

扎染技艺

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TIE-DYE TECHNIQUES



内容提要

扎染是一种独特的非遗手工技艺，历史悠久，纹样千变万化，适合于设计创作。本书以任务实施的方式，分为五个模块，分别从扎染的认知，纹样设计，扎结技艺，染色技艺，扎染产品的设计与制作进行对扎染手工艺的探索与实践，致力于培养学生的创新思维能力，具有工匠精神的实践能力以及良好的审美素养，职业素养。书中配有实际的案例以及详细的解析，图文并茂，适合高职高专院校以及非遗爱好者学习使用。

Abstract

Tie-dye is a unique intangible cultural heritage handicraft with a long history and various patterns, which is suitable for design and creation. This book is divided into five modules by task implementation. It explores and practices tie-dye craftsmanship from the cognition of tie-dye, pattern design, tie-knotting skills, dyeing skills, and the design and production of tie-dye products. It is committed to cultivating students' innovative thinking ability, practical ability of craftsmanship spirit and good aesthetic quality. Professionalism. The book contains practical cases and detailed analysis, with pictures and texts. It is suitable for higher vocational colleges and intangible cultural heritage enthusiasts to learn and use.

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模块一 扎染技艺的认知

Module I Cognition of tie-dyeing skills

任务一 传统印染技艺介绍

Task I Introduction to Traditional Printing and Dyeing Techniques

任务目标

Mission Objectives

1. 了解传统印染技艺的发展与演变简史
1. Understand the brief history of the development and evolution of traditional printing and dyeing techniques
2. 了解传统印染技艺的特征
2. Understand the characteristics of traditional printing and dyeing techniques

任务描述

Task Description

我国传统印染技术有着悠久的历史，通过对传统印染的种类及特点的了解，熟悉印染技术的特点以及与织物的关系。

China's traditional printing and dyeing technology has a long history. Through understanding the types and characteristics of traditional printing and dyeing, we are familiar with the characteristics of printing and dyeing technology and its relationship with fabrics.

任务要求

Mission Requirements

通过本课程的学习，学生需要掌握中国传统印染技艺的类型以及基本特点。

Through the study of this course, students need to master the types and basic characteristics of traditional printing and dyeing skills in China.

任务实施

Task implementation

一、课前导学

二、 I.Pre-class Guidance

传统印染技艺是通过不同的染色技法在织物上呈现花纹的手段，播放幻灯片或者视频文件，让学生了解传统印花工艺的图案纹样的直观特征。尝试分析形成花纹的原理。

Traditional printing and dyeing techniques are used to present patterns on fabrics by different dyeing techniques. Students can understand the intuitive characteristics of patterns of traditional printing techniques by playing slides or video files. Try to analyze the principle of pattern formation.

二、课堂教学

II. Classroom Teaching

从文献记载来看，我国的传统印染技术历史悠久，《后汉书》有记载：“（哀劳人）……织染采文绣，罽毼帛叠，兰干细布，织成文章如绫锦”。说明中国的印染技术可以追溯到秦汉时期，当时的人们通过染，织，绣等技术来制作织物上的花纹。

Judging from the literature records, China's traditional printing and dyeing technology has a long history. According to the Book of the Later Han, "(I am sorry for the painful people) ... Weaving, dyeing, and picking embroidery, wrapping and folding silk, and weaving fine cloth with blue stem, which is like a silk brocade." It shows that the printing and dyeing technology in China can be traced back to the Qin and Han Dynasties, when people made patterns on fabrics through dyeing, weaving, embroidery and other techniques.

古代印染技术经历了画缣时期，经过漫长的发展，出现了手绘与印染结合的方法，通过不断的演变，呈现出不同的印及染色的方法，其中具有代表性的有以下几种：

Ancient printing and dyeing technology has experienced a long period of painting and dyeing. After a long period of development, a combination of hand drawing and printing and dyeing has emerged. Through continuous evolution, different printing and dyeing methods have been presented, of which the following are representative:

(一) 凸版印花

(I) Relief printing

凸版印花的工艺原理，类似于当代人盖图章，是最早取代手绘的印花工艺。制作方法是將雕刻好花纹的凸版，蘸上染料，然后拓印到布料上面。凸版的材质在历史发展的各个时期有所不同。在新石器时代，发现了凸版印刷的陶器，还可以考证的最早的凸版印花的工具。在清代，除了汉族，少数民族也广泛使用凸版印花，凸版的材料也使用木质的了，清代的维吾尔族就使用花木滚贺印花戳印花纹。有史学家认为，唐代的木板印刷，宋代的活字印刷有可能是受到凸版印花工艺的影响。现代滚筒印花技术也是在此基础上逐渐形成与完善。

The principle of relief printing, similar to contemporary stamping, is the earliest replacement of hand-painted printing. The method of making is to carve the relief pattern, dip it in dye, and then rub it on the cloth. The material of the relief plate is different in different periods of historical development. In the Neolithic Age, relief printing pottery was discovered, which can also be verified as the earliest relief printing tool. In the Qing Dynasty, in addition to the Han nationality, ethnic minorities also widely used relief printing, and the materials of relief printing were also wooden. In the Qing Dynasty, the Uyghur people used flowers and trees to stamp the printing patterns. Some historians believe that the woodblock printing in the Tang Dynasty and the movable-type printing in the Song Dynasty may be affected by the relief printing technology. Modern roller printing technology is also gradually formed and perfected on this basis.



图 1.1.1 印染工具（出土文物）

Figure 1.1.1 Printing and Dyeing Tools (Unearthed Cultural Relics)

（二）夹缬

(II) Indigo Print

传统夹缬属于防染染色工艺，与蜡缬，绞缬属于同一个类别的织物防染染色工艺。工艺原理是用雕刻出两块相同的镂空木板，将织物折叠夹在两块木板中间，用绳子捆好，将染液注入镂空的花纹里，或者入染缸进行染色，晾干后，被夹住的部分保留布料的原色，镂空的部分形成花纹。早期的染液稀薄，容易渗透进被夹的部分，造成花纹不清晰，在宋代进行了改良，在染料中加入胶质，解决了染液渗润的问题。传统夹缬可以说是当代平网印花的前身。

The traditional Indigo Print belongs to the anti-dyeing process, and belongs to the same category of fabric anti-dyeing process as Indigo Print and Indigo Print. The process principle is to carve two identical hollowed-out wooden boards, fold and clamp the fabric between the two wooden boards, tie it with a rope, inject dye into the hollowed-out pattern, or dye it in a dyeing vat. After drying, the clamped part retains the original color of the fabric, and the hollowed-out part forms a pattern. The early

dye was thin and easy to penetrate into the clamped part, resulting in unclear patterns. It was improved in the Song Dynasty by adding gum to the dye to solve the problem of dye penetration. Traditional Indigo Print is the predecessor of contemporary flat screen printing.



图 1.1.2 夹纈工具

Figure 1.1.2 Indigo Printing Tool



图 1.1.3 夹纈工艺

Figure 1.1.3 Process of Indigo Print

(三) 蜡缬

(III) Indigo Print

蜡缬即蜡染，属于防染印花工艺。蜡染的工艺是先用腊刀在织物上画出设计的花纹，待腊凝固后进行染色，被蜡封住的地方保留织物的原色，形成花纹。也有反过来用腊覆盖除花纹以外的其他部分的做法，染色后底色被蜡封住保持织物原色，花纹被染色。另外也有类似夹缬的处理方式，用两块镂空花版夹住织物，在镂空的部分注入蜡液，染色后用水煮的方式脱蜡处理，形成花纹。由于蜡冷却后有一定的脆性，蜡封后的地方会呈现自然的裂纹，具有独特的艺术美感。

Indigo Print is batik, which belongs to the anti-dyeing printing process. The process of batik is to first draw the designed pattern on the fabric with a wax knife, dye it after the wax solidifies, and retain the original color of the fabric where it is sealed by wax to form the pattern. There is also the practice of covering other parts except patterns with wax in turn. After dyeing, the background color is sealed by wax to keep the original color of the fabric and the patterns are dyed. In addition, there is a similar treatment method for Indigo Print. Two hollowed-out patterns are used to clamp the fabric, and wax liquid is injected into the hollowed-out part. After dyeing, it is dewaxed by boiling with water to form patterns. Since the wax is brittle after cooling, the place after wax sealing will show natural cracks, with a unique artistic aesthetics.



图 1.1.4 蜡染工艺

Figure 1.1.4 Batik Process

（四）绞缬

(IV) Indigo Print

绞缬即扎染，唐代就已经成熟。扎染也属于防染染色技术，工具材料十分简单，但是变化丰富。工艺原理主要是通过对织物的扎结，捆绑等手法达到防染的效果。在扎染的工艺中，扎结的花纹，手法，用力的轻重，材料的使用不同，染色的次数与方法不同，均呈现出不同的效果。

Jiaoxie is a tie-dye, which has been mature since the Tang Dynasty. Tie dyeing is also an anti-dyeing technology. The tools and materials are very simple but rich in variations. The principle of technology is to achieve the effect of anti-dyeing by binding the fabric. In the process of tie-dyeing, the patterns, techniques, the degree of force, the use of materials, and the times and methods of dyeing all show different effects.



