

Research on the Creativity and Application Value of Glass Art

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Abstract: Glass has a long history. According to the latest archaeological and historical research results of glass, the birthplace of glass must be the ancient Egyptian method with a long history of Middle East or Nile civilization. Today, human beings step into the door of the information society. Great changes have taken place in human ideology and social structure. In this rapidly changing world, the development of glass art products is an opportunity and challenge. At present, the research on glass art at home and abroad mainly focuses on glass material manufacturing process, art form, art works and glass artists, and the research in related fields is basically limited in the field of material technology and art products. Therefore, this paper attempts to make a systematic and detailed analysis and Research on the application value of glass art products from the perspective of industrial revolution and industry.

1. Introduction

Glass has a long history and the exact location of its invention has not been determined. According to the latest archaeological and historical research results of glass, the birthplace of glass should be ancient Egypt in the Middle East or the Nile basin with a long history of civilization in the two river basin. Legend has it that the early glass was invented by the ancient Venetian merchants by accident: once, their merchant ships docked at the mouth of the Syrian river. Glass has the special characteristics of light transmission, prospect, solid insulation and heat preservation[1]. With the continuous improvement of people's living preferences, glass products are widely used in daily life. Now, the partition of glass door and window and the decoration of glass are very popular in home decoration. Glass landscape art is also widely used in landscape design. China glass art market has a bright future and many business opportunities. To this end, some economists predict that the new era of glass economy and art has come, but China's glass art industry is in the primary stage of development. In the past decades in Europe and the United States, the current development foundation of glass art market, under the guidance of Professor Zheng Jianqi, the relevant projects and related research of tutors, and the research of application value of glass art, as the research topic of graduation thesis, has been decided.

2. The Development of Glass Art

Compared with the brilliant history of ceramic development, the development of China's glass is not as long as that of pottery, and a considerable part of the glass manufacturing technology comes from the West Persia and Rome. According to archaeological data, China's earliest glass products appeared in the late spring and Autumn period[2]. The glass beads and laser glass pieces unearthed in Henan and Hubei belong to the late spring and Autumn period. During the Warring States period, the number of glass products increased, adding many new varieties such as glass wall, glass sticker, glass sword decoration, glass cicada, etc. In the west of Han Dynasty, a large number of glasses were imported from the West Roman and Persian countries, and the quantity and variety of glass products were increasing. It is worth noting that the Western Han Dynasty has begun to manufacture two glass earcups and glass products similar to glass plates unearthed in the Han Tombs in Mancheng, Hebei Province. Nian cup is a typical container form in Han Dynasty[3]. These glass products belong to lead barium glass. The manufacturing method is the same as that of

the glass goblet or glass tipper hook produced at that time, and the casting method is used.

In the past three thousand years, the development history of Chinese traditional glass art is irregular, often in the form of decoration, props or some functions. In traditional Chinese culture, glass art has always occupied a non mainstream position. The reasons must be closely related to the fact that they are not really popular[4]. In terms of materials, the Chinese glass before the northern and Southern Dynasties was mainly fragile, heat-resistant and inconvenient for daily use. After the northern and Southern Dynasties, China introduced the West soda lime glass, and developed the high lead and alkaline glass based on the lead barium glass. The price is expensive, and most of them are luxury goods for wealthy families. From the point of view of process analysis, it is very difficult for glass to be used on ceramics in the early stage of technical treatment. Its application value is not as good as that of ceramics, which hinders its promotion and application[5]. Therefore, the development of Chinese traditional glass is far less than other arts and crafts such as ceramics and jadeite. However, from a long history of development, with the development of materials and technology, shape, color and decoration are constantly changing. Like the traditional culture of other aborigines, Chinese traditional glass art has strong national characteristics and unique historical imprint, which is an indispensable part of Chinese civilization.

3. Material Characteristics and Processing Technology of Glass Materials

3.1. Material Characteristics of Glass

All kinds of materials show personality through unique properties. When glass is used as a design material, it has a series of clear and valuable characteristics, which constitute a unique expression language.



Figure 1 Glass art

3.2. Transparency

In order to illustrate the transparency of glass materials, working in water and air, we imitate the production of glass art. The transparency of glass is very characteristic. It is a special and precious text that other materials cannot be consistent[6]. Pure and perfect transparent visual effect not only conveys clean, careful and bright beauty, but also conveys pure, frank and selfless character. Transparent materials are characterized by imagination, which can be used for metaphor and imagination, and can also form an atmosphere and feeling that other materials cannot imitate. Glass is a kind of cold resistant and hard material with transparent and refractile light resistant appearance. The glass is heavy and strong, because at first it can't be seen because of transparency. It is not only the character of glass and mechanical industrial society, but also the natural, simple, warm and comfortable appearance. The feeling of transparent material is the charm of glass. And that gives the glass plenty of expression space. There are various changes in the transparency of glass, including transparent, translucent, and even opaque colors. Transparent, colorless, transparent, very pure and transparent, full of transparent foam impurities.

