



THREE-DIMENSIONAL SURFACE DESIGN INSPIRED BY TRADITIONAL XIAMEN BEAD
EMBROIDERY



By
Miss Xia WENXIU

A Thesis Submitted in Partial Fulfillment of the Requirements
for Master of Fine Arts Design Arts (International Program)

Silpakorn University

Academic Year 2023

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BEAD EMBROIDERY



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Requirements for the Master of Fine Arts

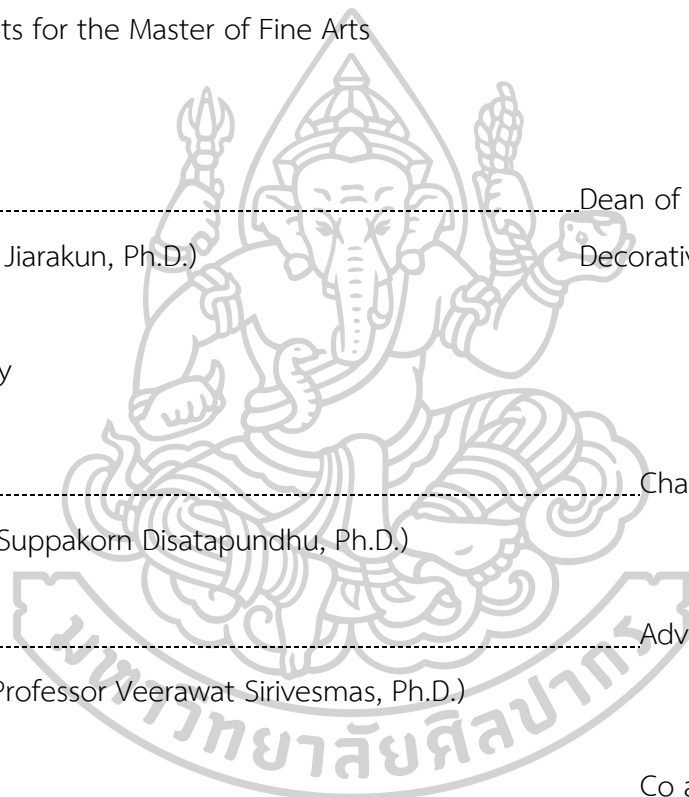
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Miss Xia WENXIU : THREE-DIMENSIONAL SUFACE DESIGN INSPIRED BY TRADITIONAL XIAMEN BEAD EMBROIDERY Thesis advisor : Assistant Professor Veerawat Sirivesmas, Ph.D.

Xiamen bead embroidery is a unique traditional handicraft in the southern Fujian region of China and is part of China's national intangible cultural heritage. Its exquisite skills and cultural background lead to innovative design opportunities and challenges. As the traditional Xiamen bead embroidery technique is a core element and three-dimensional craftsmanship is an important aspect of the inherited technique, this study explores the possibility of applying three-dimensional surface design in the field of wearable accessory design. Through field research, case studies, literature review and other methods, firstly, the history, culture, and techniques of bead embroidery in Xiamen are understood. Second, design experiments will be used to analyse how Xiamen beadwork techniques can be combined with mixed media. Contemporary bead embroidery was selected to show the design concepts and potential of traditional Xiamen bead embroidery in the field of 3D surface design. The combination of traditional and modern craftsmanship will be explored to combine traditional cultural elements with modern fashion.

Finally, the results of this study will fully excavate and extract the three-dimensional capabilities of Xiamen bead embroidery, synthesize modern aesthetic design and mixed-media materials, bring more expressions into the modern product design of Xiamen bead embroidery, improve the design aesthetics of local handicrafts, and provide practical experience in the integration of traditional handicrafts with modern design.

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Since my enrolment in 2023, I have experienced many difficulties, but even more growth and precipitation, from the time I was ignorant and yearning for a passion to the time I wrote this thesis. From the selection of the topic to this point, although there are still too many shortcomings in the research, the end of postgraduate studies, but I have gained a lot from these experiences.

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Thank you for China's intangible cultural heritage of Minnan bead embroidery heritage teachers to help me with my research, Xiamen Zhengren Bead Embroidery Workshop of Ms. Yang Yuxin, Quanzhou bead embroidery inheritor of the teacher Chen

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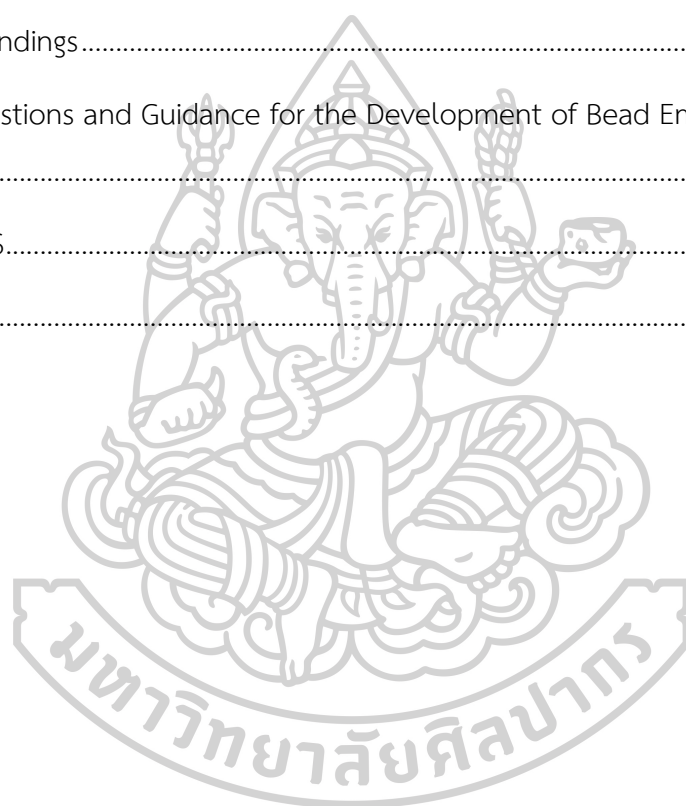
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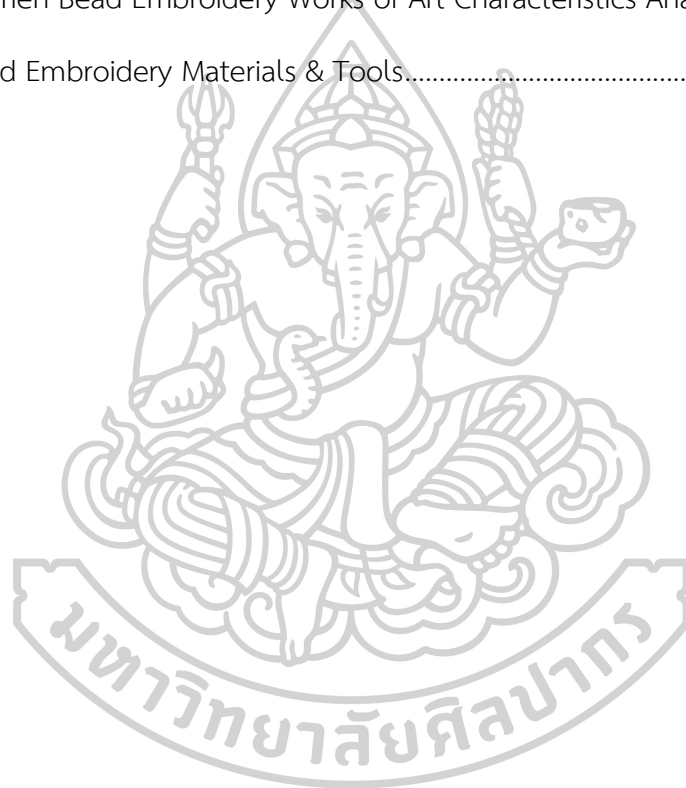
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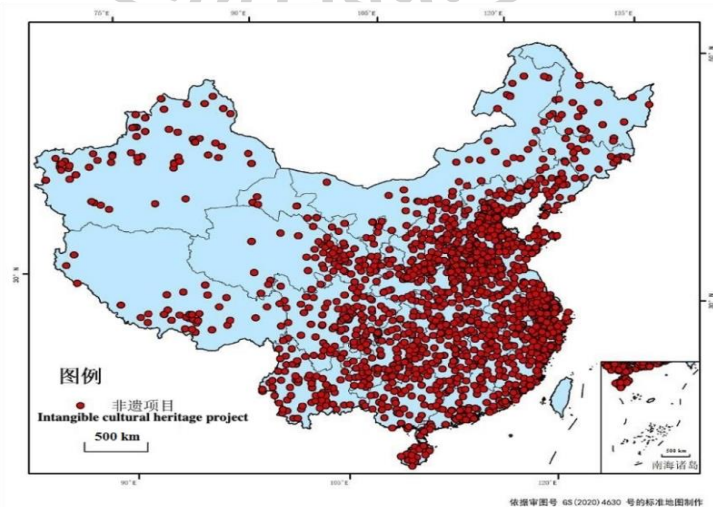


CHAPTER 1

INTRODUCTION AND BACKGROUND

1.1 The Current Situation

Traditional handicrafts are an important part of intangible cultural heritage. Xiamen bead embroidery, a representative traditional handicraft of the Minnan region in Fujian Province, China, was inscribed on the Fifth National List of Intangible Cultural Heritage (Item No. VII-128) on May 24, 2021, approved by the State Council of the People's Republic of China with state attention and policy support. Xiamen bead embroidery is an Intangible Cultural Heritage (ICH) of China that brilliantly combines the best of modern Chinese and Western embroidery techniques and artistic styles.(Cai et al., 2024) The category to which Xiamen bead embroidery belongs is that of traditional fine arts, and traditional handicrafts are an important part of the ICH. Some studies on handicrafts and ICH show that the national ICH inventory, which was established in 2008 after France ratified the UNESCO Convention for the Safeguarding of the Intangible Cultural Heritage (2003), is maintained by the Ministry of Culture (Directorate General of Cultural Heritage) and documents nearly 25 percent of the inventory of traditional handicrafts. China acceded to the Convention in 2004. After a 15-year journey, China has had the first number of World Heritage Sites in the world since 2019 (Guo,2022).



Figures 1 Spatial Distribution of National Intangible Cultural Heritage in China

Xiamen bead embroidery originated in the early 1920s and has a history of more than a century. It was developed on the basis of China's four famous embroideries, which combine the advantages and techniques of traditional embroidery and are characterised by brilliant colours and a strong three-dimensionality. Xiamen pearl embroidery is one of the typical representations of the maritime culture of Minnan in Fujian Province, China, and many of the designs are inspired by the unique maritime culture of the Minnan region (Xinyan, 2022).

With the rapid development of society and the influence of globalisation, traditional Chinese culture is facing challenges and changes today. Despite its long history and rich cultural connotations, the traditional craft of bead embroidery in Xiamen faces many challenges in modern society. With the rapid development of modern society and people's changing aesthetic ideas, there is a certain discrepancy between the design of traditional bead embroidery and the market demand, and the production of traditional bead embroidery requires a lot of time and labour. Besides, it is difficult for people to concentrate on learning a traditional handicraft in their diversified and fast-paced daily life, and the public rarely has the opportunity to come into contact with and understand Xiamen bead embroidery. The traditional skills of Xiamen bead embroidery need to be learnt and practised over a long period of time, and the younger generation lacks sufficient enthusiasm and opportunities to adopt and develop these skills, leading to the decline of the traditional bead embroidery crafts (Liang, 2023).

In the meantime, with the rapid development of industrialisation, especially with the development and innovation of science and technology and the changes in people's living environment and material conditions, more and more automated machines have replaced manual processing, and the impact of changing market demand and industrialised and efficient production has also led to the traditional bead embroidery craft being under pressure to survive. Moreover, the traditional handicraft is not like a historical relic that can be independently preserved and intuitively felt, and its overwhelming trend makes it harder for people to carry on both heritage and development. As the market demand is not as stable as that of the modern industry, the heirs of bead embroidery in Xiamen are becoming fewer

and fewer every year, and there is a danger that the craftsmanship will be gradually lost. Therefore, the heritage and protection of Xiamen bead embroidery has become an urgent necessity (Sun, 2023).

Against this background, innovation in Xiamen bead embroidery has become the key to traditional cultural heritage. By combining traditional bead embroidery techniques with modern technology and material innovation, it is possible to create richer and more diverse works with a modern sense, attracting the attention and participation of more young people and thus promoting the development of bead embroidery crafts in Xiamen. By combining traditional Xiamen bead embroidery with 3D surface design and modern aesthetics, design works with traditional cultural characteristics and modern fashion sense can be created, breathing new life into the traditional craft. At present, three-dimensional surface design is in a stage of rapid development and innovation, and its applications extend to a variety of fields such as art design, fashion decoration, public space decoration and so on. The combination of traditional Xiamen bead embroidery and 3D surface design can open up broader markets and applications for traditional handicrafts and better adapt them to the needs and aesthetic concepts of modern society. The choice of this topic for research is also due to the love of traditional culture and the exploration of contemporary design (Sun, 2023).

At the same time, after a year of literature collection and research on Xiamen bead embroidery, we found that there is a lack of systematic research on Xiamen bead embroidery, and there is no in-depth research and extensive practise in the field of three-dimensional surface design inspired by traditional Xiamen bead embroidery. Traditional cultural elements have attracted much attention in modern design, and three-dimensional surface design has received great attention as a new form of artistic expression (Adamsdóttir, 2017). Traditional Xiamen bead embroidery, with its unique three-dimensional techniques and exquisite embroidery skills, provides a rich design language and creative inspiration for three-dimensional surface design. However, there is a research gap in the application of traditional Xiamen bead embroidery in the field of 3D surface design, which has not yet been thoroughly researched and systematically explored.

The unique three-dimensional expression of Xiamen bead embroidery in its current form offers a wealth of possibilities in the field of design, but is still an under-explored area. Therefore, this study will explore the use of Xiamen pearl embroidery in 3D surface design, inspired by its techniques and artistic characteristics, with the aim of introducing new design concepts and expressions into the intangible cultural heritage of the southern Fujian region of China, while contributing to the development of the field of 3D surface design. It is not only about the respect and heritage of traditional culture, but also about the innovation and exploration of contemporary design.

1.2 Research Objectives

1.2.1 To learn the knowledge and handcrafting skills of traditional Xiamen bead embroidery in contemporary art practise, to understand the culture of Xiamen bead embroidery, to explore the artistic characteristics and techniques of traditional Xiamen bead embroidery and its significance to cultural heritage.

1.2.2 To extract skill of Xiamen bead embroidery and create 3D bead embroidery 3D surface design.

1.2.3 To propose through contemporary aesthetic design, the new value of Xiamen bead embroidery is put forward to arouse the interest of the young generation

1.3 Research Hypothesis

1.3.1 The application of the three-dimensional surface design of traditional Xiamen bead embroidery harbours potential for innovation. It is believed that the combination of the three-dimensional techniques of traditional Xiamen bead embroidery and modern three-dimensional surface design has the potential to create novel and unique design works, enrich the expression of traditional crafts, and bring new contemporary meaning and vitality to traditional crafts. They enhance the aesthetic value of local handicraft culture in modern times and promote the cultural heritage of bead embroidery in Xiamen.

1.3.2 The three-dimensional bead embroidery design integrating mixed media materials can achieve more diverse and three-dimensional effects. It is believed that the use of mixed materials such as glass bead embroidery, hand crochet, cotton thread, plant leather cut, etc., combined with traditional bead embroidery techniques can expand the expression of the design and enhance the texture and layering of the work.

1.3.3 Three-dimensional bead embroidery with plant inspiration as the design source has unique aesthetic value and contagious power. Taking medicinal plants as design inspiration, such as black seed grass, leaf ear primrose and other plants with tenacious vitality, adds deeper cultural connotation and emotional expression to the design, triggers the viewer's resonance, and strengthens the artistic contagiousness of the work.

1.4 Research Field

This research focuses on the application of Xiamen bead embroidery techniques in contemporary aesthetic design. The aim of this thesis is to explore the heritage of Xiamen bead embroidery, which is declining year by year and has not yet been expressed in contemporary creative design, so it needs to be updated and iterated in order to be accepted and passed on in today's society. The research covers the history, techniques, aesthetics and current state of transmission and development in contemporary society in relation to the intangible cultural heritage Xiamen bead embroidery traditional craft.

It is a unique bead embroidery technique in the southern Fujian region of China. Through a deeper understanding of the characteristics and charm of Xiamen traditional bead embroidery, richer and more specific materials and inspirations can be obtained for the subsequent 3D surface design. This paper will explore the relationship between Xiamen bead embroidery and modern innovative design. In this area, traditional Xiamen bead embroidery techniques are used for design experiments that focus on the integration of Xiamen bead embroidery techniques into modern 3D surface design. The study explores how the Xiamen bead embroidery technique can be used in both traditional and modern ways. It explores

the need to find a balance between the preservation and transmission of local culture and traditional techniques.

This study is divided into three parts:

(1) Traditional Xiamen Bead Embroidery Craft

Explore the origin and development history of bead embroidery craft in Xiamen and understand its status and role in society. Gain an in-depth understanding of traditional Xiamen bead embroidery techniques, process, threads used, stitches and other characteristics and skills. Explore the cultural significance, symbolism and artistic value of Xiamen bead embroidery and analyse its relationship with local customs and folklore. Examine the current situation of Xiamen bead embroidery heritage, analyse the difficulties and challenges, and discuss how to promote the innovative development and heritage of the traditional craft (Chen, 2016).

Bead embroidery technology heritage representative area:

- Xiamen Zhengren Bead Embroidery Technique Transmission Institute
- Quanzhou Bead Embroidery Training Centre

(2) Three-dimensional surface design in bead embroidery

Introduction to basic knowledge of three-dimensional surface design, such as fundamental concepts, principles and methods. Introduce the application of three-dimensional techniques of bead embroidery in the design process. Describe in detail the three-dimensional bead embroidery production process, conceptual design and other aspects of the steps and methods. Analyse the application of three-dimensional bead embroidery design in various fields, including fashion design, interior decoration, installation art, etc., and analyse its significance and development trend in today's society.

(3) Integration and innovation of traditional bead embroidery and three-dimensional surface design

Based on the characteristics and advantages of traditional bead embroidery in Xiamen and three-dimensional design, explore the integration points and innovation potential of the two. Through actual design projects or cases, try to integrate traditional bead embroidery into three-dimensional surface design and explore contemporary design concepts and expression methods. Investigate the expression

and effect of traditional bead embroidery in three-dimensional space and explore how to use three-dimensional design technology to break through the traditional flat constraints and create more three-dimensional and vivid design works. To reflect on how to promote the innovation and heritage of traditional culture through the combination of traditional bead embroidery and three-dimensional design, and bring new meaning and vitality to traditional crafts in the new era.

1.5 Research Process

The research process is conducted in the following steps to explore the possibilities of 3D surface design inspired by traditional Xiamen bead embroidery:

1.5.1 Literature review and data collection

Review the literature on traditional Xiamen bead embroidery techniques to understand the history, characteristics and techniques of traditional Xiamen bead embroidery crafts, as well as the theoretical basis and application of 3D surface design. Collect relevant cases and data to understand the current status and development trend of related research.

1.5.2 Field research and case analysis

Based on the literature review, field research was conducted, and the bead embroidery in southern Fujian was divided into two areas: Quanzhou bead embroidery and Xiamen bead embroidery. Data were collected through notes, interviews, audio recordings, observations, photographs and video recordings. To understand the current state of the heritage of traditional bead embroidery craft and practise cases. At the same time, we analyse the application cases of 3D surface design in other fields to get practical experiences and references for this study.

Part I: Quanzhou Bead Embroidery Transmission Centre

(No. 30 Xiaogan Lane, Liucheng District, Quanzhou City, Fujian Province, China)

Research on Minnan bead embroidery representative Fujian provincial intangible cultural heritage project representative heir Chen Kelin, visit the Quanzhou Intangible Cultural Heritage Museum and Community, Quanzhou bead embroidery heir Chen Kelin was interviewed. He talked about the history and techniques of

"Minnan bead embroidery" from the past to the present. He explored traditional bead embroidery techniques and local wisdom.

Part II: Xiamen Zhengren Bead Embroidery Technique Training Centre

(3F, Luchao Academy of Fine Arts, Gulangyu Island, Siming District, Xiamen City, Fujian Province, China)

Visit, research and interview Xie Liyu, the representative inheritor of Xiamen bead embroidery under the Intangible Cultural Heritage Project of Fujian Province, to learn more about the history, culture and techniques of Xiamen bead embroidery and to collect photographic materials of works related to Xiamen bead embroidery. Collect and explore traditional and modern bead embroidery craft techniques. Xiamen bead embroidery production bead embroidery craft materials and tools to understand the production process and techniques for a detailed introduction.

1.5.3 Data Analysis

The theoretical framework of the study is built on the basis of the analysis of the results of the literature review and the field research. Define the aims and problems of the study, formulate research hypotheses, determine the research methods and steps and give directions for further research.

1.5.4 Design method exploration

Explore the design methods and technical means suitable for fusing traditional bead embroidery from 2D to 3D surfaces. Consider how to combine traditional artisanry and modern technology and how to use mixed media materials for design.

1.5.5 Design Practice

Under the guidance of the theoretical framework and design methodology, conduct a specific design practise and creative process. Select appropriate bead embroidery techniques and 3D design tools to begin the creation and production of design work. Develop new perspectives for bead embroidery product series (wearable accessory design) through design experimentation, inspiration transformation, case studies on innovative methods of bead embroidery product design (patterns, colours, materials, etc.).

1.5.6 Conclusion

Through the study of design examples of contemporary artists creating traditional handicrafts, we explore the way of integrating traditional Xiamen bead embroidery and 3D surface design, inject new vitality and contemporary meaning into traditional handicrafts, open up the space for the development of traditional handicrafts, and enhance the value of Xiamen bead embroidery.