图 1.1.5 绞纈

Figure 1.1.5 Indigo Print

拓展练习

Extension exercise

1. 收集整理各种中国传统印染的图片资料
1. Collect and sort out various pictures of traditional printing and dyeing in China
2. 分析传统印染的工艺原理与纹样特征
2. Analyze the process principle and pattern characteristics of traditional printing and dyeing

任务二 中国传统扎染概况

Task II Overview of China's Traditional Tie-dyeing

任务目标

Task Objectives

1. 了解中国扎染的发展与演变过程

1. Understand the development and evolution of tie-dye in China

2. 熟悉扎染技艺的基本特征

2. Be familiar with the basic characteristics of tie-dyeing techniques

任务描述

Task Description

中国扎染是在长期的生产劳动实践中不断发展演变而来，通过对中国扎染的历代演变了解扎染技艺的历史及文化，以及其审美特征。

China's tie-dye has evolved from the long-term production and labor practice. Through the evolution of China's tie-dye, we can understand the history and culture of tie-dye technology and its aesthetic characteristics.

任务要求

Mission Requirements

通过本课程的学习，了解中国扎染的发展阶段以及工艺特征。

Through the study of this course, we will understand the development stage and process characteristics of tie-dye in China.

任务实施

Task implementation

一、课前导学

I. Pre-class Guidance

请学生欣赏不同历史时期的扎染纹样，以及现存在各个少数民族地区的扎染织物图片，思考扎染的人文思想与工艺特征。

Students are invited to appreciate the tie-dye patterns in different historical periods, as well as the pictures of tie-dye fabrics in various ethnic minority areas, and think about the humanistic thoughts and craftsmanship characteristics of tie-dye.

三、课堂教学

四、Classroom teaching

(一) 中国扎染发展简史

(I) A brief history of tie-dye development in China

扎染具有悠久的历史，古时又称扎缬，绞缬或染缬，是我国传统的手工染色技术之一。

Tie-dyeing has a long history. In ancient times, it was also known as zhaxie, jiaoxie or dyeing xie. It is one of the traditional manual dyeing techniques in China.

早在周代以前，中国染缬艺术已经初具雏形。《中国染织史》中，吴淑生写道：“渐石器时代，我们的祖先在应用矿物质染料的同时，也选用天然的植物染料。”又说：“经过长期的实践，逐步掌握和提高了各类植物染料的提取、染色等工艺技术，生产出绚丽灿烂、五彩缤纷的染织品。”这说明，染色研究经历了漫长的历史发展过程。

As early as the Zhou Dynasty, the art of dyeing in China had taken shape. In the History of Dyeing and Weaving in China, Jiong Shusheng wrote, "In the Oligolithic Age, our ancestors used natural plant dyes while applying mineral dyes." "After long-term practice, we have gradually mastered and improved the extraction, dyeing and other technologies of various plant dyes to produce brilliant and colorful dyeing products," he said. This shows that the study of dyeing has experienced a long history.

据记载，在秦汉时期，绞缬就已经出现。在《二仪实录》有记录，“秦汉间有染缬法，不知何人所造，陈梁间贵贱通服之。东晋时期，就有了批量生产绞缬绸缎的能力，绞缬工艺早在东晋时期已经成熟。

According to records, Jiaoxiao appeared in the Qin and Han dynasties. It is recorded in the Veritable Records of Eryi that, "There was the Indigo Printing Method in the Qin and Han dynasties. I don't know who made it, but the noble and

cheap people in Chen and Liang convinced me. During the Eastern Jin Dynasty, it had the ability to mass produce Jiaoxiu silk and satin, and the Jiaoxiu process had matured as early as the Eastern Jin Dynasty.

扎染在唐代盛行。唐代诗人白居易有诗一句：“黄夹缬林寒有叶，碧琉璃水净无风。”又说：“成都新夹缬，梁汉碎胭脂。”这说明在唐代，扎染是当时的染色风格之一，而后面一句则说明当时的成都已经非常盛行扎染。从新疆维吾尔自治区博物馆收藏的新疆阿斯塔纳北区 117 号墓出土的唐代棕色绞缬菱花当时的扎染工艺丰富多彩，当时著名的纹样有鱼子缬、撮晕缬、玛瑙缬、鹿胎缬、蚕儿缬、醉眼缬等等。

Figure 1.2.1 Large Red-gauze Indigo Print of Astana Tombs, the 20th Jianyuan Year of the Western Liang Dynasty (384)

Tie-dyeing prevailed in the Tang Dynasty. Bai Juyi, a poet of the Tang Dynasty, wrote a poem: "The yellow jaded valerian leaves are cold, and the blue glass water is pure without wind." He added, "Chengdu Xinjia Indigo Print is made of crushed rouge of Liang Han." This shows that tie-dye was one of the dyeing styles at that time in the Tang Dynasty, and the following sentence shows that tie-dye was already very popular in Chengdu at that time. Unearthed from Tomb No. 117 in the north area of Astana, Xinjiang, collected by the Museum of Xinjiang Uygur Autonomous Region, the brown Giant Valeriana in the Tang Dynasty had abundant and colorful tie-dyeing techniques at that time. The famous patterns at that time included Indigo Princess, Indigo Princess, Agate Indigo Princess, Indigo Princess, Can'er Indigo Princess, Indigo Princess, etc.



图 1.2.1 阿斯塔纳墓群的大红绞缬绢，西凉建元二十年（公元 384）

**Figure 1.2.1 Large Red-gauze Indigo Print of Astana Tombs, the 20th
Jianyuan Year of the Western Liang Dynasty (384)**

在唐代的绘画作品中，扎染也有视觉记载，如唐代画家张萱的《捣练图》，此图描绘了唐代城市妇女在捣练、厘线、熨平、缝制劳动操作时的情景，其中贵妇的上衣、小女的着装都是扎染手工艺制作。以表现贵族妇女著称的画家周昉的作品《簪花仕女图》，绢本设色，现藏，宁物馆，画面描写贵族妇女春夏之交赏花游园的情景。全图分为四段，分别描写如女们采花、看花、漫步和戏犬的情形。如再后的南唐画家顾闳中的《韩熙载夜宴图》中、妃子、歌姬、仕女等的服饰就是采用现代孔染中花型折叠串扎的方式的图案。从画面服装反映的扎染花型看，说明当时的扎染技艺已经达到前所未有的水平。

In Tang Dynasty paintings, tie-dye is also visually recorded. For example, Zhang Xuan, a painter in the Tang Dynasty, made a picture of urban women in the Tang Dynasty during making, straightening, ironing and sewing. Among them, the noblewoman's jacket and little girl's dress are made by tie-dye handicraft. Zhou Fang, a painter famous for aristocratic women, wrote the work "Hairpin Flower and Shinvu" with colored silk, which is now collected in the Ning Museum. The picture depicts the scene of aristocratic women enjoying flowers at the turn of spring and summer. The picture is divided into four sections, describing the scenes of women picking flowers, watching flowers, walking and playing with dogs. For example, in Han Xizai's Night Revels by Gu Hongzhong, a painter in the Southern Tang Dynasty, the costumes of concubines, singers, and ladies are folded and tied in the pattern of modern hole dyeing. From the tie-dye pattern reflected in the costume, it shows that the tie-dye technique at that time has reached an unprecedented level.



图 1.2.2 绞纈绢片 唐代（618-907） 新疆阿斯塔那墓群出土

Figure 1.2.2 Jiaoxue Silk Slices Unearthed from Tombs in Astana, Xinjiang in the Tang Dynasty (618-907)



图 1.2.3 捣练图

Figure 1.2.3 Tamping Diagram

五代时期扎染仍然沿袭唐代的繁盛，继续发展。宋代，受五代时期的影响，扎染制品趋于豪华，且价格不菲。因当时王官员族相互攀比，争相使用，促使扎染工艺得到了进一步的发展与继承。北宋时期扎染发展更为深远，民间盛行扎染服饰。宋仁宗赵祯时期，由于他奉行节俭，对于盛极一时的扎染他认为费工费时，这些工艺，尤以“鹿胎纈”和“撮晕纈”最甚，《宋史與服志》载天圣二年诏命：

“在京士庶，不得衣黑褐地白花衣服，并蓝、黄紫地撮晕花样。”宋代朝廷的诏令对扎染的发展无疑是一种扼杀。但这一时期，远离京城的农村仍流行着扎染技艺，尤其是西南边远的少数民族地区，扎染仍保持着它古朴、艳丽的身影。

During the Five Dynasties, tie-dyeing continued to develop in line with the prosperity of the Tang Dynasty. In the Song Dynasty, due to the influence of the Five Dynasties, tie-dyed products tended to be luxurious and expensive. At that time, the royal officials competed with each other and rushed to use them, which promoted the further development and inheritance of tie-dyeing technology. In the Northern Song Dynasty, tie-dye developed more profoundly, and tie-dye clothing was popular among the people. During the reign of Song Renzong Zhao Zhen, due to his frugality, he believed that it was labor-consuming and time-consuming to carry out the tie-dyeing, especially the "Deer Tire Indigo Print" and "Cuoyun Indigo Print". According to the Records of Historical Costumes of the Song Dynasty, the imperial edict of the second year of Tiansheng was issued: "In the capital, people should not wear black, brown, white, and blue and yellow-purple clothes." The imperial edicts of the Song Dynasty undoubtedly stifled the development of tie-dye. However, during this period, tie-dyeing was still popular in rural areas far away from Beijing, especially in remote ethnic minority areas in the southwest, where tie-dyeing still maintained its quaint and gorgeous figure.

元代时期染织技术继续发展。染织局和染坊的建立，使历代无序的印染业走上了系统化的、有序发展的途径。在这个阶段，染坊也分为蓝坊、红坊、绿坊等。分工的详细，进一步带来了染织业的发展和品种的增多，这是扎染的又一鼎盛时期。

Dyeing and weaving technology continued to develop in the Yuan Dynasty. The establishment of the dyeing and weaving bureau and dyeing workshop has made the disorderly printing and dyeing industry develop systematically and orderly. At this stage, dyeing workshops are also divided into blue workshops, red workshops and green workshops. The detailed division of labor has further led to the development of the dyeing and weaving industry and the increase of varieties, which is another peak period of tie-dyeing.