3.3. Refraction and Reflectance

Another beauty of glass material is light, because it's right, it's refraction and reflection[7]. Transparent, compact and smooth materials have good transmittance, and can have various reactions such as transmission, refraction, reflection, absorption and so on. Light is of great significance to glass art. Light, glass has soul. Glass materials have wonderful luster under the action of light. The hard and smooth surface has strong reflective ability. High quality optical glass has refractive characteristics. After the correct calculation, the diamond method can be used to set the regular glass body to reflect the dazzling light. After firing, the naturally condensed surface is round and glossy. Glass with different thickness and color has more beautiful color density change under light transmission[8]. Light transmission, refraction and reflection reflect the charm of glass's unique materials. Due to the participation of light, the volume and texture of glass can sometimes make people feel happy. The skillful use or close of light's variability or contrast, or simplicity or fantasy, are all important glass arts.

4. Technological Innovation of China's Contemporary Decorative Art Glass

In China, the use of shape crafts is also very hard and unique. The choice of craftsmen is multifaceted. This can be derived from Chinese tradition or borrowed from the West. In addition, designers can make materials according to the unexpected combination of design effects of materials or crafts.

Traditional Chinese glass crafts mainly include disassembly, nesting and interior painting. Among them, dewaxing casting process is inherited from bronze manufacturing. In the Qing Dynasty, nesting and internal painting flourished. In Han Dynasty, China invented dewaxing casting technology. Since then, this process has disappeared and become a regret in the history of Chinese skills. After years of painstaking research, he restored this special glass wax casting method, so that this traditional glass technology can continue[9]. Then, hundreds of Chinese glass studios began to use dewaxing casting. This traditional glass process will continue. Since then, hundreds of Chinese glass artists have begun to make glass art. This has played a very important role in the protection and inheritance of traditional crafts. Moreover, as the second batch of intangible cultural heritage protection, the state has listed the glass launching technology. It can be seen that it is important for the continuation of traditional glass technology and provides hope for the development of modern decorative art glass in China.



Figure 2 Glass art in the context of oriental culture

5. Reference of Western Technology

The technology of luminescent glass in the west is more advanced than that in China. Glass technology in China often depends on bronze and jadeite techniques. After modern times, the form of economic globalization has further promoted the introduction of Western technology. Of course, this situation promotes the development of Chinese glass crafts from another aspect. The glass technology research institute has applied this process to develop new decorative ideas for

microcrystalline glass to study the artistic influence of printing and inkjet on the surface of microcrystalline glass. When the pattern is printed on the microcrystalline glass, it will appear on the ordinary flat glass. In order to better display the artistry of printed matter, we launched it. The texture of glass ceramics is hard, which can completely imitate the texture of natural marble[10]. The invention of digital ink-jet process extends the glass ceramic decoration method, and can better display the charm of materials in the field of architectural decoration. Ink jet printing has bright color and high production efficiency. Most importantly, the ink used in this technology is pollution-free and will not easily disappear in the oxidation state. Therefore, the glass ink-jet printing technology is very suitable for the production of architectural decorative glass. The process of printing on glass not only opens up a new path for the design of architectural decorative glass, but also destroys the modern architectural design culture.

6. Conclusion

In the development of glass art, the development of Chinese and foreign glass art as the main line of research, and with time to summarize. The development history of glass art in China and foreign countries. Through the study of the overall development of glass art, the development of science and technology has been separated, the hand has been extended, the change of human life style, and the future development of glass art has pointed out the direction and is clear. In terms of the material characteristics and processing technology of glass art, the material characteristics and processing technology of glass art are carried out. Classification abstract is the basis of analyzing the application value of glass art products. Only when we have a deep understanding and grasp of the material characteristics can we have confidence in the design process. At the same time, excellent skills are to achieve the premise and ensure the best effect of the product. It can be said that design and materials and skills are inseparable. Now the focus of glass art product research is art, excluding technology from the door. From the perspective of innovation and design, please use scientific and rigorous methods to investigate this problem. Therefore, I think this paper is based on the concept of science and design as the starting point to analyze and solve problems.

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