1.6. Research Methodology

This research is a practise-based study, a combination of contemporary craft research and practical design. The focus of this research is to learn the knowledge of traditional bead embroidery in Xiamen and the craft skills. The research focuses on the three-dimensional technical elements of Xiamen bead embroidery and the application of design experimentation methods to create contemporary bead embroidery crafts, resulting in three-dimensionally visualised Xiamen bead embroidery products. This research seeks to work with a variety of mixed-media materials and different craft techniques and explores the use of traditional handmade bead embroidery techniques to incorporate them into experiments with different material combinations. Experimental methods, inspiration, transformation and case studies were used to create contemporary product designs for bead embroidery and to develop a design process for wearable accessories with bead embroidery.

Research tools for data collection included documentation, interviews, observation, photography and experimentation. Data collection methods included interviews and fieldwork. Participants included local bead embroidery heirs and other stakeholders. The research covers the knowledge and practical experience of techniques, materials, patterns and colours in traditional handicrafts, especially the three-dimensional techniques of Xiamen bead embroidery, which are closely related to the practise of designing three-dimensional surfaces of Xiamen bead embroidery under contemporary aesthetics in this study.

Case study of contemporary aesthetics under the bead embroidery artists, modern product application cases to summarise the innovative design elements,

analysis of techniques, colour characteristics and material selection to extract the characteristics of three-dimensional techniques, to explore the Xiamen bead embroidery in the three-dimensional surface design of the experiments, all design stages involved in bead embroidery techniques from 2D to 3D design experiments in various aspects, has shown that Xiamen bead embroidery in combination with the concept of contemporary aesthetics of the design of the research process. The research process has shown the integration of Xiamen bead embroidery with contemporary aesthetic design concepts.

1.7 Research Outcome

The expected benefits are as follows.

1.7.1 The knowledge gained from this research can effectively combine traditional bead embroidery techniques with modern 3D design concepts to present unique artistic styles and innovative aesthetic concepts. It enhances the social recognition of bead embroidery in Xiamen and gives the traditional craft a new form of expression.

1.7.2 This study explores a variety of technical and craft methods suitable for the integration of traditional bead embroidery and 3D design. By using mixed media materials, combining craft techniques and other forms to achieve more varied and three-dimensional effects, it adds contemporary design elements and possibilities to traditional craft.

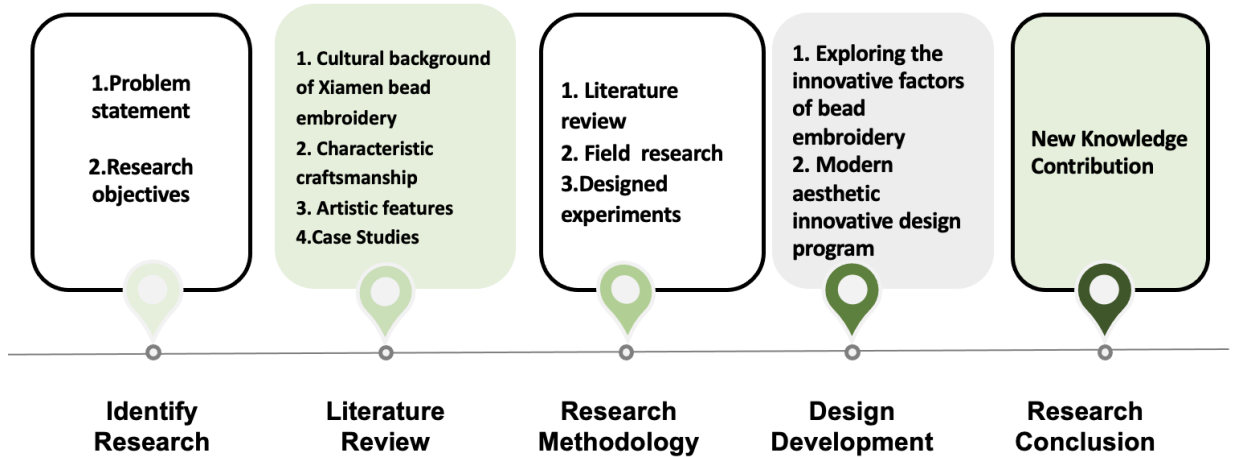
1.7.3 In the contemporary practise of Xiamen bead embroidery, the research of bead embroidery in three-dimensional surface design through artistic practise that integrates traditional craftsmanship and contemporary culture aims to develop new perspectives for modern Xiamen bead embroidery design. Based on the results of this research, it will inspire local artisans and designers to create contemporary design inspirations by combining traditional craft culture and contemporary design.

1.8 RQ RO RM ROP

RESEARCH QUESTIONS	RESEARCH OBJECTIVES	RESEARCH METHODOLOGY	RESEARCH OUTPUTS
1.What are the characteristics of traditional Xiamen bead embroidery?	1.To learning the traditional Xiamen bead embroidery culture 2.To understanding the cultural heritage of Xiamen bead embroidery	1. Literature review (library materials, literature) 2. Case study 3. Observation	1.About Xiamen bead embroidery data 2.Xiamen bead embroidery historical and cultural background and traditional technology
1.Why inherit Xiamen bead embroidery? 2.How to improve the competitiveness of Xiamen bead embroidery products through contemporary design?	1. To clarify the importance of Xiamen bead embroidery 2. To experimentation to derive key elements of contemporary 3DI design for bead embroidery	1. Field research, interviews, questionnaires 2. Design of experiments	To obtain data critical to the transformation of Xiamen bead embroidery into contemporary bead embroidery 3D designs.
1.How to realize the contemporary of Xiamen bead embroidery products?	1.To design 3D bead embroidery surface design into contemporary aesthetic design 2.To promote new Perspectives on Promoting Xiamen's Traditional Bead Embroidery Based on Contemporary Aesthetics	1. Design implementation 2. Design Development	Design Xiamen bead embroidery series products (Jewelry, Wearable Accessory Designs.)

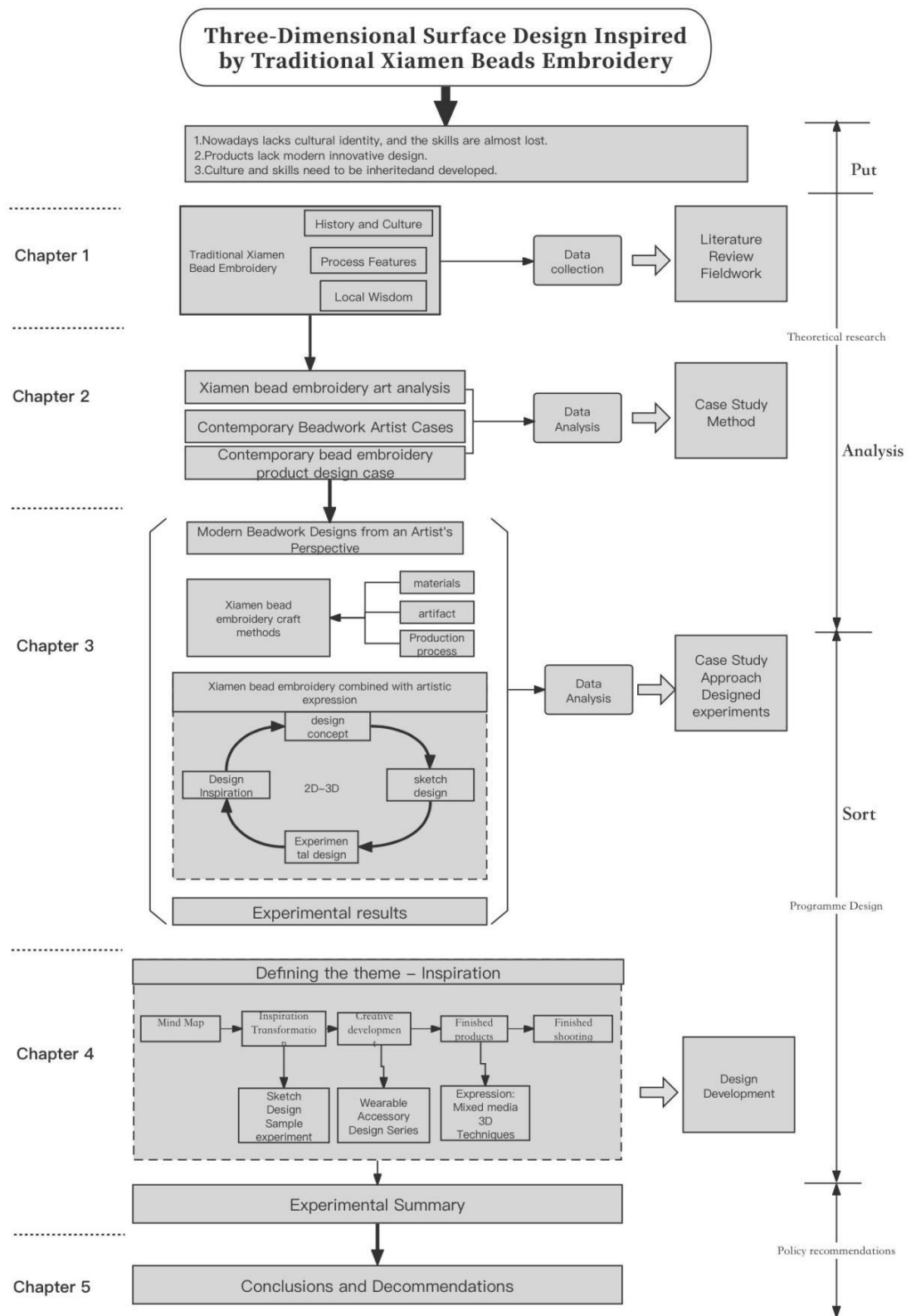
Figures 2 RQ RO RM ROP

1.9 Research Framework



Figures 3 Research Framework

1.10 Research Outline



Figures 4 Roadmap for the Study Outline

CHAPTER 2

LITERATURE REVIEW AND RELATED STUDIES

As one of China's intangible cultural treasures, Xiamen bead embroidery is rich in historical and cultural connotations and unique handicraft techniques, which are of great significance and value to the contemporary design field. Firstly, we introduce the reasons why we chose "Xiamen bead embroidery" as the research object and analyse it in terms of its origin, historical development, craft characteristics and other aspects. It also describes the background of traditional handicraft culture and the need for development and innovation nowadays. This chapter aims to systematically explore the integration of bead embroidery and 3D surface design in Xiamen by comprehensively analysing and sorting the relevant literature.

Using the case study method in combination with actual cases, the existing works on the integration of bead embroidery and 3D surface design are analysed and evaluated, and their innovation points, design ideas, production processes and practical application effects are examined. In-depth study of the theoretical foundations, technical means and application perspectives and other key issues. Through the compilation and analysis of academic literature, we will comprehensively understand the current situation, development trend and future challenges and opportunities of research on the integration of bead embroidery and 3D surface design in Xiamen, so as to provide theoretical support and methodological guidance for further research.

2.1 Cultural background of Xiamen bead embroidery

2.1.1 Origin of Xiamen bead embroidery

Bead embroidery originated in the Tang Dynasty and experienced its heyday in the Ming and Qing Dynasties. It was developed from traditional Chinese embroidery and combines the advantages of the four famous embroideries with a very sophisticated presentation method. The material of ancient bead embroidery is expensive and luxurious and consists of pearls, tinted pearls, jadeite and other

precious stones. In ancient times, embroidery was called beadwork and was mainly intended for the royal family and the nobility. Bead embroidery is one of the traditional Chinese embroidery categories (Xinyan, 2022). Bead embroidery in China is performed on special textiles according to a specific pattern, using different stitches to fix all kinds of beaded material embroidered on the textile. Bead embroidery differs from traditional Chinese embroidery art in that in bead embroidery, the pattern is not expressed by different coloured silk threads, but beads and pieces are used to express the pattern and colours (Chenghuan, 2022).

Traditional bead embroidery is usually made from pearl, coral, or vermilion. In the late Qing Dynasty, under the influence of the Industrial Revolution, coloured glass beads, electric sequins and other new materials were used and accepted by people in various regions. Especially in Fujian, Guangdong and other places, a series of regional characteristics of bead embroidery developed, including bead embroidery in Xiamen. According to research, glass bead embroidery began in the Qing Dynasty during the Guangxu Period (1875-1908). At that time, Chinese people returned to China from Luzon (now the Philippines) and brought back slippers with glass bead embroidery, which were circulated in the Chinese province of Fujian. Later, craftsmen in the city of Zhangzhou in Fujian province used imported glass beads to make bead-embroidered slippers, which were distributed as far away as Xiamen (Li & Xie, 2023).



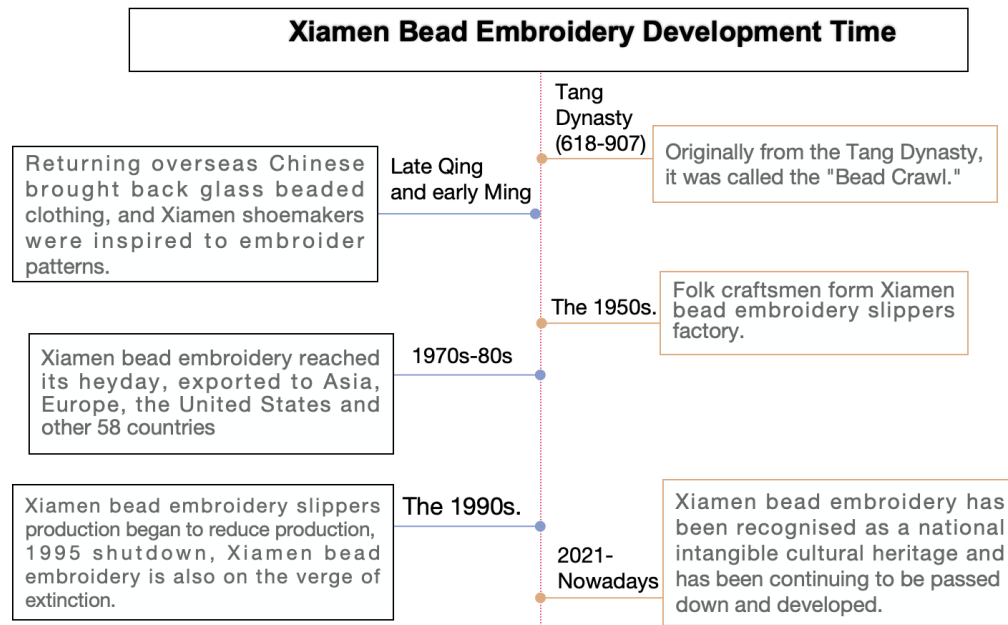
Figures 5 General location of Xiamen, Fujian Province

Source: Sustainability 2023, 15(8),6469; <https://doi.org/10.3390/su15086469>

2.1.2 History of bead embroidery in Xiamen

This study used field and documentary research to summarise the historical development of Xiamen. The data came from interviews with the heir, Xie Liyu, to

Xiamen bead embroidery and was compiled from audio recordings and photographs. The historical development of bead embroidery in Xiamen can be divided into the following stages, as shown in the figure below.



Figures 6 Xiamen Bead Embroidery History Development Timeline Overview

(1) Development Period: Early 1920s

Around 1920, Xiamen Live Source imported small glass beads for the production of bead embroidery. The techniques of bead embroidery in Xiamen have been passed down from generation to generation, and the traditional bead embroidery craftsmen are renowned for their exquisite skills. The bead embroidery of Xiamen is so unique in local history and artistic style that it has become a symbol of Fujian Province during a certain period of cultural change study. Xiamen bead embroidery was first developed on the southeast coast of China, with Xiamen as the centre (Li & Xie, 2023).

When some Filipino Chinese returned to their homeland in the early 1920s, they brought costumes decorated with glass beads from abroad. The folk shoemakers of Xiamen were inspired by them and bought various kinds of glass beads and electro-optical films through the Maritime Silk Road, they combined the beads and bead films with the traditional folk auspicious motifs of the South Fujian region, applying various traditional embroidery techniques such as bead embroidery,

diagonal flat embroidery, vertical embroidery and stacked piece embroidery to make them by hand. The embroideries are applied to the fabrics by hand, forming patterns with strong regional styles and different shapes and colours, which have a good artistic effect. At this time, the embroidery is mainly used on shoes and other straps.

(2) The period of prosperity: 1940-1990

In the 1950s, folk artists got together and founded the Xiamen Bead Embroidery Slippers Factory, which produced bead embroidered wall plaques, bead embroidered bags and bead embroidered slippers. The southern Fujian region also created its own brand of bead embroidered slippers, "Crystal Brand", imported velvet, glass beads and other materials from abroad, and employed local traditional craftsmen to make all kinds of slippers, and Xiamen almost became the centre of the city. The beaded slippers are not only sold domestically, but also exported to Southeast Asia as foreign exchange earning products via the Maritime Silk Road, which has contributed to foreign exchange earnings and established a new era of Xiamen as a centre of international trade.

In the past, bead embroidery in Xiamen was mainly presented in slippers as carriers, bead embroidery slippers were mainly exported overseas, they were not common in ordinary people's homes, only at the daughter's wedding, there were bead embroidery slippers as bride price. Nowadays, the Xunpu and Hui'an women in Quanzhou and the Nyonya in Southeast Asia still adhere to this traditional wedding custom, which is also a testimony to the spread and inheritance of Xiamen bead embroidery overseas via the Silk Road (Liu Lian, 2022).

With the continuous improvement of material and cultural living standards, people have higher requirements and expectations for bead embroidery, and in the 1970s and 1980s, bead embroidery was overlaid and innovated by artisans, and bead embroidery was applied to garments, bags, Hats, brooches, curtains and other carriers, and the bead embroidery products were rich and diverse, which were loved by domestic and foreign people, and all kinds of bead embroidery products were exported to more than 50 countries or regions, including Asia, Europe and the United States, etc. At that time, Xiamen bead towing factory seized the opportunity to develop the bead embroidery industry in Xiamen (Liang, 2023).

During this period, the bead embroidery products were ranked first in the national evaluation of the same industry several times, and the bead embroidery slippers at the first Beijing International Expo in 1989, the "Crystal" pearl slippers produced by Xiamen Bead Embroidery Slippers Factory were favoured by merchants at home and abroad for their novel and unique modelling, exquisite craftsmanship and unique style, and were awarded the Gold Medal (Xinyan, 2022).



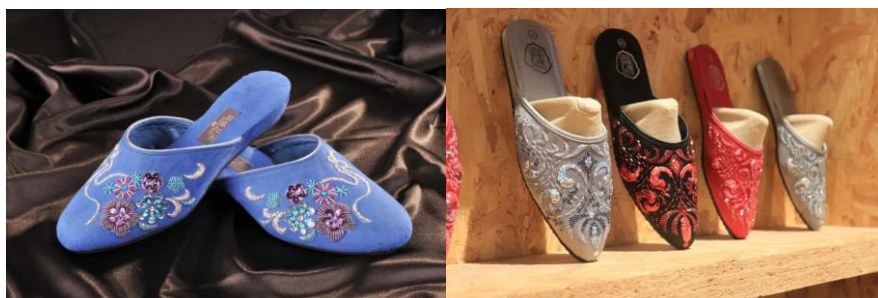
Figures 7 Commercial poster for “Xiamen Pearl Slipper Specialized Cooperative”

Source : Xiamen Zhengren Bead Embroidery Workshop



Figures 8 The Xiamen Bead Slipper Cooperative Society of Producers

Source : Xiamen Zhengren Bead Embroidery Workshop



Figures 9 Xiamen Bead Embroidered Slippers , Xiamen Yangzhen Cultural Arts Co.

Source : Xiamen Zhengren Bead Embroidery Workshop

(3) Decline: 1980-1995

In the early 1980s, the wave of opening up came to Xiamen, the Xiamen bead embroidery slippers factory also followed the trend of the times, bead embroidery slippers sold all over the world. In the early 1990s, Xiamen Bead Embroidery Slippers Factory gradually disappeared from the market after the economic reform. With the changes in the market and the influence of technology, Xiamen Bead Embroidery Slippers Factory, which had been brilliant for a while, also stopped production and closed down, and the bead embroidery craft was once on the verge of extinction (Xinyan;, 2022). After the advent of modernisation, the demand for wooden slippers as the carrier of Xiamen bead embroidery craft gradually declined, which is also one of the social reasons for the decline of Xiamen bead embroidery. The former glory did not last forever. With the changes in the planned economy and the market economy, the Xiamen bead embroidery slippers factory began to reduce production and finally shut down in 1995. Bead embroidery in Xiamen slowly disappeared from the public eye and was on the verge of extinction.

(4) Recovery period: 2007 - Today

As part of the nationwide promotion of traditional cultural industries, Xiamen's bead embroidery attracted the attention of society again in 2007 and was included in the Fujian Provincial Intangible Cultural Heritage List. Through the joint efforts of the fifth and sixth generation of inheritors gradually recovered the vitality to pass on the dying skills, Xiamen bead embroidery inheritor Xie Liyu called together more than 10 years ago in Xiamen bead embroidery slippers factory workers began the bead embroidery recovery work(Xinyan;, 2022).

Bags, clothing, wall charts and other forms of bead embroidery have now become decorations of daily life and fashionable ornaments, so that Xiamen's bead embroidery has found its way into the homes of ordinary people. As Xie Liyu says, it can be said that beadwork is Xiamen's resounding "city card" both in the past and today. Although it is not possible to restore the past glory of bead embroidery, it is imbued with the love and reluctance of the art's custodians.



