress have long been included in the choice of people's consumption. However, due to the pressure of market competition, the cloning crisis of the underwear market under the influence of the homogenization of the clothing market has seriously affected the healthy development of the underwear market. How to better realize the visual and conceptual innovation of shaping underwear has become the primary problem faced by underwear enterprises.

French LDB brand marketing manager Jerome Garcino once said: «Underwear is always an incredible fantasy item, completely out of its narrow area. Today, we see underwear overexposed, women choose their underwear according to their personality, appearance or hide, deducing ambiguous» [4]. It can be seen that the first task of lingerie fashion is to complete the increasingly varied fashion matching, to reflect the taste of dressing from the inside out, and in this way to achieve the purpose of packaging and finishing the external image, and ultimately construct the complete connotation of «clothing».

In addition, the popularity of lingerie look is also one of the factors that underwear tends to be fashionable and changeable. In recent years, lingerie companies to seize the market opportunity to win greater profits, are taking advantage of the launch of a new series of shape-shifting underwear, whether in the style design, cutting style, or colour matching are quite layered, unique to the sexy and fashion elements integrated into the shaping underwear. Designers through the choice of fabric patterns, decorative embellishments of auxiliary materials, and the comprehensive use of texture materials, so that the appearance of shaping underwear in the complex in a strong sense of layering and three-dimensional sense, from the structure of the breakthrough of the limits of the plane, and finally lead the underwear to fashion.

Shaping underwear not only assists the outer contour modelling of clothing, but also has the timeliness of fashion popularity. Its design innovation will also change with the popularity of outerwear, and together with the popularity of outerwear, it plays a role in «deciphering fashion in social behavior» [4].

### **4. Diversified design of shaping underwear**

The actual significance of the shaping underwear is far beyond the functional scope of covering the body to protect the cold, it is developing along the path of practical significance--aesthetic significance--cultural significance, and its value has risen from a mere commodity to a social value, life value, cultural value height. With the diversification of social culture, the design style of shaping underwear also tends to diversify, because women also aspire to individuality, romance, elegance, sexiness and charm in their hearts. For example, the elegant style that emphasizes exquisite feeling, pursues strict and elegant, quiet and subtle, with high harmony as the main feature; the avant-garde style that emphasizes new and different, and



makes a breakthrough exploration of classic aesthetic standards; the romantic style that emphasizes breaking the rigid dogma and pursues fantasy and dramatic effects; the idyllic style that emphasizes returning to nature and pursues returning to the basics; the national style that borrows national elements and vaguely expresses the subtlety and mystery of the Eastern way, etc.

The diversification of shaping underwear style is a significant feature of modern underwear design. At the same time, it is also conducive to further meeting the changes in consumer demand and purchase point of view caused by the differences in artistic accomplishment, cultural level, economic foundation, aesthetic taste and consumer psychology of modern women.

### **CONCLUSIONS**

With the development of society and the continuous change in people's lifestyle, consumption consciousness and behaviour psychology, modern women's awareness and requirements of dressing are also increasing, and the perspective has changed from the initial demand for outer clothing to the joint concern for inner and outer clothing. From the modern aesthetic point of view and concept, the new beauty indicators of women are not only limited to the face but also the slim and graceful curves of the body has become the "obsessive" pursuit of many modern women. The combination of culture, health, intelligence and fashion will undoubtedly bring new opportunities to the shape-shifting underwear consumer market, and will inevitably overturn our understanding of underwear.

### **REFERENCES**

1. Yanzu Li. Introduction to art design. *Hubei Fine Arts Press*. 2009.
2. Hui Qi, Jianjun Lu, Zhiwen Lu. Status and development trend of intelligent wearable devices for women's health. *Knitting Industry*. 2020.
3. Jin Li. Research on sports comfort of sports bras with different thickness at different speeds. *Suzhou University*. 2017.
4. Leon G. Schiffman. Consumer Behavior. *Tsinghua University press*. 2015.

**ВАН Ю., ХИНЕВИЧ Р.**

### **ВИВЧЕННЯ ШЛЯХУ РОЗВИТКУ ФОРМУВАННЯ ДИЗАЙНУ СПІДНЬОЇ БІЛИЗНИ**

*Ця стаття досліджує шлях майбутнього розвитку та напрямок китайського дизайну нижньої білизни, що створює форму і прагне реалізувати розумний, здоровий, модний та різноманітний дизайн пластикової білизни з точки зору ергономіки, екології та естетики. Обґрунтовано необхідність адаптації білизни до вимог сучасних жінок через відмінності в культурних стандартах, економічній базі, естетичному смаку та споживчій психології, спричиненій змінами потреб у покупці та споживанні нижньої білизни.*

**Ключові слова:** *формуюча білизна, дизайн, розумний, здоровий, модний, різноманітний.*