到了明清时期，扎染开始复兴，种类丰富，技法多样，染色植物的扩展使色彩极其丰富。台湾云林科技大学视觉传播设计系教授曾启雄在他的《中国植物染色简史》里这样描述道：“清朝曹雪芹所写成的《红楼梦》，一直受到读者的喜爱。在文中是否是因为如此的家庭背景的关系，导致曹雪芹所写的《红楼梦》出现了丰富的色彩词汇。全文共出现有 763 个与色彩相关的词汇，这些词汇可以分成八个色系，其中以红色系为最多。共有红、大红、朱、赤、桃红、银红、丹、水红、绛、赭、粉红、石榴红、朱红、猩、猩红、紫绛、绛红、海棠红、大赤、硬红、嫣红、荔枝色等 22 种，这只是红色系的色彩，说明当时的植物染料的使用已经发展到很高水平，色彩的发展也会促进扎染技术的更新。

In the Ming and Qing Dynasties, tie-dyeing began to revive, with rich species and diverse techniques. The expansion of dyeing plants made the color extremely rich. Ceng Qixiong, a professor at the Department of Visual Communication Design of Yunlin University of Science and Technology in Taiwan, described in his Brief History of Plant Dyeing in China: "The Dream of the Red Chamber written by Cao Xueqin in the Qing Dynasty has always been popular with readers. Whether it is because of such family background in the article, Cao Xueqin's Dream of Red Mansions appeared rich color words. There are 763 color-related vocabularies in the text, which can be divided into eight colors, of which red is the most. There are 22 colors in total, including red, bright red, vermilion, red, peach red, silver red, red, water red, crimson, ochre, pink, pomegranate red, vermilion, scarlet, purple red, crimson, begonia red, red, hard red, bright red and litchi. These are only red colors, indicating that the use of plant dyes at that time has developed to a high level, and the development of color will also promote the renewal of tie-dye technology.

辛亥革命以后，经济市场的扩大极大地刺激了手工艺品的生产，扎染技艺有了更广泛的发展，扎染生产开始批量化。

After the 1911 Revolution, the expansion of the economic market greatly stimulated the production of handicrafts, and the tie-dye technology has been developed more widely, and tie-dye production began to be mass-produced.

20 世纪 80 年代，随着改革开放，在大力发展旅游产品的中央精神指导下，扎染产品曾经风靡一时，其主要生产地是云南的昆明、大理，四川的自贡、南充，江苏的南通以及湖南的湘西。云南大理和昆明主要以生产发展传统图案为主。四川自贡主要以传统针法与现代审美相结合，创造出线条与写意的艺术手法，产生了轰动效应。而江苏南通扎染，在吸取传统扎染手法的同时，向日本学习扎染技术，成就了自己的风格。随着世界向更加和谐、更加生态的目标迈进，人们对物质文化生活的要求也在改变，远离喧嚣、远离污染成为人们的生活常态。

In the 1980s, with the reform and opening-up and under the guidance of the central government, tie-dye products were once popular. They were mainly produced in Kunming and Dali in Yunnan, Zigong and Nanchong in Sichuan, Nantong in Jiangsu and western Hunan. Dali and Kunming in Yunnan mainly adopt traditional patterns for production and development. Zigong, Sichuan mainly combines traditional stitches with modern aesthetics to create lines and freehand brushwork, which has produced a sensational effect. Jiangsu Nantong tie-dye, while absorbing traditional tie-dye techniques, learned tie-dye techniques from Japan, and achieved its own style. As the world moves towards a more harmonious and ecological goal, people's requirements for material and cultural life are also changing. It has become the normal state of people's life to stay away from noise and pollution.

随着大工业生产的兴起，历时千年的扎染工艺几乎失传。当前随着人们物质生活和文化生活水平的不断提高，以及服饰时装化的步步升温，使得扎染艺术倍受国内外消费者和时装界的追求和青睐。

With the rise of large-scale industrial production, the thousand-year-old tie-dyeing process has almost been lost. At present, with the continuous improvement of people's material and cultural living standards, as well as the increasing trend of fashionable clothing, tie-dye art has been pursued and favored by consumers and fashion circles at home and abroad.

（二）各个地区扎染的特点

(II) Characteristics of tie-dyeing in different regions

1、大理扎染特点

1. Characteristics of Tie-dyeing in Dali

大理自古以来，地少人多，又是南国的都市，这里的手工制品非常发达。大理的每家每户几乎都会做扎染，特别是周城，被誉为白族的扎染之乡。大理的扎染扎花以缝为主，缝扎结合，表现范围广，刻画细腻，变幻无穷。图案多为花草植物，鸟兽虫鱼，自然景观，构图的形式上以适合纹样居多，在制作的过程中还有一个重要的特点就是采用白色的棉线手工制作图案的边缘线，这样既强调了形状，有增添了扎染的工艺性。一般多采用靛蓝染色，手工反复浸染工艺成以花形为中心，变幻玄妙的多层次晕纹，凝重素雅，古朴精致。

Since ancient times, Dali has had a small area and a large population. It is also the city of the south, where handicrafts are very developed. Almost every household in Dali can do tie-dye, especially Zhoucheng, which is known as the hometown of Bai people. The tie-dye and tie-flowers in Dali are mainly sewn and combined, with a wide range of expression, delicate description and endless changes. Most of the patterns are flowers, plants, birds, animals, insects, fish, and natural landscapes. The composition is mostly suitable for patterns. Another important feature in the production process is that white cotton threads are used to manually make the edge lines of the pattern, which not only emphasizes the shape, but also adds the craftsmanship of tie-dyeing. Generally, indigo dyeing is adopted, and the manual repeated dyeing process is used to form a multi-layered halo pattern with the flower shape as the center, which is elegant, simple and exquisite.

2、彝族扎染特点

3、2.Characteristics of Yi tie-dye

彝族扎染继承并发挥传统民间扎花工艺，图案新颖，做工精细，呈现出古朴、典雅、自然、大方的特点。尤其是巍山彝族，既有实用性，又具有非常高的艺术欣赏价值。是装点生活的，美化生活的精致手工艺。彝族扎染一般也采用蓝靛染料，根据各种图案的扎染布，制作衣裙，围腰，背面，床单，门帘等等服饰品以及室内软装饰品。用扎染制作的衣裙、床单、门窗、窗帘穿在身上，挂在室内，

别一番古朴、典雅的风味。彝族扎染有蓝染、彩染、贴花等系列产品。制成品有台布、壁挂、门帘、衣服、裙、帽、包、地毯及各种面料。

Yi tie-dye inherits and gives full play to the traditional folk tie-dye technique, with novel patterns and exquisite workmanship, showing the characteristics of quaintness, elegance, nature and elegance. Especially, the Yi nationality in Weishan has both practicality and high artistic appreciation value. It is a delicate handicraft that decorates and beautifies life. Yi tie-dye is also generally made of indigo dyes. According to various patterns of tie-dye cloth, dresses, waistbands, backs, bed sheets, door curtains and other clothing and interior soft decorations are made. Dresses, bed sheets, doors and windows, and curtains made of tie-dye are worn on the body and hung indoors, giving off a simple and elegant flavor. Yi tie-dye has blue dye, color dye, decal and other series of products. Finished products include tablecloth, wall hangings, door curtains, clothes, skirt, hat, bag, carpet and various fabrics.

4、苗族扎染

5、3.Miao tie-dye

湖南湘西是苗族的集居地，湘西的凤凰流传着民间的传统扎染，主要用蓝淀染布，当地常用的针法为“绞扎”，具体的做法是，在正面嵌一根麻线，从背面绞扎，把麻绳缝裹住，达到防染的作用，拆线时，会呈现出一条清晰的线条。当地将串缝的花纹称为“蜈蚣线”，对折串缝的叫“单蜈蚣线”，四折串缝的叫“双蜈蚣线”。另外“狗足花”就是六瓣花纹，“蝴蝶花”是圆形花瓣。

Xiangxi, Hunan is the home of Miao people. Traditional tie-dyeing is spread in Phoenix in Xiangxi, Hunan, which mainly uses blue lake dyeing cloth. The commonly used local stitching method is "twisting". The specific method is to insert a hemp thread on the front, twist it from the back, and wrap the hemp rope seam to achieve the function of anti-dyeing. When the stitches are removed, a clear line will appear. The local people call the stitched patterns "centipede threads", the double-fold stitched patterns "single-centipede threads", and the four-fold stitched patterns

"double-centipede threads". In addition, "Dogfoot Flower" is a six-petal pattern, and "Butterfly Flower" is a round petal.

6、黎族扎染

7、Li tie-dye

黎族的先扎染后织布，与别的民族先织布后扎染相比，图案既不失严谨，又增加了色彩的变化，层次更加鲜明丰富。这种自然天成的无层次色晕，为黎锦平添了几分姿彩，具有很强的艺术感染力。

Compared with other ethnic groups, the pattern of tie-dyeing is not only rigorous, but also increases the color change, and the layer is more distinctive and rich. This natural layerless color halo adds some color to Li Jinping and has strong artistic appeal.