Figures 10 Xie Liyu, representative inheritor, Xiamen Bead Embroidery Workshop

Source : Xiamen Zhengren Bead Embroidery Workshop



Figures 11 Xiamen Bead Embroidery wall Painting

Source :Xiamen Zhengren Bead Embroidery Workshop

2.1.3 The significance of Xiamen bead embroidery in cultural heritage

Xiamen bead embroidery is one of the traditional Chinese handicrafts of great importance to cultural heritage (Liang, 2023). Xiamen bead embroidery has a long history and is rich in historical and cultural connotations. Through the handicraft skills passed down from generation to generation, it has inherited the unique cultural essence of the Xiamen region and demonstrated the wisdom of the local people. As one of the characteristic local industries, the development of bead embroidery can promote the development of related local handicraft industries and promote the employment and income of relevant stakeholders in the local community. In short, bead embroidery in Xiamen plays an important role in cultural heritage and is not

only a legacy of outstanding traditional Chinese culture, but also promotes the prosperity of the local economy and the spread of culture and art.

2.2 Craft Characteristics of Xiamen Bead Embroidery

The technique of Xiamen bead embroidery is rich and diverse, using the advantages and techniques of traditional Chinese embroidery (Liang, 2023). Through different embroidery techniques, the embroidery can be presented with a variety of artistic effects. Therefore, this part of the content introduces the craft characteristics of Xiamen bead embroidery, taking the basic techniques and special techniques of Xiamen bead embroidery as the research object. Its decorative patterns, colour features and characteristic techniques deeply reflect the rich folk cultural connotation of southern Fujian, which has been passed down to the present day (Xinyan, 2022). It is a fusion of folklore and diversity, highlighting the folk characteristics of the southern Fujian generation and is one of the representatives of folk weaving and embroidery art.

2.2.1 The basic technique of Xiamen bead embroidery craft

After visiting the bead embroidery training centre, we learned that the craft techniques of Xiamen bead embroidery are vary according to the different materials of the beads. There are various embroidery methods for the beads, which are summarised into 13 categories of basic techniques of Xiamen bead embroidery, namely single bead arrangement, multiple overlay, interlocking needle reinforcement, single back bead threading, double back bead threading, bead flat needle, braided string stitching, loose bead messy stitching, bead piece stitching, piece stacking bead , continuous stacking piece , three-dimensional filling and edge stitching method (Li & Xie, 2023).

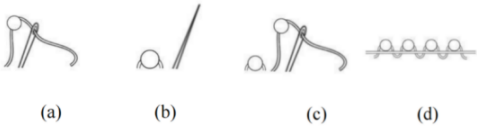
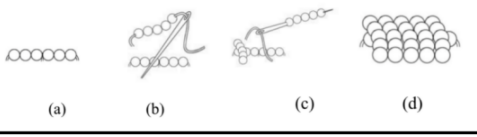
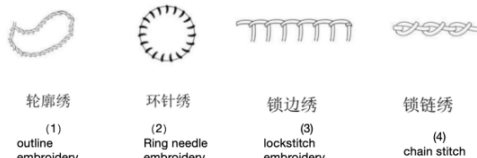
Xiamen Bead Embroidery Basic Techniques		
Name (of a thing)	Stitch Schematic	Technique
1. Single Bead Arrangement	 <p>(a) (b) (c) (d)</p>	Start the needle, thread the needle through 1 bead, drop the needle close to the right side of the bead and leave the designed proper distance to exit the needle, repeat this operation, finally tighten the thread and close the needle at the back.
2. Three-dimensional filling	 <p>(a) (b) (c) (d)</p>	A layer of beads is embroidered with a certain number of beads as a base, and then beads are embroidered on top of this according to the design, thus achieving a three-dimensional effect.
3. Pegging around the edges	 <p>轮廓绣 (1) outline embroidery 环针绣 (2) Ring needle embroidery 锁边绣 (3) lockstitch embroidery 锁链绣 (4) chain stitch</p>	Generally applied to lockstitch the edges of the pattern, the Use outline embroidery, loop stitching, lockstitch, and chain stitch to secure edges.

Table 1 Xiamen Bead Embroidery Basic Technique Method Schematic Diagram

2.2.2 Xiamen bead embroidery craft characteristics

The characteristic techniques of Xiamen bead embroidery are based on the basic techniques influenced by Chaozhou embroidery and Quanzhou Jincang embroidery and can be categorised into pad embroidery, laminated embroidery and vertical bead embroidery according to the form and characteristics of the techniques.

(1) Underlay Embroidery

To achieve a beautiful effect when embroidering, part of the pattern should create a three-dimensional effect, and then the padded embroidery will appear. According to the different materials of the cushion, it can be divided into the irrigation embroidery and the bead embroidery (as shown in the picture), which is generally used to highlight the main part of the picture, such as text, beads, etc.

It is generally used to emphasise the main part of the picture, such as the text, the faces of the figures and the body parts of dragons, unicorns and other auspicious animals.

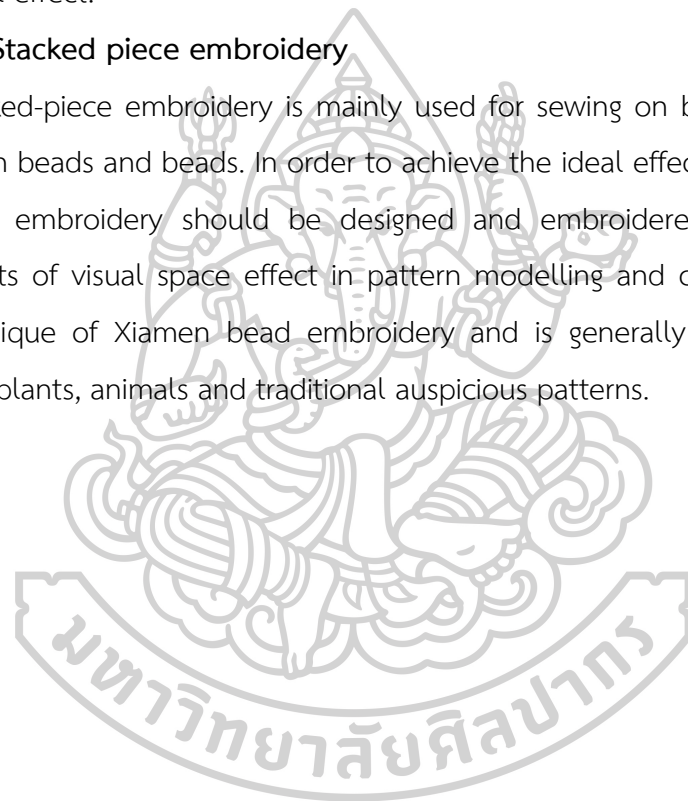
The special embroidery method of filling embroidery, that is, before the preparation of bead embroidery, a plastic film or cloth is first sewn on the base cloth to make a hole, and then cotton and other materials are used for filling, and the amount of cotton determines the final shape of the pattern, after the filling of the

hole is completed, it is sewn, and then the beads are covered on the top to complete the process of filling embroidery, so that the pattern has a three-dimensional fullness (Chenghuan, 2022).

The special stitch of bead cushion embroidery, that is, firstly, the satin stitch is used to embroider a certain number of beads on the pattern, and then the beads are further embroidered according to the design of the pattern on the basis of the beads on the basis of the diagonal satin embroidery to achieve the three-dimensional effect.

(2) Stacked piece embroidery

Stacked-piece embroidery is mainly used for sewing on beads, which can be layered with beads and beads. In order to achieve the ideal effect in embroidery, the design and embroidery should be designed and embroidered according to the requirements of visual space effect in pattern modelling and colouring. This is the main technique of Xiamen bead embroidery and is generally used to embroider characters, plants, animals and traditional auspicious patterns.



Characteristic Techniques of Xiamen Bead Embroidery Craft		
Type	Picture	Illustration of Technique
Concave folding sheet		
String of Beads		
Lamellar Bead		
Vertical Bead Embroidery		<div style="text-align: center;"> (a) </div> <div style="text-align: center;"> (b) </div>

Table 2 Characteristic Techniques of Bead Embroidery Craft

(3) Vertical bead embroidery

Vertical bead embroidery is mainly used for the local design of patterns, such as stamens and several types of pattern decoration, etc. The materials used are generally glass beads, tubular beads, pearls and so on. Start with the needle on the back of the fabric, thread the needle into 2-5 beads and then into the top bead, finally select the top bead, pass the needle through all the remaining beads, pass it through the starting point, tighten it on the back, and then the embroidery will be in an upright shape after completion.

2.3 Analysis of Xiamen Bead Embroidery Art

The artistic characteristics of Xiamen's bead embroidery include exquisite handcraft, diverse styles, rich colours and cultural heritage. This bead embroidery is not only an art form, but also an embodiment of cultural tradition, reflecting the historical culture and wisdom of southern Fujian.

2.3.1 Craftsmanship

Xiamen bead embroidery is famous for its exquisite embroidery skills. By skilfully managing hand embroidery needles, the beadworkers apply various kinds of bead embroidery or pieces of beads on the fabric to form patterns and designs with three-dimensional relief effects. The delicate, fine and smooth lines of bead embroidery testify to the high level of artisanry and rich imagination of the artisans.

2.3.2 Use of Colours

In Xiamen bead embroidery, significant importance is attached to the use of colours and their coordination. The colours are rich and varied and the works are bright and glittering. The colours are mainly saturated colours, and the colours that are common in Xiamen bead embroidery are red, yellow, blue, purple, green and so on. The assorted colour combinations reflect the artist's understanding of colour and expressiveness. The colour is also selected according to the style of the theme, and religious themes of colour are often closely related to religious myths, the selected colours have a representative character of emotion, cultural significance. As shown in the colour, colour gradients are used to match (Li & Xie, 2023).



Figures 12 Xiamen bead Bead Embroidery Gradient Techniques

Source : Xiamen Zhengren Bead Embroidery Workshop

2.3.3 Pattern Design

Xiamen bead embroidery to discover a variety of embroidery styles, including flowers, birds and animals, landscapes, people and abstract patterns. Each style has its own unique design style and reflects the culture and natural environment of the Xiamen region. The motifs of Xiamen bead embroidery are mostly taken from the elements of nature such as flowers, birds and insects, figures, abstract patterns, traditional myths and legends, etc., and have strong regional characteristics and cultural connotations (Xinyan, 2022). The design of the patterns is not only about the smoothness of the lines and the degree of processing, but also about the three-dimensional expression and liveliness of the pattern. The changing theme of the pattern is closely related to the different regions of southern Fujian. For example, the bead embroidery of Xiamen and the bead embroidery of Quanzhou, which belong to the same region of southern Fujian, have unique styles, and the theme of the pattern focuses on the angle of difference (Liang, 2023).

Part I: Quanzhou Bead Embroidery Transmission Centre

Research to understand the study of Minnan bead embroidery representative of Fujian Province intangible cultural heritage projects representative heritage Chen Kelin, visited the Quanzhou Intangible Cultural Heritage Museum and the community, Quanzhou bead embroidery heritage Chen Kelin was interviewed. He talked about the history and techniques of "Minnan bead embroidery" from the past to the present. He explored the traditional bead embroidery techniques and local wisdom.

The works are rich and diverse, and the techniques are rigorous and delicate. The representative works include the "Divine Dragon" series, the series of Guanyin, Guan Gong and other figures, and the series of flowers, birds and fish, etc., and the themes are closely related to folklore and Buddhist themes. The motifs are closely related to folklore and Buddhist themes. The products of bead embroidery are also used in religious and cultural activities in Fujian and Taiwan, such as table skirts for rituals, door colours, hanging scrolls, hanging screens, etc. Embroidery and bead embroidery are usually used. They are usually embroidered with both embroidery and bead embroidery, using cotton and gold and silver threads on red brocade fabric. In the folklore of South Fujian, China, they are common auspicious items.



Figures 13 Fieldwork

Intangible Cultural Heritage of Bead Embroidery Chen Keren



Figures 14 Quanzhou bead embroidery work

Source : Xiamen Zhengren Bead Embroidery Workshop



Figures 15 Quanzhou Bead Embroidery Field Survey

Part II: Xiamen Zhengren Bead Embroidery Technique Training Centre

Visit, research and interview Xie Liyu, the representative heir of Xiamen bead embroidery under the Fujian Provincial Intangible Cultural Heritage Project, to learn more about the history, culture and techniques of Xiamen bead embroidery and collect photographic materials of bead embroidery in Xiamen. Collect and explore traditional and modern bead embroidery craft techniques. The production of materials and tools for bead embroidery in Xiamen and the understanding of the production process and techniques will be introduced in detail.



Figures 16 Xiamen Bead Embroidery Field Survey



Figures 17 Xiamen bead embroidery work

Source : Xiamen Zhengren Bead Embroidery Workshop

(1) Three-dimensional effect

Xiamen bead embroidery craft pays attention to the expression of the three-dimensional sense of embroidery through various embroidery methods and layering,

so that the embroidery has an obvious three-dimensional effect with a relief-like three-dimensional visual sense. This is also a unique embroidery technique that distinguishes it from other embroidery categories. The three-dimensional effect of bead embroidery technology enhances the artistic expression and visual impact of bead embroidery works (Chenghuan, 2022).

(2) Material selection

The materials used in the production of Xiamen bead embroidery mainly include embroidery thread, embroidery fabric, needles, beads, backing, embroidery aids and so on. The embroidery materials are no longer limited to traditional textile fabrics, but also include artificial leather, leather, iron and other various materials. Glass beads are generally used, with various shapes resembling small grains of rice, and shapes such as round, oval, rectangular, hexagonal, etc.; the shapes of beads are dominated by traditional beads, with the original bead shape mainly having smooth convex surfaces, and flaky beads with rounded concave-convex surfaces and angular flake beads, and the types of shaped beads and patterned beads are used to a lesser extent. The choice of materials and the artistic expression style determine the appropriate materials, and the choice of materials determines the final expression of the work, and the artistic effect is also different. For example, for a romantic wedding dress, you can choose imported glass beads with high lustre and shaped sequins (Sindhu & Jahan, 2018). For a rustic, natural garden style, you can choose natural beads such as shell beads, wooden beads, rock beads and so on.

(3) Historical and cultural connotation

The bead embroidery of Xiamen is rich in historical and cultural connotations and represents the cultural essence of the Xiamen region and traditional skills. Its patterns and motifs reflect local folk customs and cultural traditions and are of great historical significance and artistic value. Xiamen bead embroidery works often reflect local culture, religion and traditional values. Some pieces may contain elements of religious motifs, mythological stories or local legends to promote cultural traditions (Chen, 2016). Some Xiamen bead embroidery works are used for religious ceremonies, festivals and special occasions. The works have different meanings depending on their use.

(4) Modern innovations

Although Xiamen bead embroidery has a long history and tradition, if it wants to spread in the modern society and be accepted and loved by more people, it still needs to continuously add new design concepts and innovative elements, combined with modern fashion aesthetics, so as to let the traditional bead embroidery craft take on a new lease of life and vitality, and to show its own space for development and potential in the field of contemporary art (Giltsoff, 1971).

Type	Picture	Stitch Schematic	Scope of Use
Cross-stitch Embroidery		<p>(a)</p> <p>(b)</p> <p>(c)</p>	Suitable for large three-dimensional modeling patterns, such as dragon body, dragon horn
Cushion Embroidery		<p>(a)</p> <p>(b)</p> <p>(c)</p> <p>(d)</p>	Suitable for small three-dimensional modeling, such as dragon claws, sideburns, etc. Plant form pattern fine towards

Table 3 Schematic Diagram of Traditional Bead Embroidery Techniques




Modeling Character	Motifs	Illustrative
Art Character		<p>Extremely decorative, modeling mostly realistic, traditional style, bead embroidery works with a strong sense of volume, by light refraction has a relief three-dimensional effect</p>
Colors		<p>The commonly used colors are red, yellow, blue and green, which are highly saturated, vibrant and contrasting.</p>
(Art) Composition		<p>Pattern composition is generally flexible layout, common composition for the center type composition, symmetrical scattered composition, etc.. The form of composition for a separate type, suitable for the type, even type pattern is mainly.</p>

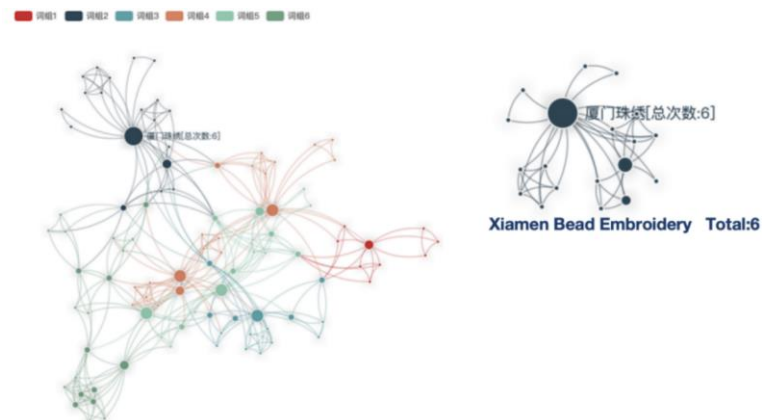
Table 4 Xiamen Bead Embroidery Works of Art Characteristics Analysis

2.4 Research on the Integration of Bead Embroidery and Three-dimensional Surface Design

2.4.1 Current status of related research

In the preparatory work phase, a large amount of related literature was accessed through books, vernacular records and the CNKI literature database and other means. For example, in the CNKI database of China Knowledge Network, we searched for "bead embroidery", "bead embroidery technology", we searched for "bead embroidery", "bead embroidery craft", "bead embroidery "three-dimensional craft", "Xiamen bead embroidery" and other terms, and found 364 articles on "bead embroidery", "bead embroidery craft", "bead embroidery craft" and "Xiamen bead embroidery". 364 items, 147 items from "bead embroidery craft", 16 items from "bead embroidery three-dimensional craft", 10 items from "three-dimensional bead embroidery craft" and 10 items from "three-dimensional bead embroidery craft", "3-D bead embroidery design" 6 items, "Xiamen bead embroidery" 7 items, "Xiamen bead embroidery craft" 3 items, "Xiamen bead embroidery 3-D design" 0 items. "

As can be seen from the data, there is very little literature on Xiamen bead embroidery, and the existing research mainly focuses on the study of the historical origins of Xiamen bead embroidery, the aesthetic analysis of the characteristics and the use of innovative design in bead embroidery, and there is very little literature on the techniques of Xiamen bead embroidery as a subject of research. At home and abroad, research on the three-dimensional surface design of bead embroidery has been studied and has made some progress. China's three-dimensional bead embroidery design now mainly focuses on the innovative realisation of traditional bead embroidery techniques and the innovative use of the three-dimensional design field. Searching the literature of China Knowledge Network, 26 references were found under the keyword "three-dimensional bead embroidery".



Figures 18 Keyword Co-occurrence Network Analysis for "3D Bead Embroidery"

A review of the literature reveals that on the following two aspects:

(1) Relevant research on Xiamen Bead Embroidery

In recent years, Xiamen bead embroidery technology as the main research object of literature is relatively small, the scope of research is mainly focused on Chinese traditional bead embroidery, and in the literature that can be searched, the bead embroidery technology is mostly scattered in the bead embroidery technology production process of the chapters, are mainly text-based introduction, will rarely appear in the bead embroidery technology illustration and step-by-step detailed explanation.

Liu Lian's "Research on the Aesthetic Characteristics of Xiamen Bead Embroidered Slippers", for example, systematically analyses the shape, pattern and colour of Xiamen bead embroidered slippers, in-depth investigation of their aesthetic characteristics, and on the basis of showing the unique artistic charm of bead embroidered slippers, promotes the inheritance and development of Xiamen bead embroidery under the new era of the Hai Si culture (Xinyan, 2022). "Exploring the Mutual Enhancement between Art Higher Education and Intangible Cultural Heritage in China: A Case Study of Xiamen Bead Embroidery Course in Xiamen University of Art and Design, Fuzhou University" by Qing Li Zhao focuses on the possibility of presenting the current situation of intangible cultural heritage protection in China from the perspective of art higher education (Li & Xie, 2023).

(2) Relevant Studies on 3D Bead Embroidery Designs

Wang Hanbing's "Research on the Application of Bead Embroidery Craft in Modern Chinese Clothing Design" is a preliminary study on how modern bead embroidery is reconstructed with a variety of materials and fabrics to present Chinese clothing in the combination of bead embroidery and mixed techniques (WanghanBin, 2023). Yuan Zhihai's "Design and Application of Computerised Embroidery Machine Bead Embroidery System" analyses the current situation and technology of computerised bead embroidery at home and abroad, and proposes a scheme for a computerised bead embroidery machine for computerised embroidery research, analyses and designs its main structure and related theories (Zhihai, 2020). Pan Tong's "Research on the Use of Bead Embroidery Technology in China's Contemporary Custom-made Clothing" conducts relevant research on three-dimensional bead embroidery. Modern bead embroidery is given a rich form of expression through the lock stitch, button thread, nail embellishment and other "bead" plus "embroidery" stitching method derives a rich form of expression, the overall expression of traditional bead embroidery, flat bead embroidery, bead embroidery, bead embroidery and so on (Pan, 2019).

The general trend is moving from traditional bead embroidery and flat bead embroidery to overlaid bead embroidery, inlaid bead embroidery, embossed bead embroidery and other more three-dimensional forms and the complexity of the process. The technique of bead embroidery conveys a rich and colourful form of beauty through the composition of material proportions, decorative patterns, handcrafted stitches and other forms. Zhang Junmei's "Research on the Application of Innovative Design of Bead Embroidery Art in Modern Dresses" focuses on modern dresses, summarises and analyses the expression of bead embroidery on dresses, the use of straps, innovative methods, the secondary reconstruction of dress fabrics and the decorative nature of clothing (Liang, 2023).