5. 自贡扎染

5. Zigong tie-dye

自贡扎染源于清代，历史悠久。是自贡传统的工艺美术品，包括“扎染、拔染、防染”等等。以隽秀、清新、淳朴、富有民间特色而名扬国内外。自贡扎染具有丰厚的地域文化特点，在吸取民间传统扎结方法的基础上，还对所染的布料进行精心制做，一般先在白布上描花，然后按照记号，用针绞缝捆紧，即所谓打点、断线、块面三个步骤。这样制做出来的图案，吸收了石刻的粗犷、汉砖的残缺、钟鼎文的苍劲、剪纸的稚拙，具有丰富的表现力。

Zigong tie-dye originated from the Qing Dynasty with a long history. It is a traditional arts and crafts in Zigong, including "tie-dyeing, pull-dyeing and anti-dyeing". It is famous at home and abroad for its beautiful, fresh, simple and folk characteristics. Zigong tie-dye has abundant regional cultural characteristics. On the basis of absorbing the traditional folk knotting methods, the dyeing cloth is also carefully made. Generally, the white cloth is painted first, and then tied tightly with needles according to the marks, namely the so-called three steps of dotting, thread breaking and block surface. The patterns made in this way absorb the roughness of stone carvings, the incompleteness of Han bricks, the vigorousness of bell tripod scripts, and the childishness of paper-cutting, and have rich expression.

拓展练习

Extension exercise

1. 收集各个民族地区的扎染纹样
2. and collect tie-dye patterns from ethnic regions.
3. 根据收集的纹样，分析各个地区扎染纹样的特点
4. According to the collected patterns, analyze the characteristics of tie-dye patterns in various regions

任务三 扎染工艺流程简介

Task 3 Brief introduction to tie-dye process

任务目标

Mission Objectives

1. 了解扎染技艺的基本原理
2. Understand the basic principles of tie-dyeing techniques
3. 熟悉扎染的基本工艺流程
4. Be familiar with the basic process of tie-dyeing

任务描述

Task Description

扎染技艺是一种防染染色的手工技艺，在织物上形成花纹的过程主要分为“扎”“染”两个部分，通过了解扎染技艺的原理，掌握扎染技艺的基本工艺流程。

Tie-dyeing is a handicraft of anti-dyeing. The process of forming patterns on fabrics is mainly divided into two parts: "tie-dyeing" and "dyeing". By understanding the principle of tie-dyeing, students can master the basic process of tie-dyeing.

任务要求

Mission Requirements

通过学习本课程，学生需要熟悉扎染工艺的基本流程。

By studying this course, students need to be familiar with the basic process of tie-dyeing.

任务实施

Task implementation

一、课前导学

I. Pre-class Guidance

学生观看一组扎染的织物图片，了解扎纹样的基本形式与美感的表达元素，尝试分析其工艺原理。

Students watch a group of tie-dyed fabric pictures to understand the basic forms and aesthetic expression elements of tie patterns, and try to analyze their process principles.

二、课堂教学

II. Classroom Teaching

（一）扎染技艺的原理

(I) Principles of tie-dyeing techniques

扎染技艺分为扎结与染色两个部分，属于织物防染工艺。织物的品类、染料的特性以及防染的不同材料决定了扎染的效果。尝试扎结与染色的不同操作程，体会不同材料、工具与染色效果的对应关系，才能通过扎与染的完美结合染出理想的作品。

Tie-dyeing technology is divided into two parts: knotting and dyeing, which belong to fabric anti-dyeing technology. The type of fabric, the characteristics of dyes and the different materials used to prevent dyeing determine the effect of tie dyeing. Try different operation steps of knotting and dyeing, and understand the corresponding relationship between different materials, tools and dyeing effects, so as

to produce ideal works through the perfect combination of knotting and dyeing.

一般来说，扎染工艺流程的顺序是先扎后染。扎结过程是决定最后染色效果的关键。扎结的方法有很多，常见的有以针线缝制为主的扎结方法，有借助于道具的扎结方法，也有通过织物的折叠捆扎形成的扎结方法。不同扎结方法的选择，应遵循扎染纹样的设计要求进行。

Generally speaking, the tie-dye process sequence is tie-dye first and then dye. The ligation process is the key to determine the final staining effect. There are many methods of knotting. Common methods include knotting mainly by sewing needles and threads, knotting with props, and knotting formed by folding and binding fabrics. The selection of different binding methods should follow the design requirements of tie-dye patterns.

扎染工艺的染色过程也对染色的最后结果起着非常关键的作用。扎染的染色可以在不同的织物上进行，关键是选择的染料类别和染色工艺要与选择的织物类别相对应。除此之外，在利用化学类染料进行扎染的染色时，既要遵循染色工艺操作的规范，又要根据预期的染色效果人为地进行控制。

The dyeing process of the tie-dye process also plays a key role in the final result of dyeing. Tie dyeing can be carried out on different fabrics. The key is that the selected dye category and dyeing process should correspond to the selected fabric category. In addition, when using chemical dyes for tie-dyeing, it is necessary to follow the specifications of the dyeing process operation and artificially control it according to the expected dyeing effect.

（二）扎染的步骤与方法

(II) Steps and methods of tie-dyeing

扎染的工艺流程简单、易于操作。但是，如果不严格地按照操作顺序和步骤有计划、有目的地进行，会直接影响到最后的染色效果。严格按照操作规程进行扎染实践，是获得理想扎染织物的基本保障。扎染工艺的流程基本分为 10 个步骤：前处理、定形、描稿、扎结、浸色、晾干、水洗、固色、脱结、后整理。

The tie-dye process is simple and easy to operate. However, if the operation sequence and steps are not strictly followed in a planned and purposeful manner, the

final coloring effect will be directly affected. Tie-dyeing practice in strict accordance with the operating procedures is the basic guarantee for obtaining ideal tie-dye fabrics. The process of tie-dyeing is basically divided into 10 steps: pretreatment, shaping, tracing, knotting, color dipping, drying, washing, color fixing, deknitting and post-finishing.

1. 前处理

1. Pretreatment

对选用的织物进行简单的前期处理是非常必要的。首先对织物进行洗涤、退浆，为扎结做好准备。目的是退去织物表面的胶浆物质，从而使织物便于充分地吸收、渗润染料。操作方法也比较简单，首先将织物浸没于清水中，加入相当于织物重量 5% 的碱面或 5% 的洗衣粉，然后加温水煮 30 分钟左右，再用清水洗净、晾干后备用。

A simple pretreatment of the selected fabric is essential. First, the fabric is washed and desizing to prepare for binding. The purpose is to remove the mucilage on the surface of the fabric, so that the fabric can absorb and wet the dyes fully. The operation method is also relatively simple. First, immerse the fabric in clean water, add alkaline powder equivalent to 5% of the weight of the fabric or 5% of the washing powder, then heat and boil it in warm water for about 30 minutes, then wash it with clean water and dry it for later use.

2. 定形

2. Shaping

由于洗涤处理后的织物容易产生变形，所以有必要对织物进行定形处理。操作方法是用电烫斗将织物烫平。这个步骤既整理了织物的形变，又为接下来的描稿阶段提供了宜于操作的织物状态。

Since the fabric after washing treatment is prone to deformation, it is necessary to set the fabric. The operation method is to flatten the fabric with an electric ironing hopper. This step not only finishes the deformation of the fabric, but also provides a suitable state of the fabric for the following drawing stage.

3. 描稿

3. Drafting

描稿也称过稿。是将设计意图完整地体现在织物上,为扎结步骤能够有计划、有条理地进行做必要的准备。

Drawings are also called scripts. It is to embody the design intent completely on the fabric and make necessary preparations for the knotting steps to be carried out in a planned and organized manner.

4. 扎结

4. Tying

在扎染过程中扎结的步骤最为关键。这个步骤是利用不同的材料、不同的扎结方法对织物进行染色前的最后处理。操作方法很多,一般通过缝、捆、绑、抽、缠、绕、挡、拧、夹、搓等工作过程,对织物进行不同形式的扎结,但要根据染料的渗透特点和预期的染色效果决定扎结的松紧(图 1-11-图 1-13)。

The most critical step in tie-dyeing is the knotting process. This step is the final treatment before dyeing the fabric with different materials and different binding methods. There are many operation methods. Generally, the fabric is bound in different forms through sewing, binding, binding, drawing, winding, blocking, twisting, clamping, rubbing and other working processes, but the tightness of the knot should be determined according to the penetration cha

5. 浸色

5. Color dipping

浸色即是扎染工艺中的染色过程。是将扎结好的织物根据所对应的染料及染色工艺,放入适当的容器中进行染色处理。掌握不同染料的成分、助剂、配比等常识,是确保织物进行成功染色的前提。

Immersion is the dyeing process in the tie-dye process. The knotted fabric is put into an appropriate container for dyeing according to the corresponding dye and dyeing process. Mastering the common sense of composition, auxiliaries and proportion of different dyes is the premise to ensure the successful dyeing of fabrics.

6. 晾干

6. Drying

一般情况下，应将染色后的扎结织物在保持不脱结的状态下自然晾干。晾干的目的是为确保染料在织物中充分地浸渗，同时不使浮色渗透到扎结的纹样中，以确保染色的效果。有些特殊的染料在染色过程中，需要氧化的过程，这种情况下，染色后织物的自然晾干过程就更为必要了。

In general, the dyed binding fabric shall be dried naturally while keeping the knot. The purpose of air drying is to ensure that the dyes are fully impregnated in the fabric without allowing the floating color to penetrate into the knotted pattern, so as to ensure the effect of dying. Some special dyes require an oxidation process in the dyeing process. In this case, the natural drying process of the fabric after dyeing is more necessary.

7. 水洗

7. Water washing

水洗是将染色后晾干的织物保持未脱结的状态进行清水

Washing is to wash the dyed and dried fabrics with clean water in a state where they are not debonded.

洗涤的步骤。目的是将织物表层的浮色洗掉，以免脱结后多余的染料渗入被扎结的部分，影响染色效果。清水洗涤的步骤没有严格的标准限制，可以根据经验和染色过程的具体情况进行把握。

Steps for washing. The purpose is to wash off the floating color of the surface layer of the fabric, so as not to prevent excess dye from penetrating into the knotted part and affecting the dyeing effect. There are no strict standard limits on the steps of water washing, which can be grasped according to experience and the specific conditions of the dyeing process.