In reading the papers on bead embroidery, we have learnt that the state of research on domestic bead embroidery is mainly in the following directions: style, dress, pattern, the combination with other crafts and other aspects of the bead embroidery process. A large part of the research data in the picture is not clear, even

the category of bead material is difficult to identify, sewing technology, bead embroidery three-dimensional technology has no reference, can only stay in the existing concepts, cannot be three-dimensional bead embroidery technology to create a rich layer and texture deep understanding (Chowhound, 2017).

2.5 Case Study of contemporary Bead Embroidery Artists

By analysing the works and creative methods of contemporary bead embroidery artists through case studies, we can gain an insight into the current development trend and innovation direction of bead embroidery art. Studying the successful cases of contemporary bead embroidery artists can inspire designers' creative ideas and methods and provide new design inspirations and creative opportunities. Case studies can help to understand the technical exploration and innovation of contemporary bead embroidery artists and provide designers with technical references (Nazer & Mohammed, 2018).

In the case study method, representative and influential contemporary bead embroidery artists are selected as research subjects, including their works, creative concepts, technical methods and other aspects of the case. Collect the artist's personal profile, introduction of their work, creative background, etc., as well as relevant comments and evaluations. Comparative analysis of the cases, including comparison of artistic styles, themes, technical features, etc., to find out their commonalities and characteristics. Combined with the results of the case analysis, the creative characteristics and development trends of contemporary bead embroidery artists are summarised, and the revelations and lessons are distilled to provide designers with references and guidance for their creative practice (Xinyan, 2022).

Artists use their infinite creativity to create a breathtaking world of bead embroidery. They skilfully interweave colourful beads with delicate threads and needles to create a fantastic and beautiful space. Whether it is the exotic plant kingdom or the mysterious sea creatures, each piece is a testament to their unrivalled mastery. Experience the encounter between the fantastic and the marvellous in this realm of handcrafted artists (Sindhu & Jahan, 2018). The artists

open the door to the realm of the fantastic and allow our imagination to unfold, healing and nourishing our hearts.

2.5.1 Amy Gross

Amy Gross, a fibre artist from the USA, uses the warm subtropical climate and colourful natural landscapes to create stunning hand-embroidered and beaded sculptures. Her works represent a magical microcosm in which the natural world merges with her inner world. Through her unique creativity, she takes on the role of a collaborator with nature and creates a fantastic new world by bringing insects, bacteria, trees and spores to life in artistic form. She creates breathtaking hand embroideries and bead sculptures. Her works represent a magical microcosm in which the natural world merges with her inner world. Through her unique creativity, she takes on the role of a collaborator with nature and creates a fantastic new world by bringing insects, bacteria, trees and spores to life in the form of art.



Figures 19 Installation by Amy Gross

Source : <https://www.thisiscolossal.com>

Amy Gross creates hand embroidered and beaded fibre sculptures that contain pixelated interpretations of the natural world. Although they reflect a natural symbiotic relationship, their structures are fictional in colour and composition. There are no materials to be found in nature. Her work is made from handmade materials sold in craft shops, such as yarn, beads, thread and paper, among other items.

Amy Gross explains: 'I have never used anything living in my work. I only use synthetic materials - they mimic the living but do not wither or die, it is a very human desire to have a say in a turbulent, uncontrollable world of change.'

2.5.2 Clémentine Brandibas

Clémentine Brandibas is a French embroidery artist who combines textiles and embroidery. Reinventing embroidery as an expressive and poetic medium, Brandibas develops a range of delicate techniques: from the painterly use of coloured fabrics to the creative fine needlework of the embroidery itself. The artist draws her inspiration from natural fabrics.

The artist draws inspiration from nature, often imagining vast and extreme landscapes such as glacial pools, tidal estuaries, coral reefs and sunken atolls. Deep within the textured surface of each work is a sense of dreamlike parallel worlds where distant universes and hidden microcosms coexist. Deep within the textured surface of each work is the sense of dreamlike parallel worlds in which distant universes and hidden microcosms coexist.



Figures 20 Clémentine Brandibas Interior works

Source : <https://www.artelier.com>

2.5.3 Emily

Emily creates abstract embroidery hoops in her home studio in Manchester. Her embroidery work began with an album of photographs of coastal adventures and organic tidal structures. Rocks, crustaceans and seaweed covered in pink and yellow

lichen are typical of her photographs. Emily then printed these textures onto fabric and embellished them with beads and the occasional shell.

Emily's beautiful hoop embroideries are in high demand. Since starting Salt Stitches, Emily has over 70,000 followers on Instagram and an international following of collectors. As we know from her work on Instagram, she loves watercolour painting and sketching as well as embroidery. She is always trying to become more experimental and create works using her favourite techniques.



Figures 21 Abstract mixed media embroidery hoop work by Emily Designer

Source : Designer <https://thefiberstudio.net/salt-stitches-auction/>

2.5.4 Summary

By studying the case studies of contemporary female bead embroidery artists in three surface designs, we have learnt that the textile artists use their works in the field of public art, interior design and other diverse applications, which shows how traditional bead embroidery and embroidery techniques are applied in various fields. This shows that traditional crafts can be combined with scenarios through modern design techniques to achieve the unity of art and function, providing innovative ideas and examples for this study.

The integration of bead embroidery techniques with modern aesthetics offers this study the opportunity to explore how traditional bead embroidery techniques can be combined with modern three-dimensional surface design. The design process should focus on respecting and embracing traditional culture while combining contemporary aesthetics and needs to create 3D surface design products with unique charm and cultural heritage. By studying the case of contemporary bead embroidery artists, it provides practical experience and references for this study, broadens the

scope of application of bead embroidery crafts, and at the same time provides useful inspiration for the innovation of three-dimensional surface design (Sindhu & Jahan, 2018).

2.6 Case study of innovative design based on bead embroidery and 3D surface design

When we examine the innovative design cases of bead embroidery and 3D surface design and explore how contemporary bead embroidery can be designed to integrate with 3D surface design products, we can start from the following directions:

(1) Design concept and innovation: Analyse the design concept and innovation of different bead embroidery products. Compare the similarities and differences of different works in terms of design ideas, styles, use of materials, etc. and explore the sources of design inspiration and creative expression behind them (Wang, 2019).

(2) Application of materials and techniques: Examine the materials and techniques used in different cases of bead embroidery product designs. Analyse the application effect of varied materials in the design, explore the influence of different technologies on the product shape, texture and visual effect, as well as the innovative application in three-dimensional surface design.

(3) Market Positioning and Audience Groups: Investigate and analyse the market positioning and target groups of different bead embroidery product designs. By studying their target markets, positioning strategies, distribution channels and other aspects, we understand the competitive advantages and popularity of various products in the market, which provides a market analysis and positioning reference for this research.

(4) Aesthetic Trend and Cultural Inheritance: Examine the aesthetic trend and cultural heritage embodied in contemporary bead embroidery product designs. Analyse the characteristics of different works in terms of design style, pattern elements, colour application, etc. and explore the associations and development trends with traditional bead embroidery and the ways in which traditional culture can be adopted and innovated in design. Through the study and analysis of these

directions, we can better understand the development trend and characteristics of contemporary bead embroidery product design and provide a theoretical basis and practical experience for further exploration of the research direction.

2.6.1 Julia Shore

Julia Shore is an American contemporary embroidery and fibre artist working in California. The artist's mission is to bring peace and tranquilly into people's lives. She hopes that through her art she can inspire people to connect with nature and themselves on a deeper level. In this way, she finds solace in this meditative craft. She uses embroidery and beadwork as a medium because it captures the intricate details of the living world. As part of Natural Minimalism, an art that she tries to practise in a conscious way by using and reusing natural materials, each piece of embroidery is designed and made by hand. She endeavours to practise art in a conscious and ethical way, using and reusing as many natural materials as possible.

In the Moss Dreams Series, the artist uses 3D embroidery in this series of mixed media designs with hand-dyed velvet, preserved moss, Czech and Japanese glass beads and various fibres. The artist endeavours to capture the intricacies of the moss shapes, the variety of shades and forms of the moss and the soft and calming nature of the moss. Hand-dyed velvet, wool and wool felts, Czech and Japanese glass beads are used in this collection. Wearable Mini Art Collections, handmade clay beads with many intricate details and textures in one small piece. Creating miniature works of art that can be worn in everyday life and reconnect you with the world around you.



Figures 22 Julia Shore 'Moss Dreams Collection

Source : <https://naturalminimalism.com/>

2.6.2 Amandine Bouet

Amandine Bouet is a textile artist from the south of France. She explores different techniques through mixing, placing beadwork at the centre of her work. The work is mainly determined by the mixing of colours and textures. By expanding the palette of techniques and materials, it is possible to deal with variations in tone and light as well as differences in volume. The three-dimensional technique of bead embroidery is similar to the pad embroidery technique of Minnan bead embroidery, where cotton is padded into the fabric and then embroidered with beads, giving the shape a three-dimensional design.



Figures 23 Amandine Bouet bead embroidery mixed media installation

Source : <https://www.amandinebouet.com/>

Using different mixed techniques , Exploring aesthetics through the combination of colour, light, materials and different techniques。 The 3D technique of bead embroidery is similar to the cushion embroidery technique of Minnan bead embroidery, and its design works include spatial installation art and art wall paintings.

2.7 Integration of Xiamen Bead Embroidery Cultural Heritage and Contemporary Design

Chen Kelin, the representative heir of Minnan bead embroidery, reinterprets traditional bead embroidery and applies it to modern clothing and products so that people of today can know and understand it. In the artisan collaboration project initiated by Dress & Beauty VOGUE, Dolce & Gabbana and the heritage of bead

embroidery join forces to combine traditional handicraft and modern design. Minnan bead embroidery is a dual blend of the artistic impact of handwork and the beautiful symbolism it conveys. In this handcrafted centrepiece, the black dress is used as the carrier of the bead embroidery craft and embodies the exquisite skills of bead embroidery. The heirlooms use beads, tubes and pieces of varied sizes and colours to create a three-dimensional visual effect of plants.



Figures 24 Beaded dress Dolce & Gabbana

Source : Chan Hak Ninh Bead Embroidery Production Studio



Figures 25 Rose Bead Embroidery Pattern Production Process

Source : Chan Hak Ninh Bead Embroidery Production Studio

VOGUE Handicraft Project, the brand and traditional handicraft co-creation to explore the local intangible handicraft, traditional handicraft will get more attention and support; at the same time, the handicraft project to promote the local characteristics of culture and wisdom, the inheritance and transmission of the brand handicraft spirit. Innovative interpretation of contemporary aesthetic perspective,

promoting the innovative fusion of traditional and modern, bringing new vitality to traditional crafts, so that more people can recognise the value and beauty of craft culture.

Xiamen bead embroidery inheritor, Xie Liyu, innovatively tries to show the fusion of traditional skill and modern art charm, with its unique texture, it exudes a romantic and aesthetic atmosphere. Xiamen bead embroidery inheritor, Xie Liyu, also in Xiamen bead embroidery continued innovation attempts, now with its unique charm into more modern fashion, shoes, accessories and other fashion design, both fashion, but also contains a deep soft national charm, so that the ancient bead embroidery craft new vitality, China has great beauty, this time the inheritance and use of the best tribute to the classic at that time.



Figures 26 Xiamen Bead Embroidery Slippers Designed

Source : Photographs of Xia Wenxiu



Figures 27 Xiamen Bead Embroidery Women's Clothing Designed by Xie Liyu

Source : Photographs of Xia Wenxiu

2.8 Summary and Prospect

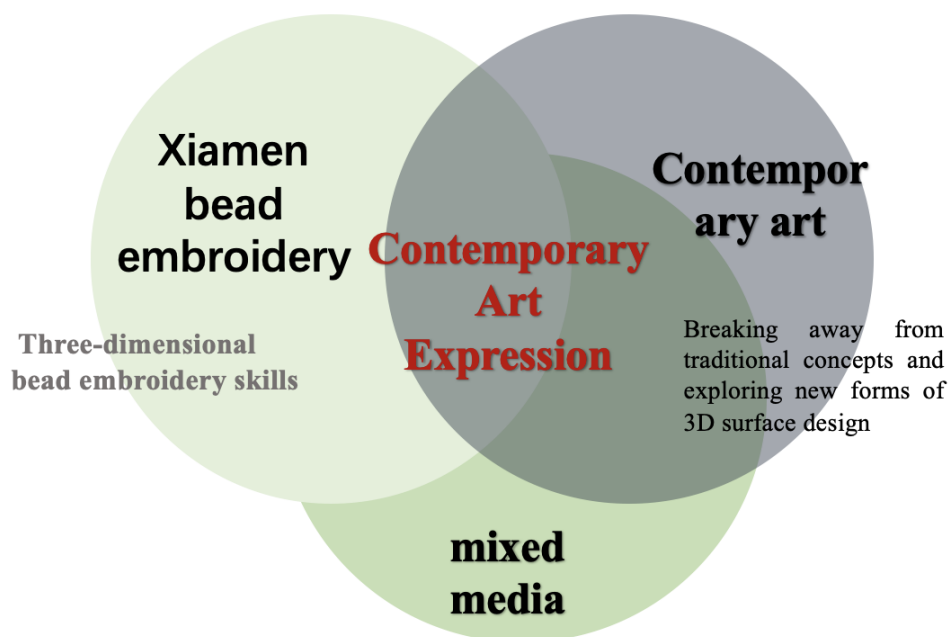
This chapter systematically introduces the cultural background of Xiamen bead embroidery, thoroughly explores its craft characteristics and analyses the current situation of integration with 3D surface design. It deepens the understanding of this traditional craft and lays the foundation for further research. The development of Xiamen bead embroidery and modern design is presented by analysing the cases of contemporary bead embroidery artists and reviewing the methods of 3D design technology. It is shown that Xiamen bead embroidery, as an intangible cultural heritage, contains rich traditional cultural connotations and craft techniques, and its integration with 3D surface design is of great historical significance and innovative value (Julie, 2019). By analysing the cases of contemporary bead embroidery artists, the artists integrate the art of bead embroidery into the field of public art, installation art, home display, etc.

This gives the traditional craft a new direction of application. Analysing the current state of research at home and abroad shows that although the integration of bead embroidery and three-dimensional surface design in Xiamen has attracted great attention, it still needs to be further deepened and explored (Ahmed, 2021). The case study of contemporary bead embroidery artists shows that the artists have integrated the traditional art of bead embroidery with innovative design concepts and technical means into the field of contemporary art. Innovative design methods and technical means such as colour matching, the use of mixed-media materials and the combination of sustainable materials, etc. provide a wealth of ideas and materials for research. Methods of integrating Xiamen Bead Embroidery and contemporary design The study combines the craft characteristics of Xiamen bead embroidery with three-dimensional design technology methods and explores how the traditional art of bead embroidery can be combined with contemporary design to create more innovative and artistic works (Chen, 2016).

In summary, the integration of Xiamen bead embroidery and 3D surface design Xiamen bead embroidery, but there are still challenges and problems in the choice of materials, application of technology, design innovation and other aspects. In the next research work, the way of integrating bead embroidery and contemporary

design will be further deepened, more innovative methods will be explored to improve the practicability and artistry of design, and new ideas and methods for the inheritance and innovation of traditional crafts will be provided (Sand, 2015).

In the current design, the main material is glass beads, 2D works are more common and 3D design products are rare. There is a lack of exploration of design using new materials and techniques, and little involvement in contemporary art. The use of 3D techniques combined with comprehensive materials can provide space for design and development of expression (Sun, 2023).



Figures 28 Case Study The Intervention of Contemporary Design

Firstly, it introduces the cultural background of Xiamen bead embroidery, the characteristics of the craft, and the current development.

Secondly, the analysis of contemporary bead embroidery artists' cases, the traditional craft in contemporary design concepts, the use of mixed-media materials and other methods to provide design ideas for the study, which is of great significance to the subsequent research.

Finally, this study focuses on how to combine traditional bead embroidery with contemporary three-dimensional surface design, and in the next research work, it will explore the innovative methods of combining bead embroidery with contemporary design.

CHAPTER 3

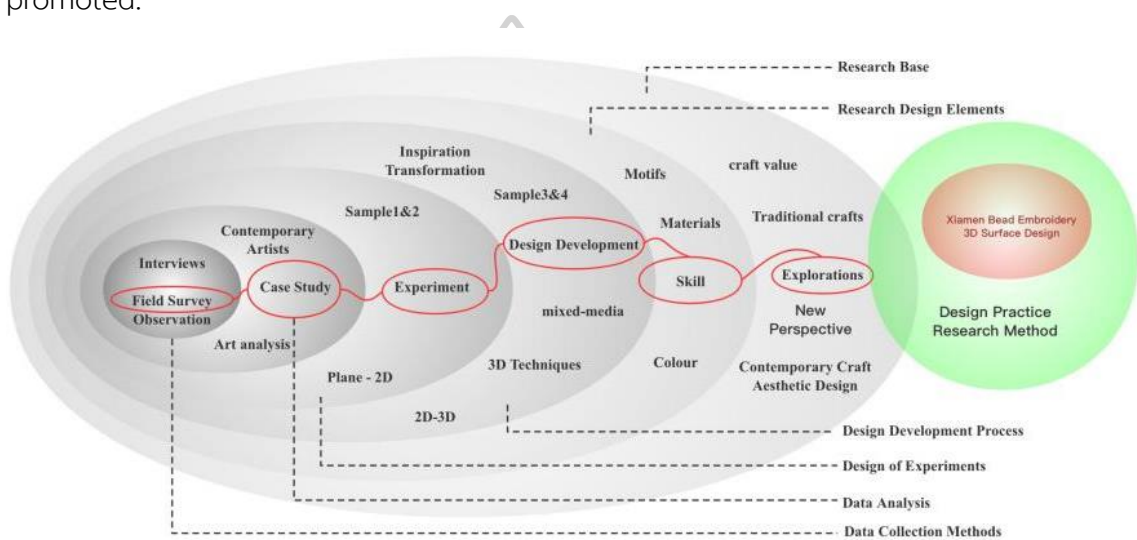
RESEARCH METHODOLOGY

This research is a practical, design-based study that can be divided into three parts. Firstly, it analyses the artistic achievement of international artists in the modern design practise of bead embroidery. Secondly, analysing the artisanry and skills of traditional beadwork in Xiamen, China. And finally, the use of experimental methods to develop new perspectives on the design of Xiamen bead embroidery on three-dimensional surfaces through artistic practise and expression. The methodological line of the research can be summarised as follows:

The methodological instruments of data collection are interviews, observations, notes, photography, experimental work, etc. Firstly, research and interviews will be conducted with artists to understand their views and ideas about modern bead embroidery design and their creative methods and processes. Secondly, data will be collected on the techniques and methods of bead embroidery in Xiamen, including traditional embroidery methods, craft processes, materials and tools used, etc. The data collection was conducted through literature research and field trips. Subsequently, the collected data was compiled and analysed, and an in-depth investigation of both artists and traditional techniques was conducted to better understand and grasp the integration of Xiamen bead embroidery and 3D surface design.

The experimental method is to participate in activities such as design week during the design inspiration phase to find inspiration and stimulate creativity. In the design concept stage, the design goals and directions are clarified, unique design concepts are put forward, and a preliminary draft programme is prepared. Specify the design concept through design sketches and draft a preliminary design scheme, considering materials, colours and other factors. Put the design scheme into practise in the practical phase, adapt and improve the design to achieve the expected results.

Finally, summarise all the experimental results, evaluate the experimental effect, provide guidance for further research and design, and explore the possibility and development direction of the integration of Xiamen bead embroidery and contemporary design. Through the above way of research methodology, the research on the integration of Xiamen bead embroidery and 3D surface design can be conducted systematically, the potential of bead embroidery art can be explored deeply, and the organic combination of traditional culture and modern design can be promoted.



Figures 29 Research Methodology Process

3.1 Data Analysis: Modern Bead Embroidery Design from the Artist's Perspective

3.1.1 Ken Samudio

Born in the Philippines, Ken Samudio was a biologist specialising in marine life before becoming an accessories designer. The diversity of coastal and coral reef systems in the Philippine archipelago is his inspiration. This unique technique explores the natural organic forms found in nature and mimics unique textures through the use of local and recycled materials. The artworks are created with recycled beads made from sustainable materials such as plastic bottles, recycled glass and other local materials.

This unique technique explores natural organic forms found in nature and mimics unique textures through the use of local and recycled materials. The artworks are created from recycled beads made from sustainable materials such as plastic bottles, recycled glass and other indigenous materials (Giltsoff, 1971).



Figures 30 Accessories Design DI ELISA PERVINCA BELLINI 25 febbraio 2015

Source : <https://ken-samudio.com/about-the-brand/>

Accessory Design Materials Stunning with fibre optic, luminous and sea urchin-like pieces. The beautifully crafted designs incorporate recycled beads from plastic water bottles, recycled sea glass and other local, sustainable materials (Zhihai, 2020).

3.1.2 Rasa Vilcinskaite

Rasa Vilcinskaite is an accessory designer. She currently focuses on bead jewellery, accessories and wearable art. A graduate of Vilnius Academy of Arts, she has spent 3 years refining new beadwork and materials and then developing wearable art forms such as body jewellery and masks (Sindhu & Jahan, 2018). The beadwork is inspired by oil paintings, minimalism and the search for the perfect colour. All works are very natural and creative and reflect her inner world and self. Using her work as a visual language to communicate with the outside world, Rasa's works reflect her feelings as a human stranger. She tries to cover or disguise the imperfections of herself with the 'perfect' details of her beadwork in order to be noticed in society, which is time-consuming, complicated and meticulous.



Figures 31 Rasa Vilcinskaite Designer making wearable art

Source : https://www.etsy.com/shop/RasaViJewelry?ref=profile_header



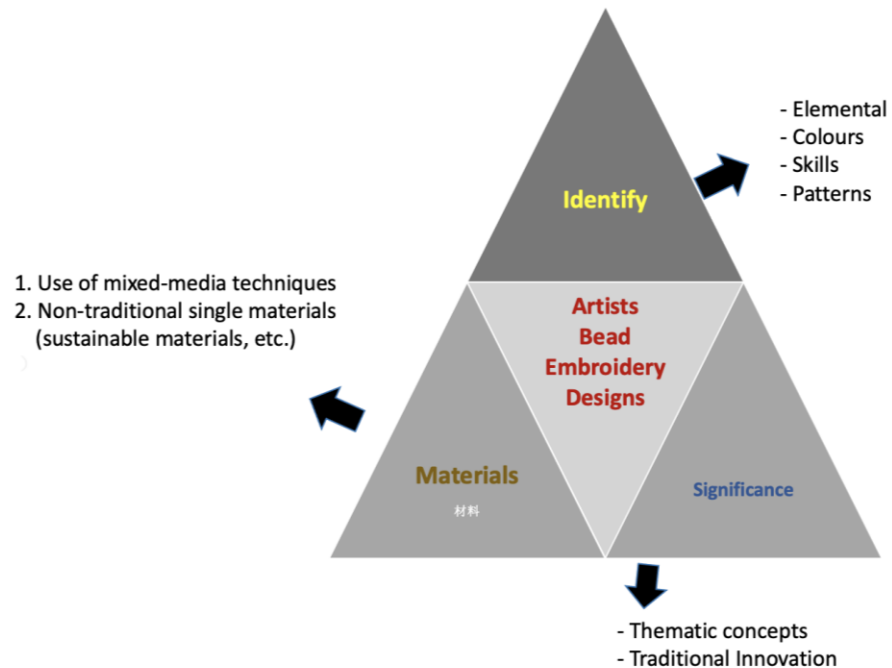
Figures 32 Haute Couture Art Jewellery

Source : https://www.etsy.com/shop/RasaViJewelry?ref=profile_header

Designer Rasa Vilcinskaite creates beaded necklaces, pendants, headpieces, wearable art and clothing accessories. Her style is alternative, and her designs have a strong concept of colour, shape and form. Learn how the artist explores the art of beadwork by using different stitches, tools and bead shapes, colour combinations, 3D modelling, compositional principles, design development and other intellectual concepts.

Based on the above data analysis of modern bead embroidery design from the perspective of two contemporary artists, it can be concluded that the design of contemporary aesthetic bead embroidery can be achieved through the use of mixed-media techniques, the use of non-traditional single bead embroidery materials, such as the current principles of sustainability, and their combination with sustainable

materials. The techniques can be a combination of modern and traditional, with innovative and aesthetically pleasing colour schemes, depending on the theme of the design(Cai, 2024).



Figures 33 Summary Points of Modern Bead Embroidery Design
from the Artist's Point of View

3.2 Data Collection: Xiamen Bead Embroidery Techniques and Methods

Three-dimensional bead embroidery is a commonly used decorative technique in Xiamen bead embroidery, this decorative art has a keen sense of three-dimensionality, such as relief, three-dimensional bead embroidery method is very flexible, you can add a lot of changes in the shape of the imagination through the space. You can stack and overlap the bead embroidery material, use the pad embroidery and irrigation embroidery to make it more three-dimensional and create a completely different design effect with the flat bead embroidery. It can be generally used for all kinds of decoration.

3.3 Materials and Tools for Bead Embroidery

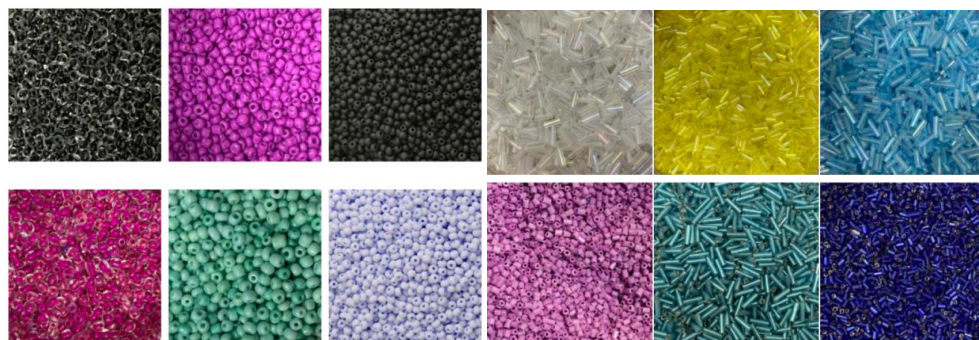
3.3.1 Materials

Beads are the most basic raw material of bead embroidery and also the main medium used to express the artistic characteristics of bead embroidery. The types of beads are generally divided into pearls, porcelain beads, shell beads, glass beads, plastic beads, metal beads, crystal beads and various types of beads made of precious stones. With the rapid development of science and technology, the choice of bead embroidery materials is also becoming wider and wider, the market began to appear synthetic materials, unique styles, colours of artificial gemstones, the shape of the bead.

The shape of beads is no longer limited to round, granular beads, there are also tubular beads, square beads, triangular beads, teardrop-shaped beads, bevelled beads, bead discs, shaped discs, etc. The appearance of these new materials makes the expression of bead embroidery more colourful. At present, glass beads, tubular beads, pearls and other materials are mainly used in the production of bead embroidery.

(1) Glass beads

The size of glass beads has different specifications, the smallest size of 1 mm beads, large can reach about 1 cm, different size of glass beads in embroidery according to the performance of the effect will also be different, glass beads can generally be divided into transparent beads and opaque beads of two types, according to the different colours and lustre, the material and processing technology, and can be divided into different categories.



Figures 34 Bead Embroidery Type

(2) Glass Tube Beads

The specifications of glass tube beads can be categorised according to both diameter and length. According to the classification of diameter, there are generally 1mm (1-minute bead), 2mm (2-minute bead), 3mm (3-minute bead) and other different thicknesses of beads; according to the classification of length, there are generally 2mm-12mm and other different sizes. The classification of glass tube beads and glass rice beads is not very different, they are also divided into two types: transparent tube beads and opaque tube beads, which can also be divided into different varieties, for example, transparent tube beads generally include transparent ordinary tube beads and transparent coloured tube beads, etc. Opaque tube beads generally include metal tube beads, silver-filled tube beads and coloured core tube beads.

(3) Beads

There are transparent and opaque beads, including coloured beads, frosted beads and laser beads, laser beads and other types, each type has different specifications. There are hundreds of different shapes and specifications, such as round, square, diamond-shaped, triangular and some irregular shapes, such as hexagonal concave pieces, petals, tree leaves, butterflies, stars and so on.

3.3.2 Tools and Equipment

The basic tools for bead embroidery include drawing pens, copy paper, embroidery bindings, embroidery hoops, embroidery needles, bead discs, scissors, etc. You will also need to prepare storage boxes for beads.

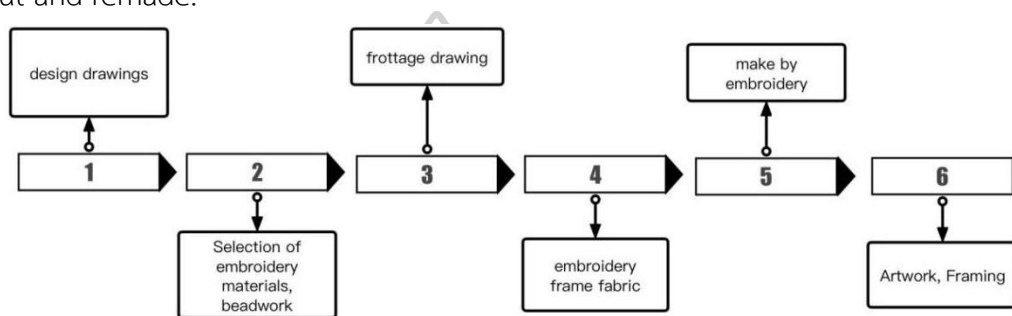
Bead Embroidery Materials & Tools	
Bead Embroidery Needles	
Embroidery thread	
Embroidery fabric	
Bead Embroidery Beads	
Embroidery Bandage	

Table 5 Bead Embroidery Materials & Tools

3.3.3 Xiamen bead embroidery production process

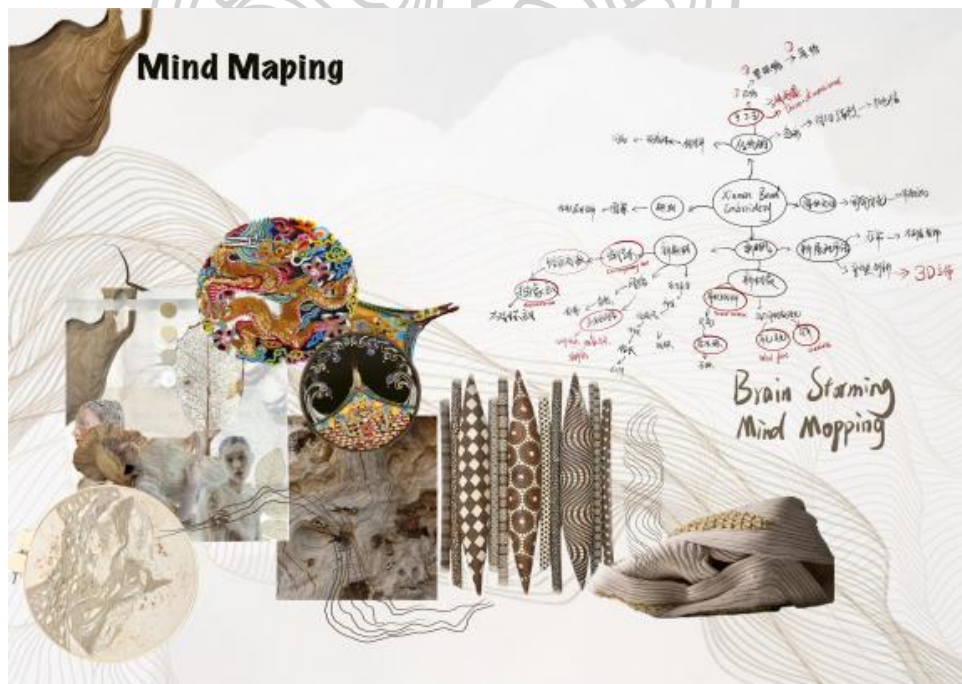
The production process of Xiamen bead embroidery is extremely complicated and requires a series of steps, such as material selection, design, colour matching, embroidery and so on. The artisans carefully select the suitable beads according to the design pattern and then sew the beads onto the fabric one by one with fine threads according to the requirements of the pattern. This process requires a lot of patience and care, as the position, size and colour of each bead must be exactly right to give the whole piece a harmonious and uniform aesthetic.

Xiamen bead embroidery process (as shown) is usually the initial conception of the design pattern, and then the design of the pattern drawn on the paper, and then after the appropriate selection of suitable embroidery materials and embroidery beads, and then transfer the drawing to the fabric used, topography is completed after the fabric is embroidered on the taut and then, in the back of the work is evenly coated with rice syrup, after drying and sorted out can be embroidered. If the work is to be made into a finished garment or accessory, it is embroidered and then cut out and remade.



Figures 35 Xiamen bead embroidery craft process

3.3.4 Traditional Bead Embroidery Pattern Extraction Design Methods



Figures 36 Traditional Beadwork Pattern Extraction

“3D Beadwork Experiment on Bag Surface”



Figures 37 Xiamen Bead Embroidery Craft Process

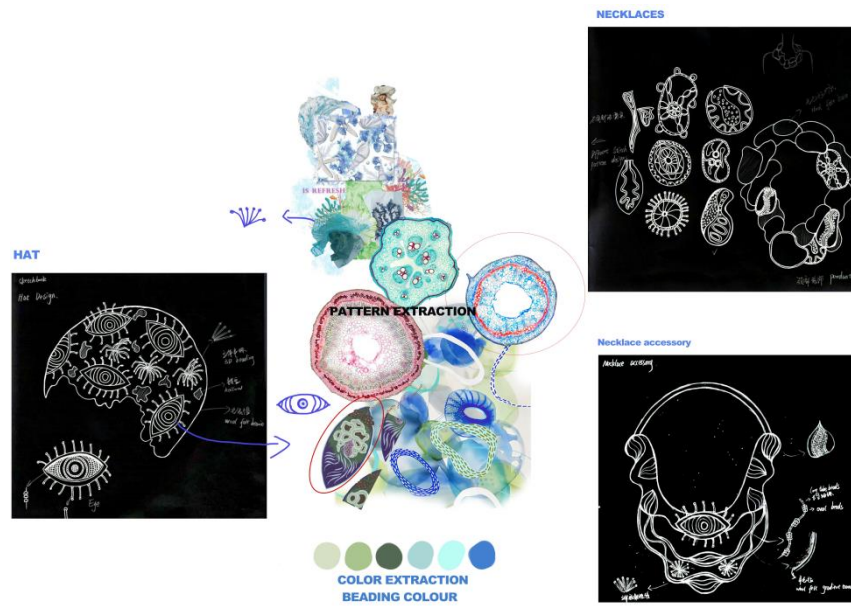
3.3.5 Experimental Method: Combined with Mixed Media



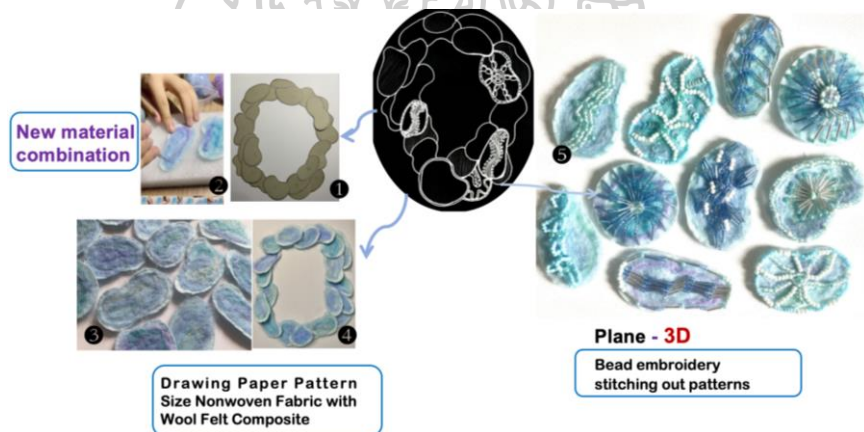
Source of Inspiration

This design is inspired by marine life, extracting the shape of sea oyster, color elements are transformed, bead embroidery and soft wool felt to form a different material contrast. Design Bead Embroidery Visual Wearable Art and Clothing Accessories.

Figures 38 Design Inspiration



Figures 39 Bead Embroidery Visual Wearable Art Draft Design

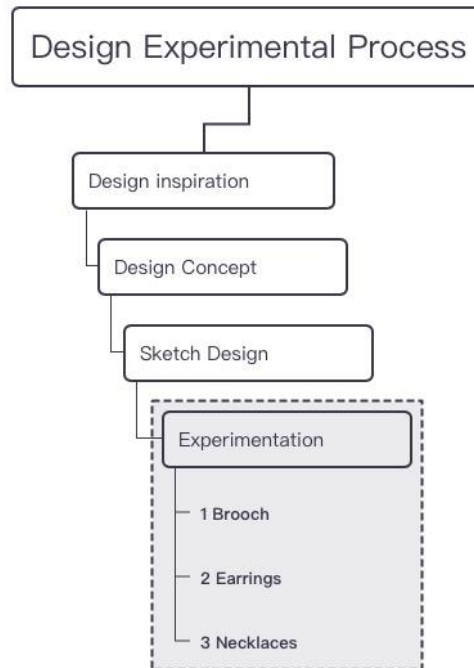


Figures 40 Design Example -Necklaces Designs



Figures 41 The Finished Product

3.4 Experimental Methods: Combining Xiamen Bead Embroidery with Artistic Expression



Figures 42 Design Experimental process Flowchart

3.4.1 Design inspiration

The design inspiration work began to evolve from the theme of Bangkok Design Week 2024. I found the quality of the botanical motifs of Lumpoo plants very meaningful to the community and decided to use the plant as the main design element of the work. I am exploring the ways in which botanical design elements can be used in the art form of bead embroidery and exploring bead embroidery as a way to decorate and personalise accessories. This design explores the creation of three-dimensional decoration in traditional bead embroidery. Explore the feelings between plants and people and the healing power of plants. By extracting the patterns of plants, restructuring the design approach and using bead embroidery and felt to display 3D techniques, we are committed to the innovation of traditional bead embroidery. Through the contrast of colours, textures and shapes, 3D bead embroidery simulates the natural layering of plants and reveals their unique visual language.

3.4.2 Design Concept

The collection is dedicated to the precious and endangered beauty of nature, through the combination of art and slow craftsmanship, from fabric to embroidery, following the laws of nature and savouring time. Each stitch of bead embroidery is a life experience. expresses that in the midst of hectic and stressful life, people are looking for a slower pace of life and pay more attention to the inner world as they search for inner peace amidst the blooming flowers.



Figures 43 Mangrove Apple Fruits (Cork tree, Mangrove Apple, Lumpoo, *Sonneratia caseolaris*) in the Songkhla lake, Thailand

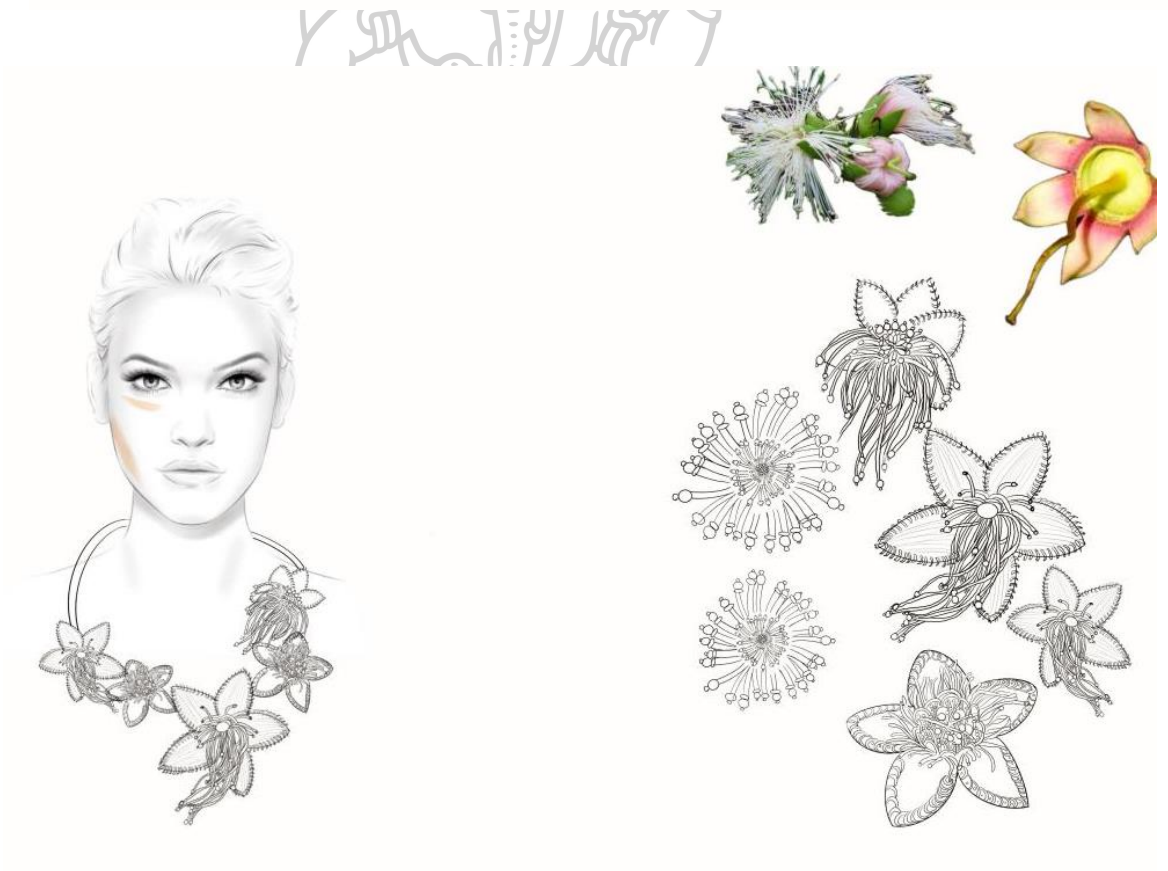


A jewellery series inspired by Lumpoo plants. By extracting the patterns of plants and reorganising the design techniques, we use bead embroidery and felt to present **3D technology**, Committed to exploring the innovation of the traditional bead embroidery craftsmanship. Through the contrasting **colours, textures and shapes**, the **3D bead embroidery simulates** the natural layering of plants, presenting the unique visual language of plants.