8. 固色

8. Color fixing

固色步骤的目的是增强织物染色的色牢度。进行固色操作时应结合所选择的固色原料、助剂、配方、操作工艺等因素来完成。不同的染料有各自不同的固色材料和固色方法。

The purpose of the color fixing step is to enhance the color fastness of the fabric to dyeing. The color fixing operation shall be completed in combination with the selected color fixing raw materials, additives, formulas, operation processes and other factors. Different dyes have different color fixing materials and methods.

9. 脱结

9. Disconnection

脱结即脱去染前扎结的部分。这是体现完整染色效果的步骤，也是整个扎染过程中最为激动人心的步骤

Deknotting is the removal of the knot before dyeing. This is the most exciting step in the whole process of tie-dyeing, as well as the complete dyeing effect.

10. 后整理

10. Post-processing

由于织物在洗涤、扎结、浸色、固色等过程中会产生变形、因此，在织物脱结后应对织物进行相应的整理，以保证最终的染色效果完美。例如，有时因为扎结太紧可能会使织物失去原有的平坦，所以使织物恢复原有的形态则是必不可少的环节。这一步骤的操作极其简单，用电熨斗将脱结之后的织物熨平就可。

Since the fabric will deform in the process of washing, knotting, color dipping and color fixing, the fabric should be treated accordingly after deknottting to ensure the perfect final dyeing effect. For example, sometimes too tight a knot may cause the fabric to lose its original flatness, so it is essential to restore the fabric to its original shape. This step is extremely simple to operate, the electric iron to unknotted fabric ironing.

拓展练习

Extension exercise

1. 收集扎染的图片资料，分析构成纹样的形式元素
2. Collect pictures of tie-dyeing and analyze the formal elements that make up the pattern
3. 根据收集的资料，分析扎染的基本流程
4. Analyze the basic process of tie-dyeing according to the collected data

模块二 扎染的纹样设计

Module II Tie-dye Pattern Design

任务一 扎染纹样的构图设计

Task I Composition design of tie-dye patterns

任务目标

Mission Objectives

1. 了解扎染纹样的构图设计方法
1. Understand the composition design method of tie-dye patterns
2. 掌握扎染纹样的构图设计类型
2. Master the composition design types of tie-dye patterns

任务描述

Task Description

扎染纹样的设计通常首先需要考虑构图，也就是画面的构成方式，是决定扎染最终效果的重要因素。通过对扎染纹样构图的分析与实践，掌握扎染的基本构图方式。

The design of tie-dye patterns usually first needs to consider the composition, that is, the composition of the picture, which is an important factor determining the final effect of tie-dye. Through the analysis and practice of tie-dye pattern composition, master the basic composition mode of tie-dye.

任务实施

Task implementation

一、课前导学

I. Pre-class Guidance Before class.

观察民间扎染的图案纹样，从形式美的角度分析其构图的方式，分析各个形式元素与色彩元素之间的关系。

Observe the patterns of tie-dye, analyze the composition from the perspective of form beauty, and analyze the relationship between each form element and color element.

一、课堂教学

II. Classroom teaching

中国传统的民间扎染作品中，多以对称均衡的手法进行构图，画面饱满充盈，表达出普通劳动大众对生活的美好向往。扎染的构图方式决定了成品的效果，也表达了设计者最初的意图。根据扎染设计的特点归纳出以下几种常用的构图形式。

Traditional Chinese folk tie-dye works are mostly composed in a symmetrical and balanced way. The pictures are full and full, expressing the good yearning of the ordinary working people for life. The composition of tie-dye determines the effect of the finished product and also expresses the original intention of the designer.

According to the characteristics of tie-dye design, the following common composition forms are summarized.

(一) 对称式

(二) (I) Symmetrical



图 2.1.1 对称型扎染图案

Figure 2.1.1 Symmetrical tie-dye pattern

指的是画面沿着中轴线，左右对称。对称的构图给人稳定的感觉，画面繁缛丰满。

It means that the picture is symmetrical along the central axis.

Symmetrical composition gives a sense of stability and red tape.

(三) 向心式

(四) (II) Centripetal



图 2.1.2 向心型扎染图案

Figure 2.1.2 Radial tie-dye pattern

以画面的中心为核心，呈现围合的样式，一般来说是围绕中心的花纹或者主体物进行环绕构图。

With the center of the picture as the core, it presents the enclosed style, which is generally surrounded by the pattern or main body around the center.

(五) 适合式

(六) (III) Suitable



图 2.1.3 适合型扎染图案

Figure 2.1.3 Suitable tie-dye pattern

在一个基础骨骼形状内，填充纹样，使纹样适合外轮廓的骨骼形状。

In a basic skeletal shape, fill the pattern so that it fits the outer skeletal shape.

(七) 渐变式

(八) (IV) Gradual transition



图 2.1.4 渐变型扎染图案

Figure 2.1.4 Gradual Tie-dye Pattern

将构成纹样的元素做由大到小，或者由小到大的渐变设计，具有节奏韵律感。

The elements that make up the pattern are designed from large to small or from small to large with a sense of rhythm.

(九) 对比式

(十) (V) Comparative formula



图 2.1.5 对比型扎染图案

Figure 2.1.5 Contrast Tie-dye Pattern

用构成纹样的两种形状做对比式的排列。

A contrasting arrangement of the two shapes that make up the pattern.

(十一) 放射式

(VI) Radial type



图 2.1.6 发射式扎染图案

Figure 2.1.6 Radial type tie-dye pattern

以中心点呈放射状的构图形式。

It is a radial pattern with a central point.

(十二) 随意式

(十三) (VII) Random



图 2.1.7 随意性扎染图案

Figure 2.1.7 Random tie-dye pattern

没有一定的规则，图案具有肌理般的随机效果。

There are no certain rules, and the pattern has a textured random effect.

拓展练习

Extension exercise

1. 利用铅笔和纸张练习几种构图形式
1. Use pencils and paper to practice several composition forms
2. 分析构图再扎染中的工艺可行性
2. Analyze the process feasibility of composition and re-tie-dyeing

任务二 扎染纹样的组织形式

Task II Organizational form of tie-dye patterns

任务目标

Mission Objectives

1. 了解扎染纹样的组织形式
1. Understand the organizational form of tie-dye patterns
2. 掌握扎染纹样的表现形式与绘制方法
2. Master the expression form and drawing method of tie-dye patterns

任务描述

Task Description

扎染纹样的组织形式是只将形状或者形式元素在画面中进行安排布局，通过分析与实践了解扎染纹样中各元素的组织形式。

The organizational form of tie-dye patterns is to arrange only the shape or form elements in the picture, and understand the organizational form of each element in the tie-dye patterns through analysis and practice.

任务要求

Mission Requirements

通过本课程的学习，学生需要掌握扎染纹样的组织形式与实施方法。

Through the study of this course, students need to master the organizational form and implementation method of tie-dye patterns.

任务实施

Task implementation

一、课前导学

I. Pre-class Guidance Before class.

扎染的工艺特点决定了纹样的组织形式，具有一定的手工局限性，学生通过课前资料的学习，了解及思考扎染纹样中各元素的组织形式与扎染纹样实现之间的关系。例如：图形的间距，纹样的大小，针距的疏密程度等等。什么样的纹样可以扎结，什么样的纹样无法扎结等等。目的在与更好的运用图案纹样的基本的构成形式，实现扎结染色，使图案纹样与扎染技艺有机结合，达到预想的设计效果。

The process characteristics of tie-dye determine the organizational form of the pattern, which has certain manual limitations. Students understand and think about the relationship between the organizational form of each element in the tie-dye pattern and the realization of the tie-dye pattern through the study of pre-class materials. For example, the spacing of patterns, the size of patterns, the density of stitches, etc. What kind of patterns can be tied, what kind of patterns cannot be tied, etc. The aim is to combine the pattern and tie-dye technique to achieve the desired design effect.

二、课堂教学

II. Classroom teaching

（一）单独纹样

(I) Individual Pattern

单独纹样的构成形式，是一种相对单纯的构成形式，是指没有外轮廓及骨格限制，可单独处理、自由运用的一种装饰纹样。这种纹样的组织与周围其他纹样无直接联系，但要注意外形完整、结构严谨，避免松散零乱。单独纹样可以单独用作装饰，也可用作适合纹样和连续纹样的单位纹样。是生活中应用最多最为广

泛的纹样。构成方法简单，但是千变万化，能够形成丰富多彩的纹样构架。作为图案的最基本形式，单独纹样从布局上分为对称式和均衡式两种形式。

The form of individual pattern is a relatively simple form of composition, which refers to a decorative pattern that can be processed separately and used freely without external contour and bone lattice restrictions. The structure of this pattern is not directly related to other patterns around, but attention should be paid to the integrity of the appearance and rigorous structure to avoid looseness and disorder. Individual patterns can be used as decorations alone or as unit patterns suitable for patterns and continuous patterns. It is the most widely used pattern in life. The composition method is simple, but it is ever-changing and can form a rich and colorful pattern framework. As the most basic form of patterns, individual patterns are divided into symmetrical and balanced patterns in terms of layout.

在扎染作品中，单独纹样是最常见的纹样构成方法，这种纹样构成的方式相对来说比较简单自由，不受限制，无拘无束，也不受专业知识的限制，比较适合扎染技艺的原理。在扎染实践中，单独纹样是其他较为复杂纹样的基础与起点，但是要注意纹样外部轮廓的相对完整，避免散乱。

In tie-dye works, individual patterns are the most common pattern composition method. This pattern composition method is relatively simple and free, unrestricted, unrestricted, and not limited by professional knowledge, and is more suitable for the principles of tie-dye techniques. In tie-dyeing practice, individual patterns are the basis and starting point of other complex patterns, but attention should be paid to the relative integrity of the outer contour of the patterns to avoid scattering.