Title | **SEEK**
C O N C E P T

Figures 44 Design Inspiration

3.4.3 Sketch Design



Figures 45 Sketch Design by Hand Drawing

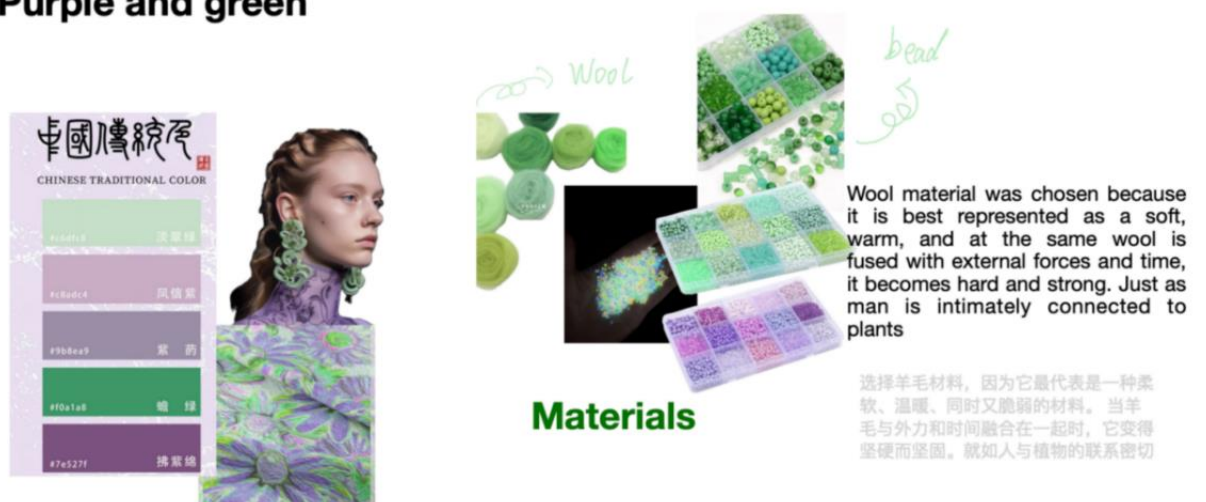
3.4.4 Experimentation : Studio Practice

The shapes and colours of plants are extracted and designed using the Xiamen bead embroidery technique to create a 3D surface design effect.



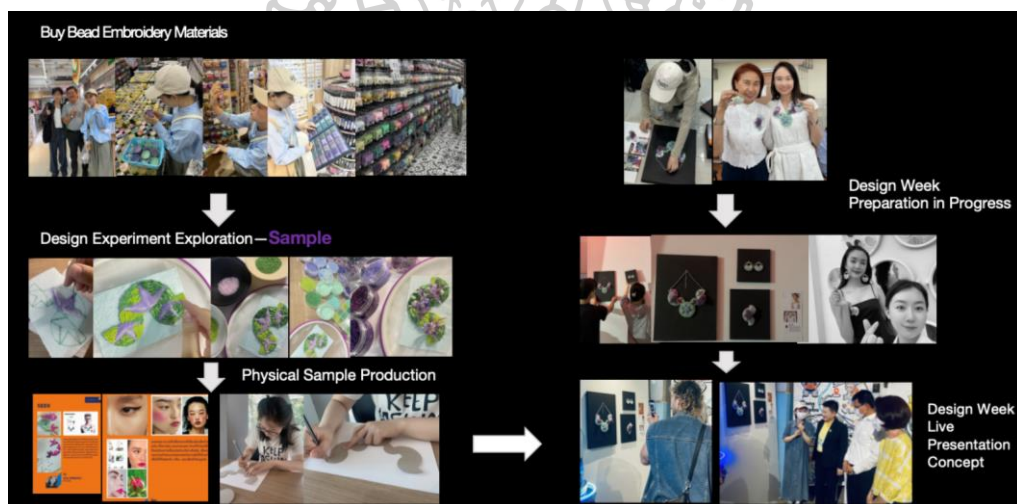
Figures 46 Final Product Sketch Design

Colour Purple and green



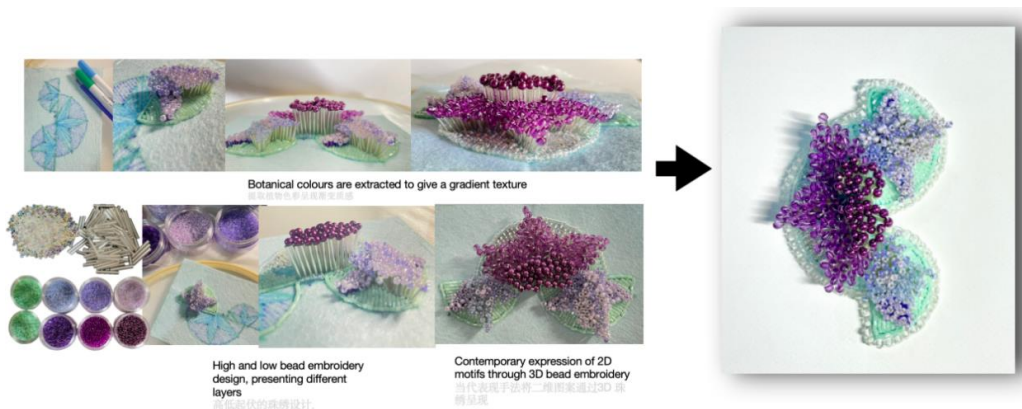
Figures 47 Material and Colour Trends

For the colour scheme I used the main colours of the plants themselves, mainly violet and green. The materials chosen are mixed materials such as wool felt, leather, non-woven fabrics, glass beads, beadwork and transparent fishing line. Wool felting is the oldest form of weaving in the history of humankind and was used even before weaving and knitting. Wool is both soft and strong, pleasant to the touch and has good regenerative properties. Its fibre structure can be knitted tightly and is very tough that it does not need to be knitted or sewn but can be moulded in one piece. This is why I chose wool felt as one of the mixed media materials to combine with bead embroidery. It stands for a soft and warm material that conveys the resilience of plants. In combination with the design theme of bead embroidery, the material elements are integrated into the design of the accessories and the whole series conveys a close connection and emotional expression between people and plants.



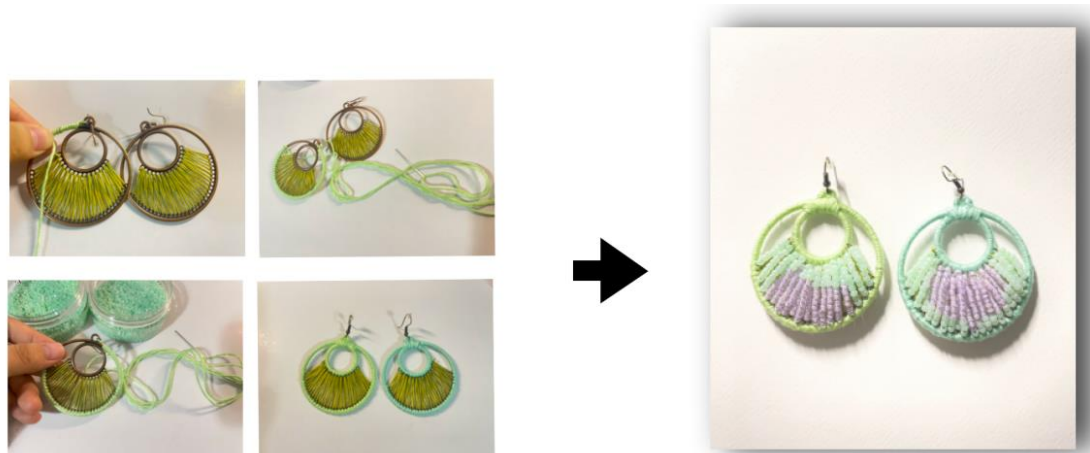
Figures 48 Studio Practice-Experiments

3.4.4.1 Design Process Experiments- 1Brooch



Figures 49 Design Process Experiments-1 Brooch

3.4.4.2 Design Process Experiments- 2 Earrings



Bead embroidery combined with cotton thread material

Figures 50 Design Process Experiments-2 Earrings

3.4.4.3 Design Process Experiments- 3 Necklaces



Figures 51 Design Process Experiments Earrings- 3 Necklaces

3.5 Results of all experiments

After the above experimental exploration, we summarise the experimental results:

(1) Research Progress

Use modern bead embroidery to realise the breakthrough of Xiamen bead embroidery from two-dimensional to three-dimensional. Explore the new expression of mixed media, the combination of bead embroidery and wool material, change the

traditional material of Xiamen bead embroidery. Enrich the sense of material contrast and make the visual effect more obvious.

(2) Improvement the Direction

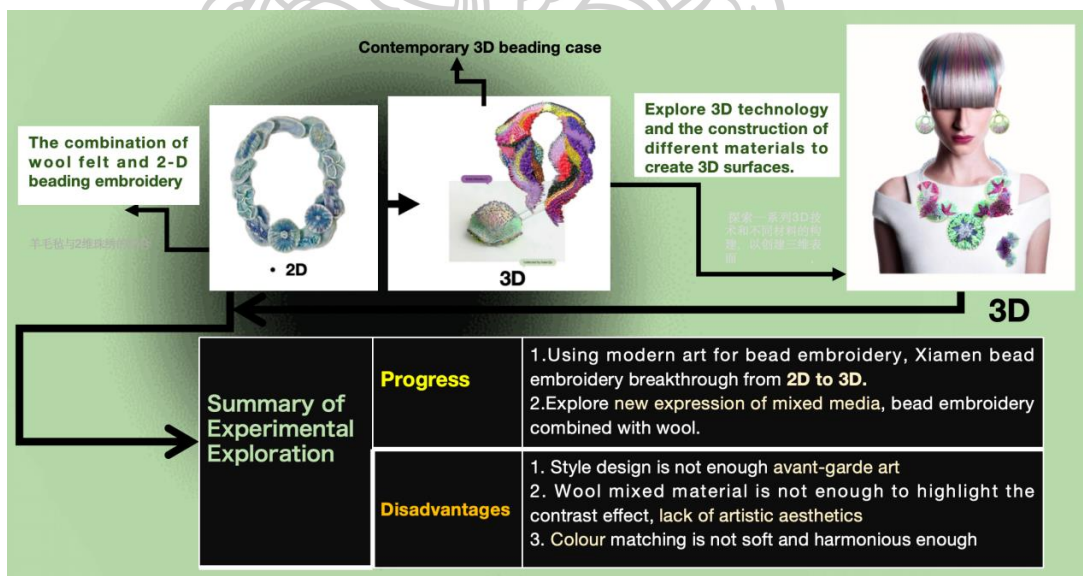
The style of the design is not avant-garde enough, the follow-up products can have a more distinctive style. The technique of bead embroidery is simple, post-processing can be combined with a variety of three-dimensional bead embroidery techniques, the other visual effect is more prominent. The bead embroidery technique is not exquisite enough. The contrast effect of the wool blend fabric is not distinctive enough, lacks artistic aesthetics, the colour matching should be softer.



Figures 52 Results from Experiments Process "Seek" concept



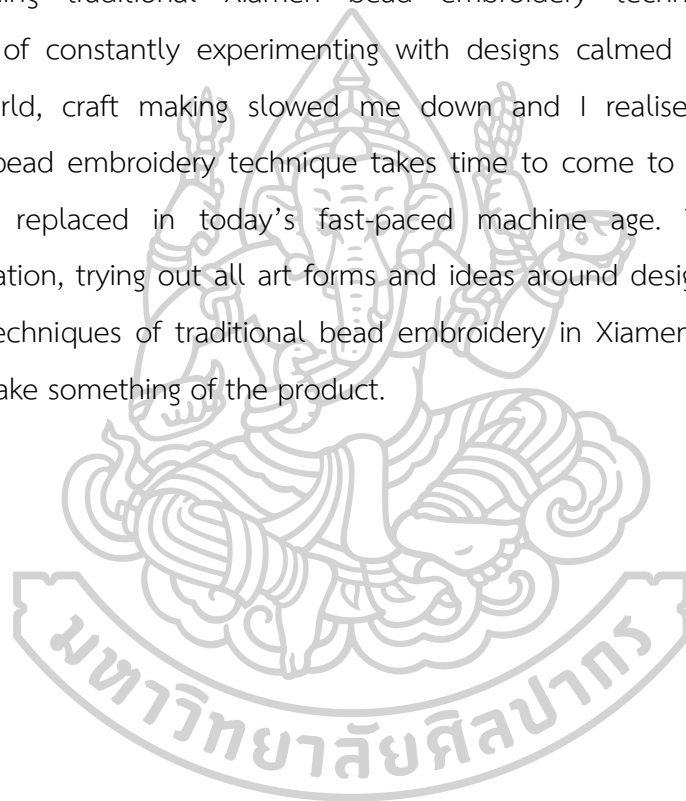
Figures 53 Bangkok Design Week Live Model Show



Figures 54 Results of all Experiments

The purpose of these experiments is to design the art form of Xiamen bead embroidery as a 3D surface design and to expand the visual effect of Xiamen bead embroidery from 2-dimensional to 3D . (ZhouYou, 2016)Experimenting with the tactile and surface design of bead embroidery in combination with wool felt, using mixed media to express thematic ideas, integrating technology and traditional Xiamen bead embroidery techniques, and redefining the boundaries of traditional Xiamen bead embroidery.(Wang, 2019)

Learning traditional Xiamen bead embroidery techniques through the experience of constantly experimenting with designs calmed my emotions in an anxious world, craft making slowed me down and I realised that mastering a traditional bead embroidery technique takes time to come to rest, something that cannot be replaced in today's fast-paced machine age. Through inspiration, experimentation, trying out all art forms and ideas around design concepts, I learnt the basic techniques of traditional bead embroidery in Xiamen and used my own hands to make something of the product.



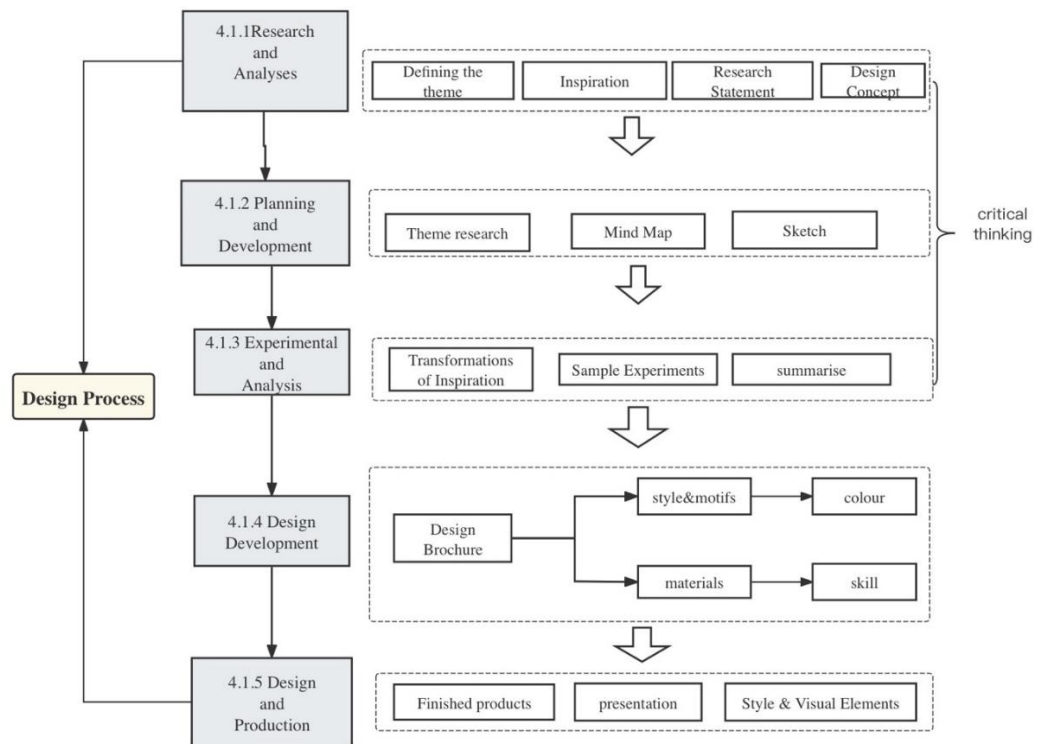
CHAPTER 4

DESIGN SUMMARY

This part of the research was conducted on the basis of design practise, research for and by design. As part of the implementation of the research methodology, the design programme is developed, the objectives and direction of the research are clarified, and the researcher collects, analyses, refines and summarises relevant data on design development. According to the objectives on the need to conduct trial experiments before the completion of the final design work, through experiments and analysis to verify the feasibility of the programme, the development of specific programmes and design concepts in accordance with the design objectives, the programme is transformed into a physical work, the production process to achieve the design concepts, to explore the potential for the application of Xiamen bead embroidery in the design of three-dimensional surfaces. The design process of the final work of this study can be summarised in several steps: Research and analysis, planning and development, experimental analysis, design development, design and production.

4.1 Design process

In addition to the design programme booklet, the contemporary design of Xiamen bead embroidery is examined through the lens of contemporary aesthetics to explore its position and significance in the field of contemporary art and to seek research theories in related fields as a methodological guide.



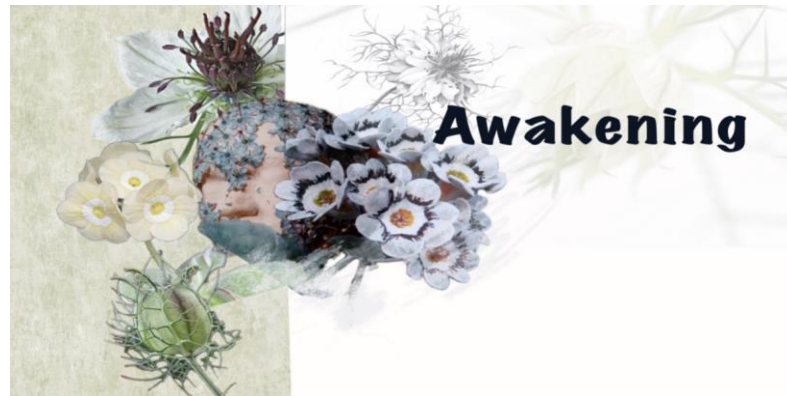
Figures 55 Diagram Showing “Design Process”

4.1.1 Research and Analysis

The research process begins with an exploration of three-dimensional bead embroidery techniques using the Xiamen bead embroidery techniques. It will analyse the use of Xiamen bead embroidery techniques through artistic practise and explore how the visual expressiveness of the techniques can be used in bead embroidery to show how art in three-dimensional surface design can contribute to a practise-based research process.

As well as exploring how traditional craftsmanship can be integrated into modern design, this is a study of the use of traditional cultural techniques in contemporary art design from the perspective of the bead embroidery artist, where the combination of mixed media materials and forms of expression can demonstrate the relationship between the two and the impact that mixed media and good technique can have on the production and understanding of the artwork. She will demonstrate the value of traditional craft culture in translating the artist's ideas into a contemporary aesthetic art form and explore the sustainable development of traditional craft culture.

This is a project focusing on handicrafts, aiming to preserve the traditional handcraft skills of Xiamen bead embroidery. Reinterpreted through wearable accessory design. Demonstrating an understanding of nature and traditional craftsmanship, giving the traditional skills a timeless beauty that can last forever.



Figures 56 Final Design Title "Awakening"

Plant 1: Nigella damascena (Love-in-a-mist)

Romantic in nature
具有浪漫主义色彩

Plant Features: more adaptable, more hardy

FLOWER LANGUAGE: Dreamy love. (Love-in-a-mist)

Flower Horoscope: Instead of waiting to be loved, take the initiative to love others and start your life positively.

Characteristics: Light and agile

Pharmacological properties: neuroprotective - anxiety - depression, etc.

Figures 57 Inspiration Plant 1 “Nigella damascena”

Sketch Design: Nigella damascena

ink painting

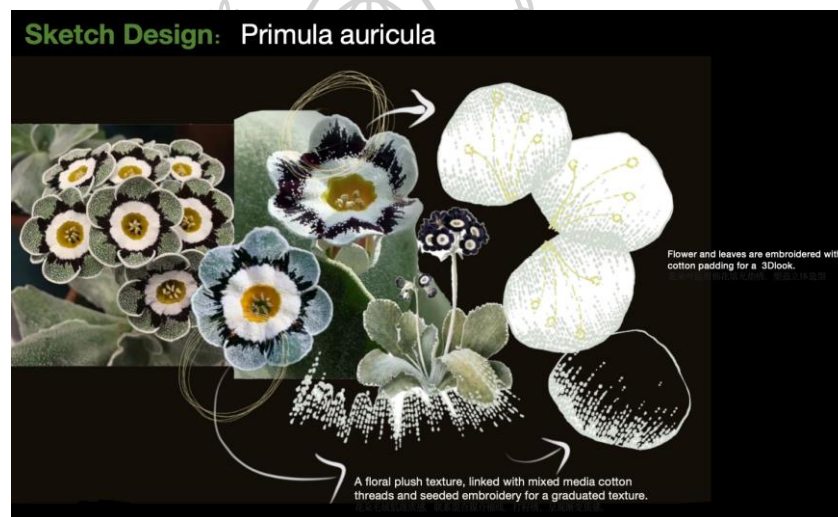
development

Botanical 3D form, associated with the use of crochet filled with 3D combined with 3D beading

Figures 58 Plant 1 “Nigella damascena” Sketch



Figures 59 Inspiration Plant 2 “Primula auricula”



Figures 60 Plant 2 Samples Sketch

4.1.2 Planning and Development

Through the Xiamen Traditional Bead Embroidery 3D surface design process, the planning of the entire design development time and the completion of the task objectives. The selection of materials for wearable accessory design, preparation of blended materials in relation to fabric thickness, and proper equipment are all issues that need to be considered. Appropriate time management and planning of samples for bead embroidery are also important as the process is time consuming in traditional craft culture. This included collecting and researching fine art data to develop the shapes, colours and patterns of the design theme, which were then combined with design principles to guide all aspects of the new development.



Figures 61 Wearable Accessory Design Draft Development

4.1.3 Experimental Analysis

The experimental analysis is based on the preceding research process and the experimental sample design. It summarises the results of each pattern experiment, summarises and analyses the strengths and weaknesses of the pattern design, identifies the problems and finds solutions, and formulates the subsequent design process for the design development programme.