1、均衡式的单独纹样

Balanced individual patterns

均衡式的单独纹样，其特点是纹样的大小，位置，距离，疏密等因素不受对称轴的影响和限制，布置的结构相对自由，但是追求中心稳定，在视觉上左右或者上下保持平衡。在扎染作品中，均衡纹样穿插自由，活泼动感，形象灵动。可以单独使用也可以组合使用。

Balanced individual patterns are characterized by that the size, position, distance, density and other factors of the patterns are not affected and limited by the axis of symmetry, and the layout structure is relatively free, but the center stability is pursued, and the left, right, up and down balance is visually maintained. In tie-dye works, balanced patterns are interspersed freely, lively and vividly. It can be used alone or in combination.



图 2.2.1 均衡式样

Figure 2.2.1 Balanced Pattern

2、对称式的单独纹样

Symmetrical individual patterns

对称的单独纹样主要是以垂直或者水平为对称轴,形成上下或者左右完全相同的图形纹样。对称的单独纹样的构成形式有很多中,比如:觉得对称,相对对称,相背对称,旋转对称,交叉对称,向心对称,离心对称,等等。对称的单独纹样与均衡的单独纹样相比较更加稳定,整齐,规则。在扎染作品中,运用好不同的对称形式,可以演化出不同的纹样效果。

Symmetrical individual patterns mainly take vertical or horizontal as the axis of symmetry to form the same pattern on the upper, lower, left and right sides. There are many forms of symmetrical individual patterns, such as feeling symmetrical, relative symmetrical, opposite symmetrical, rotational symmetrical, cross symmetrical, centripetal symmetrical, centrifugal symmetrical, etc. Symmetrical individual patterns are more stable, neat and regular than balanced individual patterns. In tie-dye works, different symmetrical forms can be used to evolve different patterns.



2.2.2 对称式样

2.2.2 Symmetrical Pattern

（二）适合纹样

Suitable pattern

适合纹样的特点是纹样的组织具备外形的限制，比较常见的外形轮廓有方形，圆形，三角形，菱形等等，纹样填充在外形轮廓里面，与外形轮廓有机结合在一起，形成一个整体，任何不同的外形轮廓，各种不同的纹样类别。都可以进行适合纹样的设计与创作，充满了挑战性与趣味性。在扎染作品中，尤其是传统扎染织物中，适合纹样也十分常见。

The structure suitable for the pattern is limited by the shape. The common outlines include square, round, triangle, diamond, etc. The pattern is filled in the outline and organically combined with the outline to form a whole, with any different outlines and different types of patterns. All of them can be designed and created to suit the pattern,

which is full of challenging and interesting. In tie-dye works, especially in traditional tie-dye fabrics, it is also very common to fit patterns.



图 2.2.3 适合式样

Figure 2.2.3 Suitable Style

(三) 二方连续

(III) Two parties continuously

二方连续在生活中随处可见，属于设计应用领域的学习的内容。二方连续，亦称“带状图案”，图案花纹的一种组织方法。二方连续是由一个单位纹样(一个纹样或两三个纹样相组合为一个单位纹样)，向上下或左右两个方向反复连续而形成的纹样。二方连续有横向和纵向，骨法有以下三种：垂直式、散点式、波纹式。在扎染作品中，利用二方连续的骨架，结合扎结的方法，可以使扎染的纹样变得有规律又富于变化。

The two parties are ubiquitous in life and belong to the learning content in the field of design application. A continuous pattern, also known as a "banded pattern", is a method of organizing patterns. Two-square continuous is a pattern formed by a unit pattern (one pattern or two or three patterns combined into one unit

pattern) repeatedly and continuously in the up-down or left-right directions. There are two kinds of continuous methods: horizontal and longitudinal, and there are three kinds of bone methods: vertical, scattered and corrugated. In tie-dye works, the continuous skeleton of two sides, combined with the tie-knot method, can make tie-dye patterns become regular and rich in changes.



图 2.2.4 二方连续

Figure 2.2.4 Two-way Continuous

（四）四方连续

(IV) Sifang continuous

四方连续，是图案画中的一种组织方法。四方连续是由一个纹样或几个纹样组成一个单位，向按照相同的距离和节奏向上下左右四个方向进行延伸的连接，四周重复地连续和延伸扩展而成的图案形式。四方连续的常见排法有梯形连续、菱形连续和四切(方形)连续等。在扎染作品中，巧妙运用好四方连续，能够使的纹样形成无限的连接和延伸。

Continuous in all directions is an organization method in pattern painting. Square continuity is a pattern form formed by a pattern or several patterns forming a unit, extending in four directions according to the same distance and rhythm, up, down, left and right, and extending repeatedly around. The common arrangement methods of square continuity include trapezoidal continuity, diamond continuity and

four-tangent (square) continuity. In tie-dyeing works, the four directions are cleverly used to make the patterns form infinite connections and extensions.



图 2.2.4 四方连续
Figure 2.2.4 Four-way Continuous

三、任务实训

III. Task Training

- (一) 分析下图扎染织物中图案纹样的组织形式，并进行模仿设计。
- (二) Analyze the organization of patterns in tie-dyed fabrics in the following figure, and carry out imitation design.
- (三) 要求用铅笔和纸张画出设计线稿，表明纹样设计中的组织形式。
- (四) It is required to draw the design line with pencil and paper to indicate the organization form in the pattern design.

拓展练习

Extension exercise

运用所学的纹样组织形式，设计完成一组扎染纹样。

Design and complete a set of tie-dye patterns by using the learned patterns.

任务三 扎染纹样的装饰手法

Task 3 Decoration techniques of tie-dye patterns

任务目标

Mission Objectives

1. 认识扎染纹样中的装饰元素
1. Understand the decorative elements in tie-dye patterns
2. 掌握扎染纹样设计中装饰元素的运用方法
2. Master the application methods of decorative elements in tie-dye pattern design

任务描述

Task Description

扎染纹样的装饰手法是扎染作品美感呈现的方式，扎染纹样的呈现取决于不同的装饰工艺手法，通过学习本课程掌握扎染纹样的装饰技巧与实施手段。

The decorative techniques of tie-dye patterns are the aesthetic presentation of tie-dye works. The presentation of tie-dye patterns depends on different decorative techniques. Through learning this course, students will master the decorative techniques and implementation means of tie-dye patterns.

任务要求

Mission Requirements

通过本课程的学习，需要让学生掌握扎染纹样中的装饰手法。

Through the study of this course, students need to master the decorative techniques in tie-dye patterns.

任务实施

Task implementation

一、课前导学

I. Pre-class Guidance Before class.

通过图片或视频中扎染织物与产品纹样的观看，了解扎染纹样中的装饰元素，根据现代构成原理进行形式审美的分析，了解扎染纹样中的装饰元素与构成美感的组成要素。

Through the view of tie-dye fabrics and product patterns in pictures or videos, students will understand the decorative elements in tie-dye patterns, conduct formal aesthetic analysis according to modern composition principles, and understand the decorative elements and components of tie-dye patterns.

五、课堂教学

II. Classroom teaching

(一) 点线面的运用

(I) Application of points, lines and planes

1. 点

1. Point

点在现代构成原理中，点是有空间位置的视觉单位，其大小是根据整体图形的相对面积来确定的。从几何学意义上讲，点没有大小，没有方向，也没有面积和形状，小而集中的形状相对来说都可以称为点。在现代平面构成中，点是最小的构成单位，是可以进行视觉表现，具有形状、大小、色彩、肌地和材质的基本造型元素。只要是没有超越视觉中点的限度的造型元素，都可以视为点。点在构成中具有集中、吸引视线的功能。点的连续会产生线的感觉，点的集合会产生面的感觉，点的大小不同会产生深度感，几个点的集合会产生虚面的效果。从形态上可以分为规则的点和不规则的点，在构成的形式上可以分为有序点和无序点。

In modern composition principles, points are visual units with spatial positions, and their size is determined according to the relative area of the overall figure. Geometrically, a point has no size, no direction, no area, and no shape. Small and concentrated shapes can be called points. In the modern plane composition, the point is the smallest component unit, which can be visually expressed and has the basic modeling elements of shape, size, color, muscle and material. Any modeling element that does not exceed the limit of the visual midpoint can be regarded as a

point. Points have the function of concentration and attracting line of sight in the composition. The continuum of points produces the sense of a line, the set of points produces the sense of a plane, different points produce the sense of depth, and the set of several points produces the effect of a virtual plane. In terms of form, it can be divided into regular points and irregular points, and in terms of composition, it can be divided into ordered points and disordered points.

点在扎染的作品中表现为点状的形式，如中国早期的扎染纹样“鱼子缬”，这是一种小点的扎缬图案，通过考古的文物看到，鱼子缬均为点状的花纹，整齐规则，制作费工费时。我国民间大一点的扎染纹样有“包豆子花”“鹿胎缬”等等，主要是利用小面积点状的扎结处理，有规律的排列组合形成，在现代，点的大小变得更加丰富，从小到米粒状的点到直径 8 厘米的点，排列起来能产生丰富的扎染纹样，具有反复整齐，有秩序的美感。一般来说，点的大小在应用上，都包含重复的构成原理。

Dots are in the form of dots in tie-dye works, such as the tie-dye pattern "Yuzi Xiu" in early China, which is a small dotted pattern. Through archaeological cultural relics, it can be seen that Yuzi Xiu is neat and regular, which is laborious and time-consuming. The larger tie-dye patterns in China include "Bao Dou Zi Hua" and "Deer Tire Indicum", which are mainly formed by regular arrangement and combination of small-area dotted knots. In modern times, the size of dots becomes more abundant. From small to rice-grained dots to dots with a diameter of 8 cm, the arrangement can produce abundant tie-dye patterns, which are repeated and neat. Orderly beauty. In general, the size of a point in application contains the principle of repetitive composition.