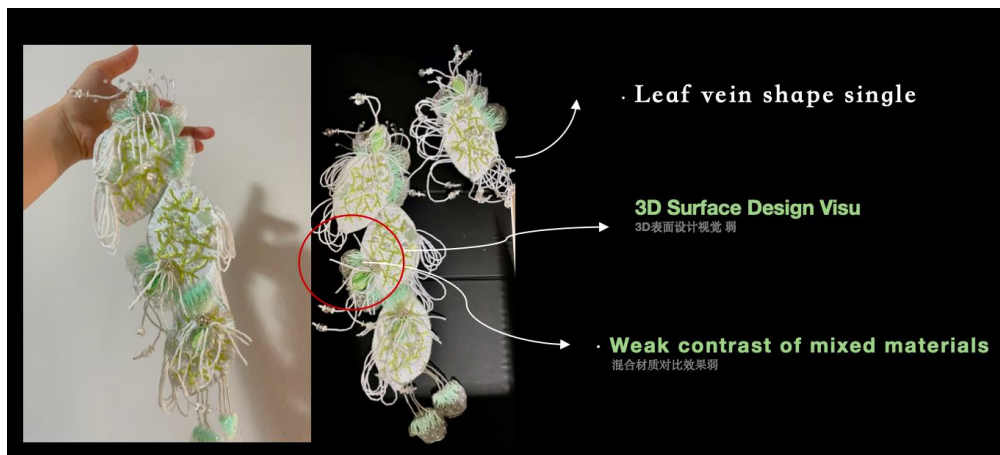
Experimental Exploration—Sample 1&2 Earrings Designs



Figures 62 Experimental Exploration-Sample 1&2 Earrings Designs



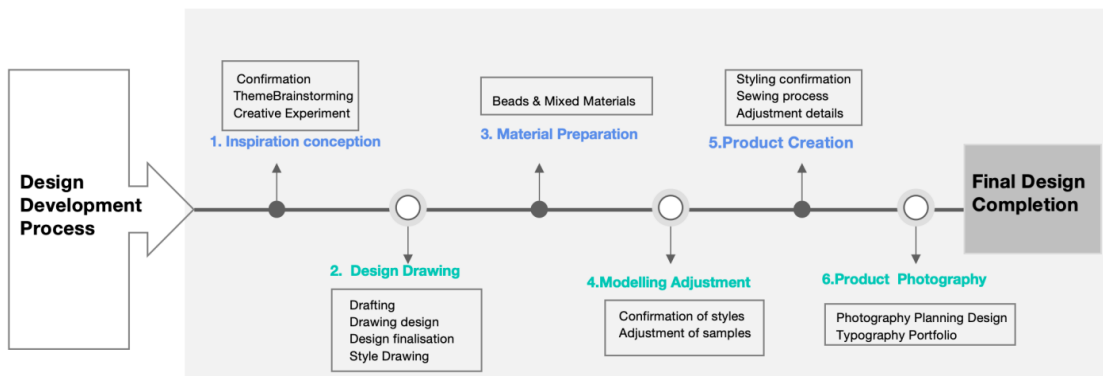
Figures 63 Samples 1 & 2 Show-Earrings Design



Figures 64 Sample Experiments Summary – Earrings

The design experiment uses mixed media leather and knitting yarn for crochet filling cotton, the effect is good and the bead embroidery texture contrast, and wire shaping, and other techniques combined with the overall colour matching. However, the presentation of three-dimensional bead embroidery is weak, and the three-dimensional design perspective should be touched up.

4.1.4 Design Developme



Figures 65 Flowchart Design Development

4.1.5 Design Production

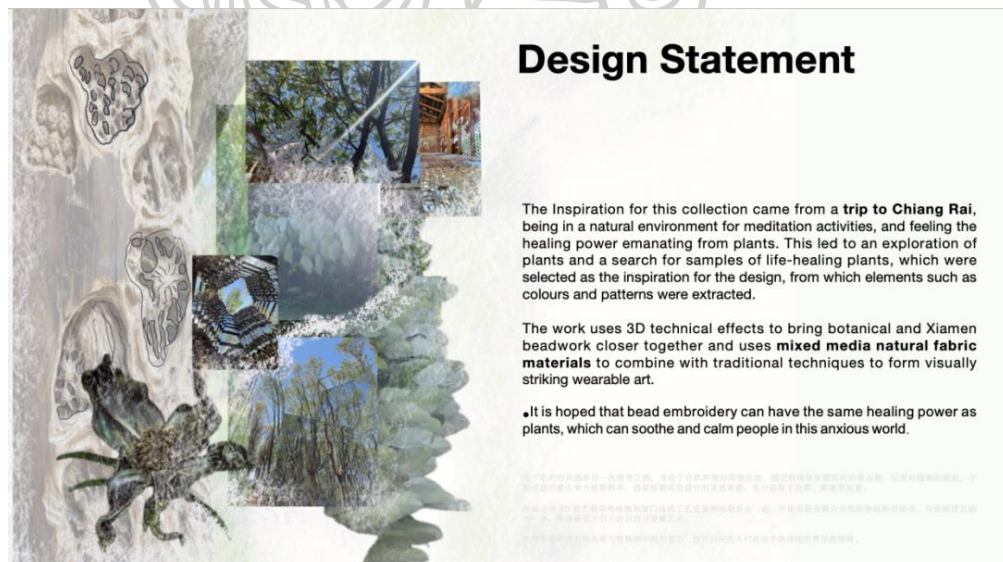
The focus of this research is to convert the design solution into an actual design product and realise the design concept through the production process. In the design production, attention should be paid to the use of materials and processes that match the style of the theme programme to ensure the quality and presentation of the work. The results obtained in this research form a new knowledge system for the use of Xiamen bead embroidery craft use, which is the product of theoretical experimentation through the research methodology as well as the integration of traditional and modern aesthetic design. The artworks are presented through hand-drawn sketches and PS computer graphics techniques for design, Adobe Illustrator and other visual effects in a programme book. Once the sketches are completed, the style, structure and elements of each designed product are analysed. We perform a style decomposition of the board design, cut out pieces, establish beading patterns and combine them with various beading techniques and other handwork to recreate the visual effect of the design. This is how we ensure the quality of the work and the visual impact of the three-dimensional surface design.

(1) Design Inspiration

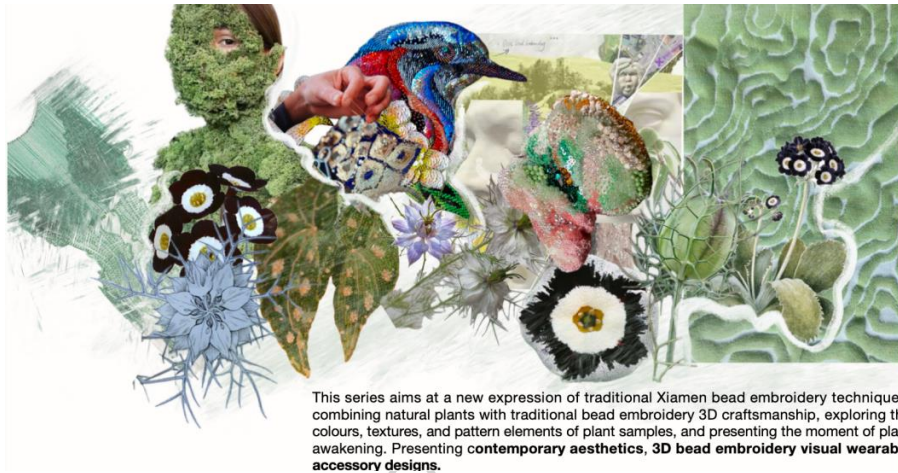
The reinterpretation through the design of wearable accessories shows an understanding of nature and traditional craftsmanship, giving traditional skills a timeless beauty that can last forever.

The inspiration for this collection came from a trip to Chiang Rai, where I stayed in a natural environment to meditate and feel the healing power of plants. This led to an exploration of plants and a search for patterns of life-healing plants, which were selected as inspiration for the design, from which elements such as colours and patterns were extracted. The work utilises 3D technical effects to bring botanical and Xiamen bead embroidery closer together and uses mixed natural fabric materials combined with traditional techniques to create visually stunning wearable art.

This series aims to create a new expression of traditional Xiamen bead embroidery techniques by combining natural plants with traditional 3D bead embroidery craftsmanship, exploring the colours, textures and pattern elements of plant designs and depicting the moment of plants' awakening. 3D bead embroidery presents contemporary aesthetics and visual, wearable accessory designs.

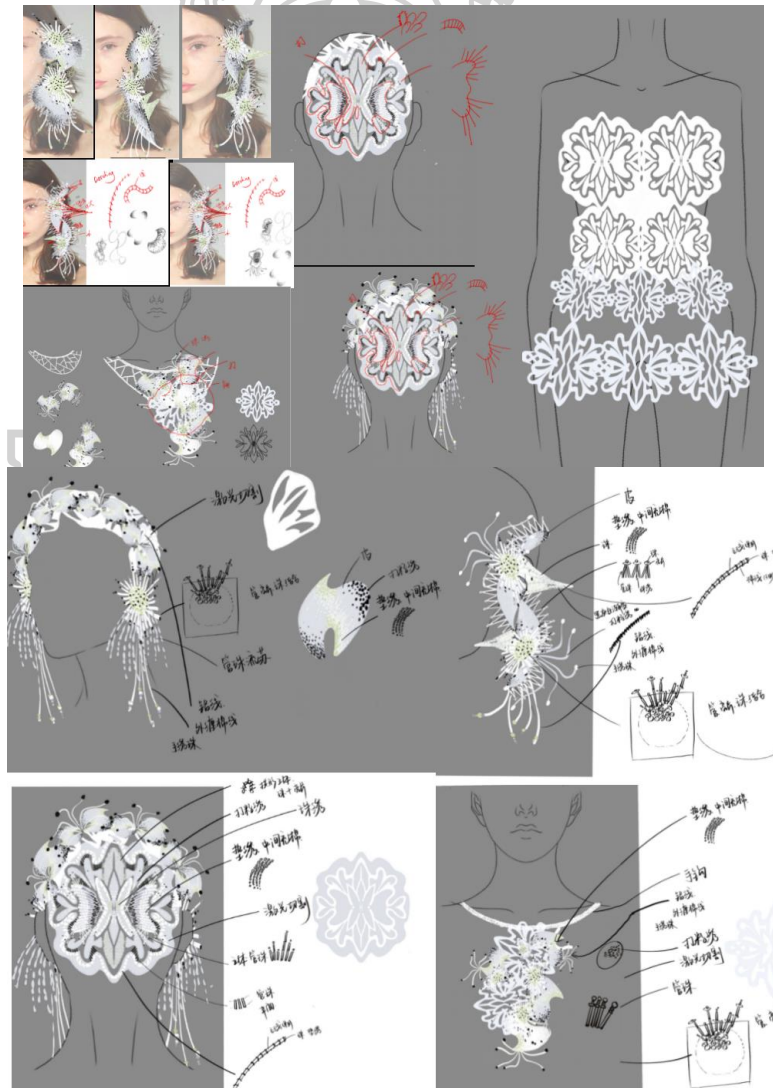


Figures 66 Design Statement



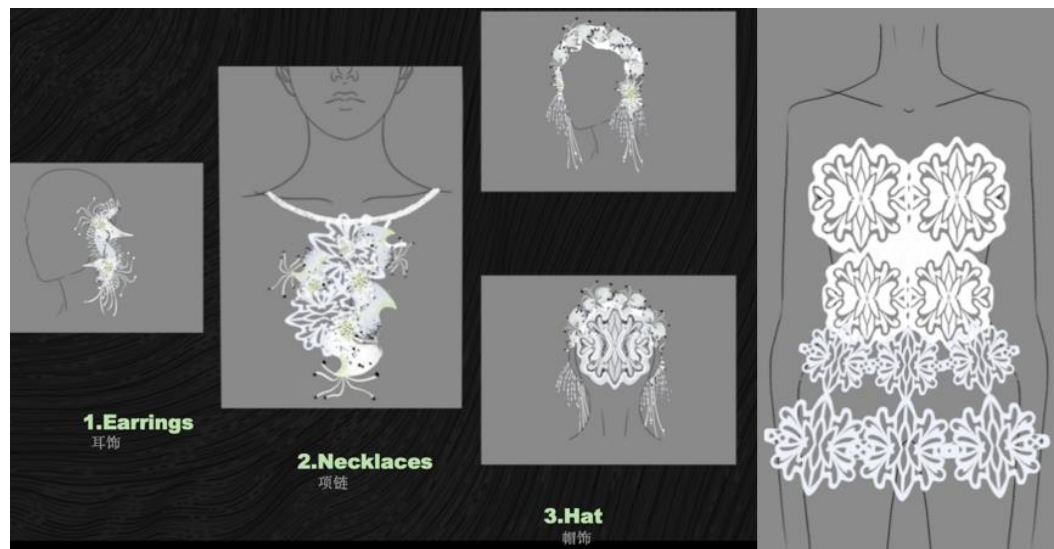
Figures 67 Design Inspiration

(2) Sketch Development



Figures 68 iPad Procreate Sketch Design

(3) Wearable accessories design series effect



Figures 69 Wearable Accessories Design Series Effect

(4) Materials and Colours Extract Edition

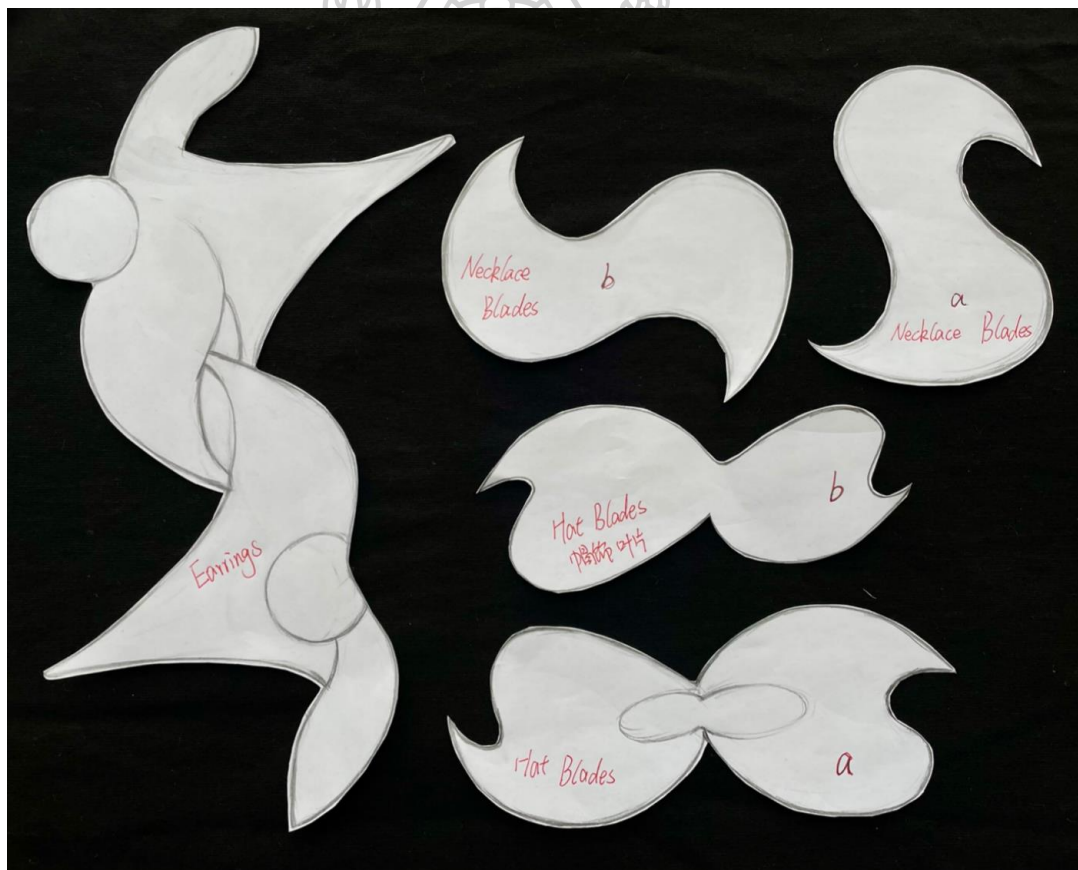
Through a variety of materials such as glass bead embroidery, hand crochet, cotton thread, plant leather cutting, etc., the colour, texture and pattern elements of plant patterns are extracted to represent the moment of the awakening of plant life.



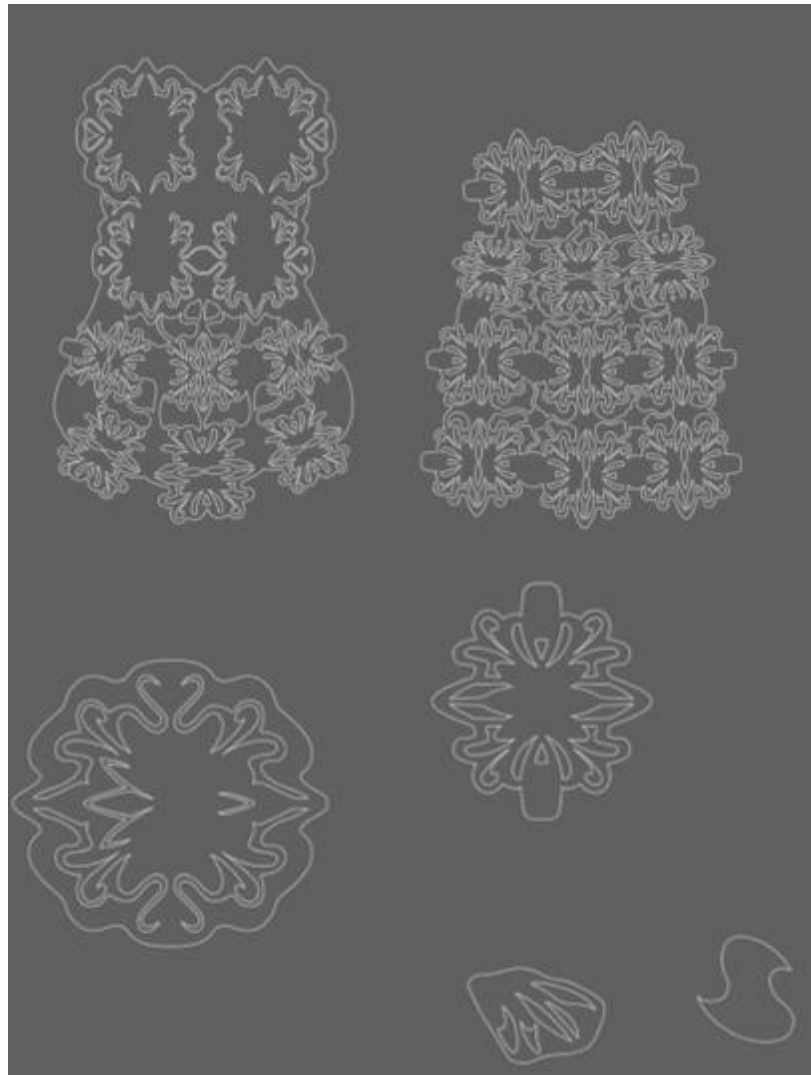
Figures 70 Materials and Colours Extract Edition