图 2.3.1 点的样式

Figure 2.3.1 Point Style

2. 线

2. Wire

线作为造型的某本元素之一，具有较强的概括性和表现力，在设计中运用十分广泛。在几何学定义里，线是点移动形成的轨迹，也是面的边缘和面与面的交界。线只有位置和长度，没有宽度和厚度。在现代平面构成中，凡是在视觉上相对细长的形，均可以理解为线，线的粗细、长短、虚实、深浅等不同形态，常给人不同的视觉感受和体验。根据形态的特征，线通常可分为两类，即直线和曲线，直线包括平行线，垂直线、折线、斜线等。曲线包括弧线、双曲线、螺旋线、波浪线、自由曲线等等。线可以视作点运动的轨迹，具有一定的情感指向：如直线给人的感觉平静，曲线给人的感觉动感，折线给人的感觉躁动等等。

As one of the elements of modeling, line has strong generalization and expression, and is widely used in design. In the geometric definition, a line is a trajectory formed by the movement of points, and it is also the edge of a surface and the interface between surfaces. Lines have only position and length, not width and

thickness. In the modern plane composition, all visually relatively slender shapes can be understood as lines. The thickness, length, virtuality and reality, depth and other forms of lines often give people different visual feelings and experiences. According to the characteristics of morphology, lines can usually be divided into two categories, namely straight lines and curves. Straight lines include parallel lines, vertical lines, broken lines, oblique lines, etc. Curves include arcs, hyperbolas, spirals, wavy lines, free curves, etc. Lines can be regarded as the trajectory of point motion, with certain emotional orientation: straight lines give people a sense of calm, curves give people a sense of motion, broken lines give people a sense of restlessness, etc.

线在扎染作品中主要体现为线形的表达方式，扎结的方式主要采用缝扎法。线的形式主要有直线，曲线，折线，也可以作综合表现。传统扎染作品中，线的形式也表现在对纹样轮廓的勾勒，形成封闭的形状。扎染创作中，线条的制作方法点的不同，如果线条过长，很难将布扎紧，达不到预想的效果，另外在制作线条的时候，如果有过多的交叉，重复，叠压，也表现不出扎染纹样的效果。表现线条的手法十分丰富，能够运用到多种的扎结方法，也可以用工具来制作。线条纹样具有巨大的创做空间，可以是规则的，也可以是不规则的。扎染作品中主要有短线条，长线条和自由线条，单色表现或者通过套色达到多色的线形效果。

In tie-dye works, threads are mainly expressed as linear lines, and the knotting method is mainly stitching. The main forms of lines include straight lines, curves and broken lines, which can also be comprehensively expressed. In traditional tie-dye works, the form of lines is also reflected in the outline of patterns, forming a closed shape. In tie-dye creation, the method of making lines is different from that of pointing. If the lines are too long, it is difficult to tie the cloth tightly, which cannot achieve the expected effect. In addition, if there are too many crossings, repetitions and overlaps in making lines, the effect of tie-dye patterns cannot be shown. The techniques of expressing lines are very rich, which can be used in a variety of knotting methods, and can also be made with tools. The line pattern has a huge space for creation, which can be regular or irregular. Tie-dye works mainly include short lines, long lines and free lines, which are expressed in monochrome or achieve multi-color linear effect through coloring.



图 2.3.2 线的样式

Figure 2.3.2 Line Style

3. 面

3. Surface

面的形状相比较点、线而言，更具视觉冲击力，所以它在平面构成中常占据主导地位。线的移动，以及点、线的密集，均可形成面，因此可将面视为点和线构成的扩展，只是面的视觉效果更为明确醒目，富于力度感。面有长度和宽度，而无厚度。面因受线的界定，所以有丰富多样的形状，被称为形。面可分为两大类：一类是实面，一类是虚面。实面是指有明确形状、能实实在在看到的面。虚面是指不真实存在但能被我们感觉到的、由点、线密集运动而形成的面。在平面构成中，面可分为直线形面、几何曲线形面、自由曲线形面和偶然形面四种类型。在几何学上，面有圆形、方形、角形和不规则形等形状。

Compared with points and lines, the shape of a plane has more visual impact, so it often plays a dominant role in the plane composition. The movement of lines and the densification of points and lines can form surfaces, so surfaces can be regarded as

an extension of the composition of points and lines, but the visual effect of surfaces is more clear and eye-catching, with a sense of strength. Faces have length and width and no thickness. The surface is defined by lines, so it has a variety of shapes, which are called shapes. Surfaces can be divided into two categories: real surfaces and virtual surfaces. A real surface is a surface that has a clear shape and can be seen. An imaginary surface is a surface that does not really exist but can be felt by us and is formed by the dense movement of points and lines. In the plane composition, the plane can be divided into four types: straight plane, geometric curve plane, free curve plane and accidental plane. Geometrically, surfaces have shapes such as circular, square, angular, and irregular.

面在扎染作品中，是一个相对的概念，存在与对比的状态下。尽管在扎染中，面的单独运用不是很多，但是是不可或缺的。扎染作品中，点，线的结合，加上面的形状，图案纹样的关系显得非常丰富。一般来讲，扎染中主要体现为具体的图底关系，在视觉上形成块面的效果。如大理民族扎染中的《福禄寿喜》，《年年有余》等纹样中葫芦，鱼的形象都是用面块表现出的具体形象。

Face in tie-dye works, is a relative concept, existence and contrast state. Although the use of noodles alone is not many in tie-dyeing, it is indispensable. In tie-dye works, the combination of dots and lines, together with the shape and pattern above, appears to be very rich. Generally speaking, tie-dyeing is mainly embodied as a specific background relationship, forming a block effect on vision. For example, the images of gourds and fish in the patterns of "Blessings, Wealth, Shouxi" and "Niannian Youyu" in the tie-dye of the Dali ethnic group are all concrete images expressed by noodles.



图 2.3.3 面的样式

Figure 2.3.3 Surface Style

4. 点线面的综合表现

4. Comprehensive performance of points, lines and planes

在扎染的纹样设计中，点，线，面通常可以综合运用，达到十分多变丰富的纹样构成。可以通过各种各样有规律的设计，通过形式美的法则，构成节奏变化，通过不同的染色方法达到层次变化。

In the design of tie-dye patterns, points, lines and surfaces can usually be used comprehensively to achieve very varied and rich patterns. Through various regular designs, through the rules of formal beauty, the composition of rhythm changes, through different dyeing methods to achieve hierarchical changes.



图 2.3.4 点线面综合表现

Figure 2.3.4 Comprehensive Performance of Points, Lines and Surfaces

（二）色彩与肌理的运用

(II) Application of Color and Texture

传统的扎染色彩相对单一，随着时代的发展，色彩在现代扎染艺术创作中占有十分重要的地位。扎染艺术的创作更是离不开色彩的辅佐、色彩在扎染作品中充当着重要的角色。根据现代色彩构成的原理，明确色彩的原色、间色、复色之间的关系，同时理解色彩的色调以及色彩的明度、纯度、色相等因素，从而正确运用色彩的对比协调关系来掌握色彩的搭配原则。扎染设计中的色彩效果一半靠人，一半靠天。当人为设计的时候，有可能会达到意想不到的天然效果。这种“天人合一”也正是扎染区别于其他染色工艺的独特之处。

The traditional tie-dye color is relatively simple. With the development of the times, color plays a very important role in modern tie-dye art creation. The creation of tie-dye art is inseparable from the assistance of color, which plays an important

role in tie-dye works. According to the principle of modern color composition, the relationship between the primary color, secondary color and compound color of the color is clarified, and the tone of the color, the brightness, purity and color of the color are understood at the same time, so as to correctly use the contrast and coordination relationship of colors to master the principle of color matching. In tie-dye design, the color effect depends half on people, half on the sky. When artificially designed, it is possible to achieve unexpected natural effects. This "Tianrentaiyi" is also the uniqueness of tie-dyeing from other dyeing processes.

肌理一般分为视觉肌理与触觉肌理，是指物体表面的组织结构与纹理特征，与物体的质地密不可分。在扎染的制作过程中，通过对织物的捆绑束缚等扎结手法，本身已经形成了有趣的肌理效果。此外，在染色的过程中经过色彩的搭配组织，扎染作品中的呈现出光斑色晕、线形纹样与斑驳的花色图形等，和谐的组织成完整的作品。在扎染技艺中合理准确地选择与运用好肌理表现，对增加装饰情趣与丰富表现效果都是有积极意义的。

Texture is generally divided into visual texture and tactile texture, which refers to the organizational structure and texture characteristics of the object surface, and is inseparable from the texture of the object. In the process of tie-dyeing, the binding of fabrics and other binding techniques have formed an interesting texture effect. In addition, through the collocation of colors in the process of dyeing, the tie-dye works present light spots, linear patterns and mottled patterns, which are harmoniously organized into a complete work. The reasonable and accurate selection and application of textural expression in tie-dyeing techniques is of positive significance to increase decorative taste and enrich expression effects.