Figures 71 Material Selection



Figures 72 Paper pattern making 1:1

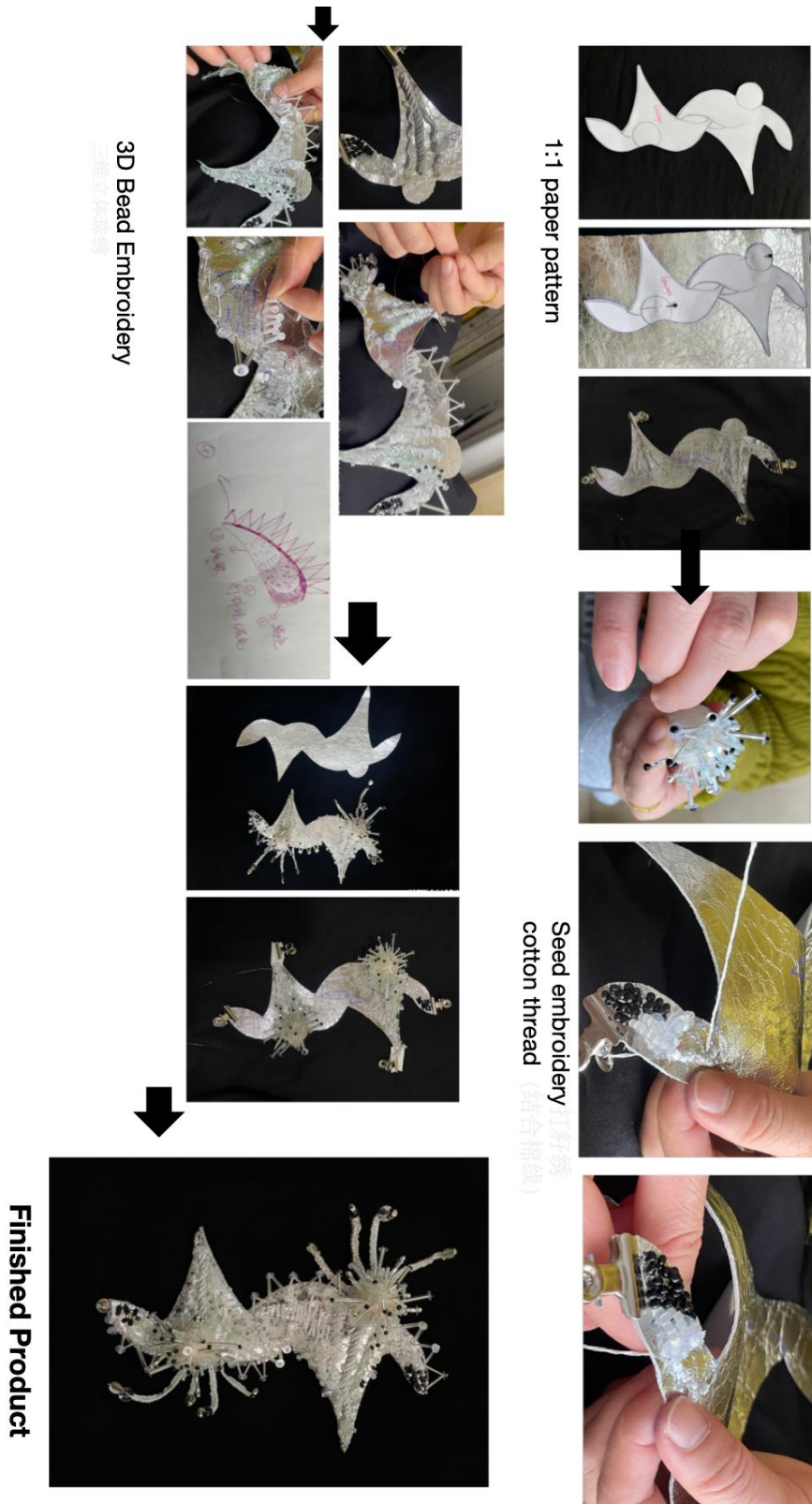


Figures 73 AI Laser cutting Vector Pattern Drawing Software



Figures 74 AI Laser cutting Vector Pattern Process

(5) Production Process 1 Earrings



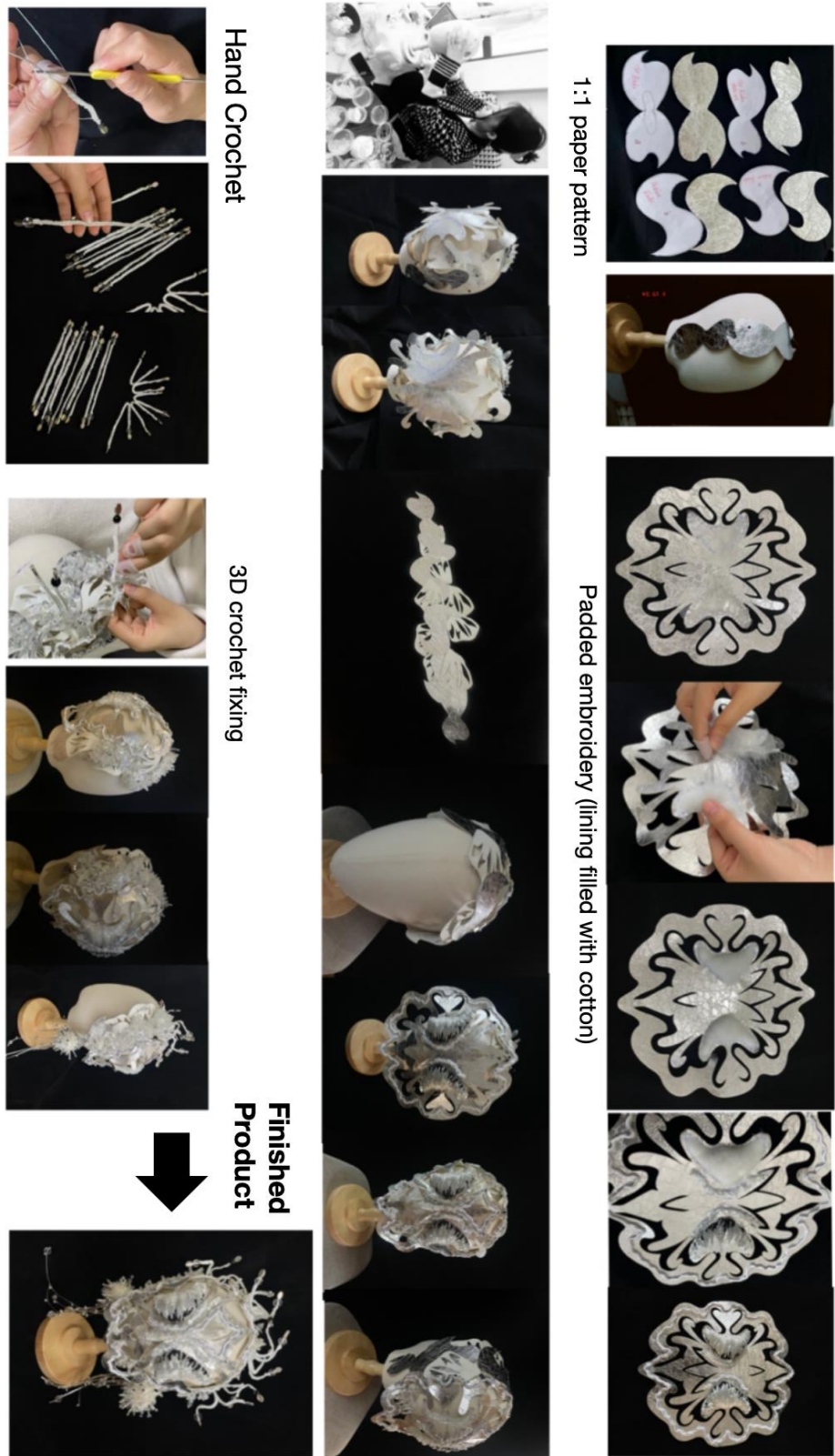
Figures 75 Production Process-1 Earrings

(6) Production Process 2 Necklaces



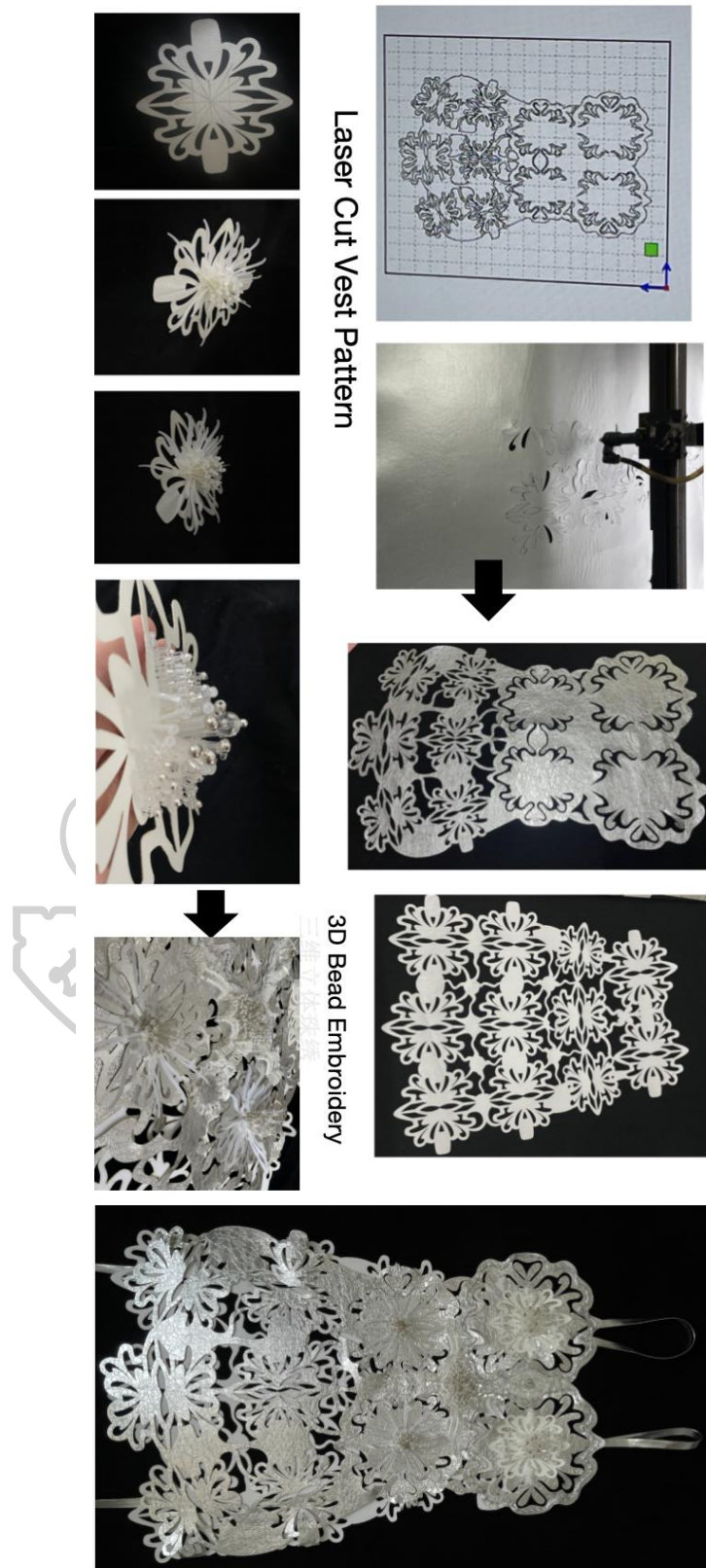
Figures 76 Production Process-2 Necklaces

(7) Production Process 3 Hat



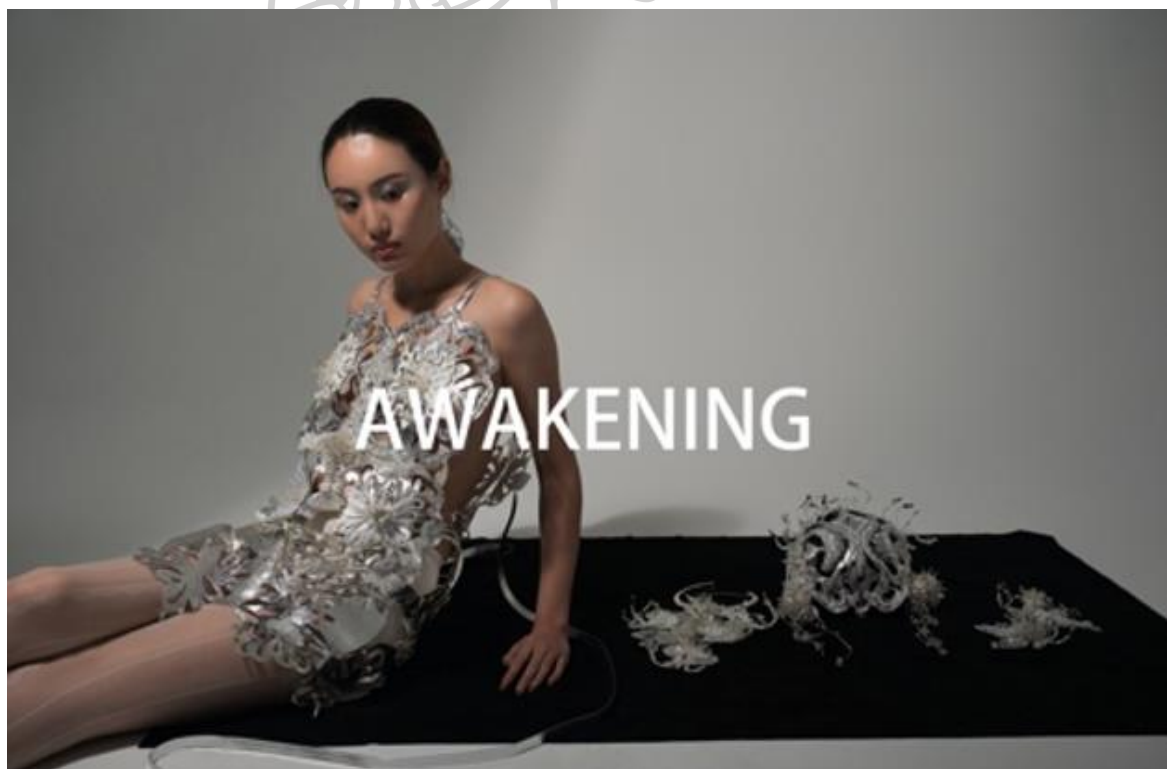
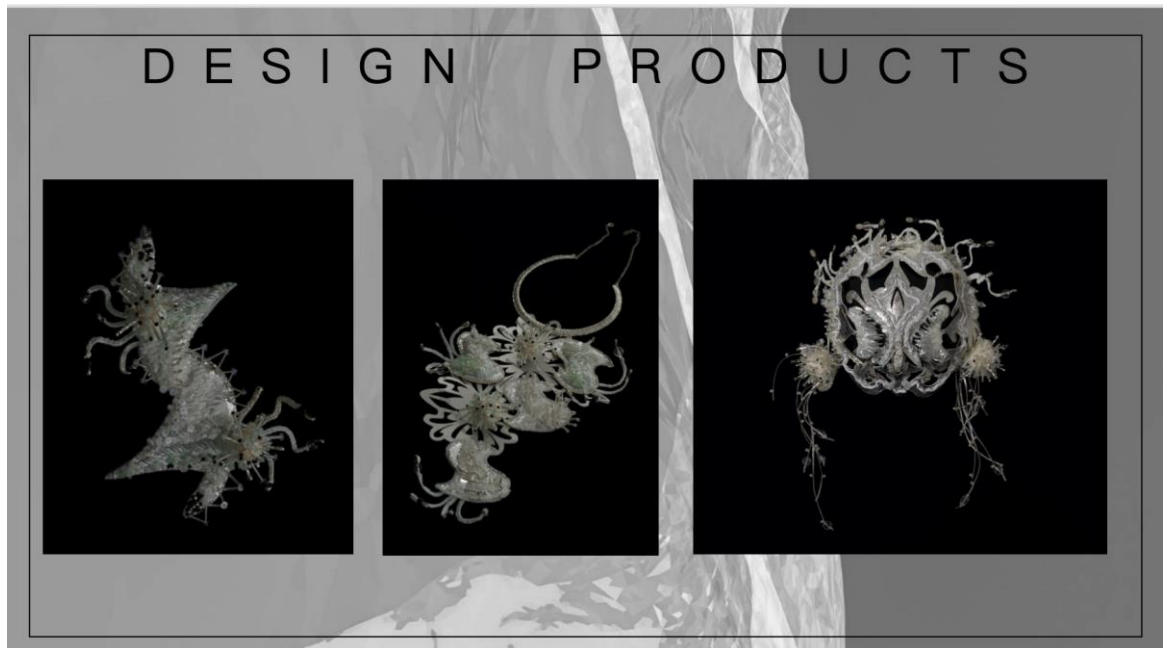
Figures 77 Production Process-3 Hat

(8) Production Process 4 Sling

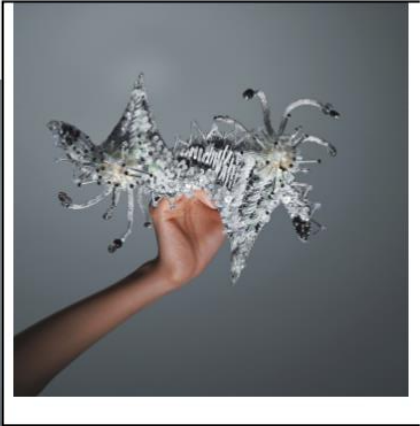


Figures 78 Production Process-4 Sling

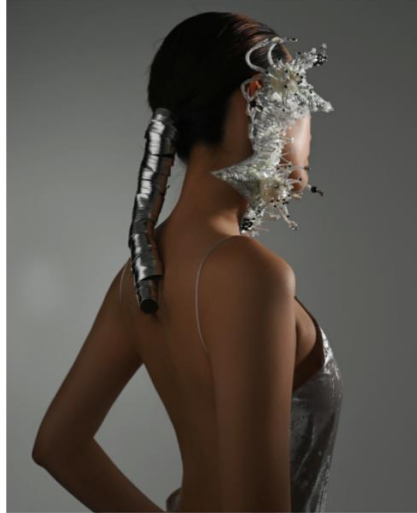
(9) Final Design Products



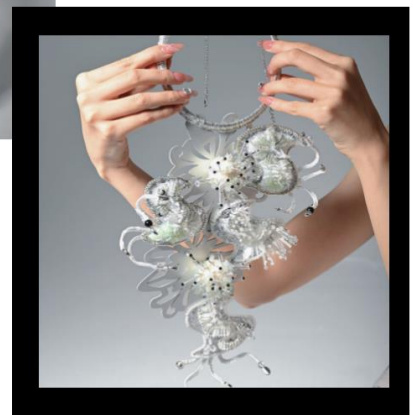
Figures 79 Final Design Products



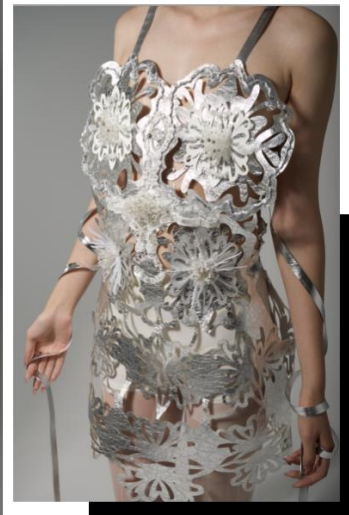
9/1



9/2



9/3



9/4

Figures 80 Design Showcase

4.2 Conclusion

The series presents a variety of materials such as overglass bead embroidery, hand crochet, cotton thread, plant leather cutting, etc. The colour, texture and pattern elements of plant patterns are extracted to create plant-inspired wearable accessories. In the design, crochet is mixed with beads to form a coordinated combination of leather and beads, which performs a secondary transformation of bead embroidery into a three-dimensional surface design. (Tang Sha, 2015) By using multi-class materials for three-dimensional bead embroidery, the expression method is more flexible and not limited to a single form of expression.

Through the combination of mixed-media materials and multiple forms of technical expression, following a certain law and order, and using a unique three-dimensional presentation method, the series presents the visual effect of three-dimensional surface design. The bead embroidery is expressed in the form of relief bead embroidery and three-dimensional bead embroidery, integrating Chinese and Western bead embroidery expressions for innovative design (Wang, 2019). This design work makes the design of wearable accessories extend to three-dimensional space, presenting multi-dimensional three-dimensional effects, and makes a good design idea for this study of the two-dimensional shift from traditional Xiamen bead embroidery techniques to three-dimensional surface design. (Sand, 2015)



Figures 81 MFA Final Examination Site

CHAPTER 5

CONCLUSION

5.1 Summary of the Study

Through an in-depth study of the 3D surface design inspired by traditional Xiamen bead embroidery, we have reached a number of important conclusions. Firstly, we understand the cultural background and craft characteristics of Xiamen bead embroidery and recognise its importance to traditional cultural heritage. Secondly, by comparatively analysing the relationship between Xiamen bead embroidery and 3D surface design, we have discovered the convergence points and innovative space between the two (Julie, 2019). As for the research methodology, we applied a variety of data analyses and experimental methods to study Xiamen bead embroidery in depth from an artist's point of view and from a contemporary aesthetic perspective. Finally, in the conclusion, we summarise the main findings of our research and point out their significance in promoting the development and heritage of Xiamen bead embroidery (Giltsoff, 1971).

This thesis analyses the various dimensions of Xiamen bead embroidery and summarises the combination of its material with mixed media, puts forward innovative considerations for exploring Xiamen bead embroidery in three-dimensional surface design, conducts research on design practise, and concludes that: Xiamen bead embroidery, a kind of traditional handicraft in the southern Fujian region of China, is also fused with innovation in modern times. It has already exceeded the scope of the two-dimensional level and continues to expand to the three-dimensional level (Sand, 2015).

The unique charm of Xiamen bead embroidery has continuously expanded to the three-dimensional level (Julie, 2019). Through the variety of techniques and unconventional expressions, bead embroidery can convey various themes and visual effects. Xiamen bead embroidery has a good ability to express the three-dimensional surface design, whether by using external simple elements or to show the inner meaning of bead embroidery (Chenghuan, 2022). This study changes the simple, flat

art form of conventional bead embroidery and realises a breakthrough in the spatial dimension of bead embroidery with a comprehensive, three-dimensional and innovative approach that brings both decorative, functional and inherited artistic charm to the design (Pan, 2019).

The aim of this thesis is to explore the balance between Xiamen bead embroidery and three-dimensional surface design through this research and practise, to appropriately present the contemporary aesthetics of traditional Chinese handicrafts with moderate bead embroidery expressions, and to develop and innovate while inheriting traditional culture and handicrafts.

The theoretical research and subsequent practical exploration of this work have effectively shown that Xiamen bead embroidery can be well combined with the corresponding theme through its suitable three-dimensional surface shape, and at the same time can be fused with the modern aesthetic design language, which is a fusion of East and West and an orderly integration of ancient and modern cultures in modern design. Research and analyses show that three-dimensional bead embroidery is more characteristic of modern design than traditional flat bead embroidery in terms of decoration and expression of effect. The three-dimensional production enhances the sense of space and texture effect and emphasises the layering and modelling structure of the product (Ahmed, 2021).

5.2 Key findings

There were also challenges and limitations during the research process. For example, in the data collection and experimental analysis phase, there were limitations in data collection and sample selection, which affected the objectivity and credibility of the research findings. In addition, there were some shortcomings in the selection and application of research methods, which need to be further refined and improved. Therefore, in future research, it is necessary to pay more attention to the scientificity and reliability of research methodology, minimise bias and errors and improve the credibility and replicability of research results.

5.3 Suggestions and Guidance for the Development of Bead Embroidery in Xiamen

Based on the research results, some suggestions and guidelines are proposed for the development of Xiamen bead embroidery. Firstly, the protection and inheritance of Xiamen bead embroidery intangible cultural heritage of beadwork in Xiamen should be strengthened. In addition, emphasis should be placed on nurturing the younger generation of talents in the field of bead embroidery to promote their innovation and development in the field of contemporary art (Liang, 2023). Secondly, bead embroidery artists and designers can be encouraged to actively use modern technological means and design concepts to create more contemporary and creative works, thus expanding the scope of application of Xiamen bead embroidery in various fields (Sindhu & Jahan, 2018).

At the same time, the government and relevant institutions should increase support and investment in the bead embroidery industry in Xiamen, encourage enterprises and social organisations to participate in the development of the bead embroidery industry in Xiamen, and jointly promote the sustainable development of the bead embroidery industry in Xiamen.



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