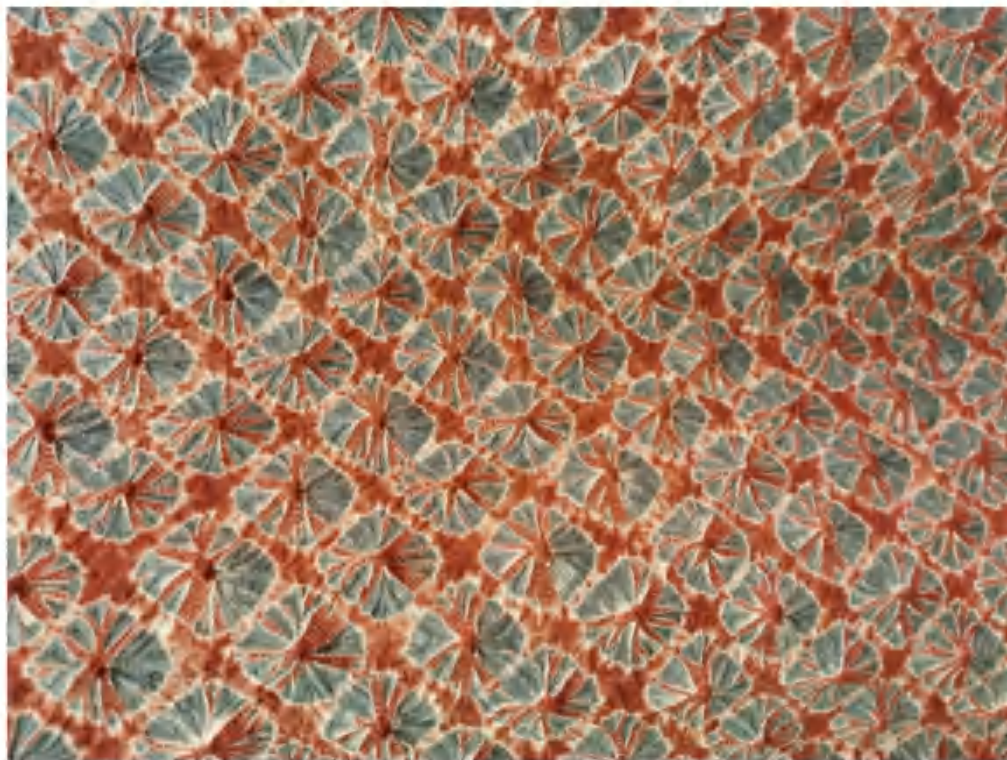


图 2.3.5 色彩与肌理

Figure 2.3.5 Color and Texture

(五) 意境与基调的表现

(六) the expression of artistic conception and tone.

中国画是讲求意境的,也就是俗话说的诗情画意,讲究在有限中体现无限,使画有限而意无穷,这正是为了表现画外之意-意境,在大理喜洲周城村的现存手工扎染作品中,依然可以看到中国风的表现形式,具有中国画的意味。现代扎染艺术创作亦然,通过扎染中的形态,色彩构成,使欣赏者情感被感染,产生无尽的遐想,愉悦情绪,这也是扎染的魅力所在。

Chinese painting is about artistic conception, that is, the poetic and artistic meaning as the saying goes, which emphasizes the infiniteness in the limited, so that the painting is limited and the meaning is endless. This is precisely to express the meaning beyond the painting-artistic conception. In the existing handmade tie-dye works in Zhoucheng Village, Xizhou, Dali, the expression form of Chinese style can still be seen, which has the meaning of Chinese painting. The same is true of modern tie-dye art creation. Through the form and color composition in tie-dye, the

appreciator's emotions are infected, generating endless reverie and pleasant emotions, which is also the charm of tie-dye.

在扎染的作品创作中，基调往往构成了作品总体的氛围。从整体上看，一切皆应围绕着基调来展开，因此基调成为作品的基本情调。在扎染艺术创作中，可以通过色彩，构成的形式，造型纹样或形态等等构成作品的总体基调。有色彩的基调、有构成的基调，还有造型纹样的基调等，明确扎染艺术设计的基调，对把握扎染的整体感与树立全局意识至关重要。

In the creation of tie-dye works, the tone often constitutes the overall atmosphere of the works. On the whole, everything should be developed around the tone, so the tone becomes the basic tone of the work. In the creation of tie-dye art, the overall tone of the work can be formed by color, composition form, modeling pattern or form, etc. Colorful tone, composition tone, as well as the tone of modeling patterns, etc., clarifying the tone of tie-dye art design is essential to grasp the overall sense of tie-dye and establish global awareness.



图 2.3.6 大理喜洲周城村手工扎染门帘

Figure 2.3.6 Manual Tie-dye Door Curtains in Zhoucheng Village, Xizhou, Dali

三、学生练习

III. Student Exercise

实训内容一

Training Content I

以直线为表现形式，设计构思一件扎染作品。

A tie-dye work is designed and conceived in the form of a straight line.

实训要求

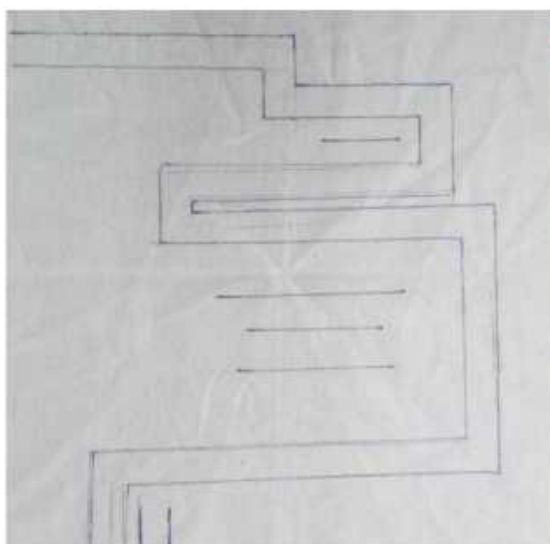
Training Requirements

1. 用线的表现形式构成画面。
1. Use lines to form the picture.
2. 面积不小于 20*20 厘米
2. The area is not less than 20*20 cm
3. 用平缝扎结法
3. Binding with flat seams
4. 单色染色并检验效果
4. Monochrome staining and test the effect

训练实施与记录

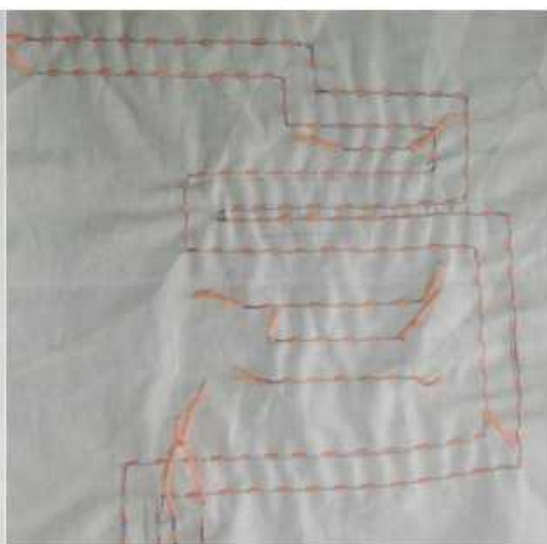
Training Implementation and Records

1. 首先选用一块 20*20 厘米的面型面料。
1. Select a piece of 20*20cm fabric first.
2. 绘制出初步草图，并在布面上使用水消笔作图。
2. Draw a preliminary sketch, and draw the drawing with a water spray pen on the cloth.
3. 用针线沿绘制好的线条进行缝扎，针距 0.5-0.8 均可。
3. Use stitches to stitch along the drawn lines, with a stitch length of 0.5-0.8.
4. 抽紧线，并进行浸泡染色。
4. Tighten the wire and soak it for dyeing.
5. 检验花型及染色效果。
5. Check the pattern and dyeing effect.



绘制纹样

Drawing pattern



平缝扎

Flat sewing



抽紧线条

Tighten the line



染色后效果

the effect after dyeing

完成评价与分析

Complete evaluation and analysis

该作品按照训练的要求完成，采用了直线条的画面表达形式，用折线和短的单线条完成，符合训练的要求。最终呈现的扎染纹样与设计图基本一致。在最终的扎染成品图中发现几处设计的短线条比较模糊不清，为线段扎结过程中未

能抽紧线条导致的染料浸润造成。另外，在扎结留白的地方颜色有染色不均匀的现象，一方面是在抽线的时候用力不均匀，另一方面可能在染色时搅动较少造成。

The work is completed according to the requirements of training, using the form of straight lines, broken lines and short single lines, which meets the requirements of training. The final tie-dye pattern is basically consistent with the design drawing. In the final tie-dye finished product drawing, it is found that several designed short lines are relatively vague, which is caused by dye infiltration due to the failure to tighten the lines during the knotting process of the line segments. In addition, there is a phenomenon of uneven color staining in the white part of the knot. On the one hand, it is caused by uneven force during drawing, and on the other hand, it may be caused by less stirring during staining.

拓展练习

Extension exercise

1. 选择点线面等装饰元素设计扎染作品的纹样。

1. Choose decorative elements such as dots, lines and surfaces to design the patterns of tie-dye works.

2. 收集扎染作品的图片，分析其中的基调，色彩，肌理，提高审美素养。

2. Collect pictures of tie-dye works, analyze the tone, color and texture, and improve aesthetic literacy.

模块三 扎染的扎结技艺

Module III Tie-dyeing Techniques

任务一 扎结的材料与工具

Task I Materials and tools for knotting

任务目标

Mission Objectives

1. 了解扎结用的各种面料，辅料
1. Understand various fabrics and accessories for binding
2. 熟悉扎结用的工具
2. Be familiar with the tools for binding

任务描述

Task Description

扎染技艺中所使用的工具材料看似十分简单,但是由于工艺本身的限制存在对所用的工具材料也有一定的要求,通过对扎结过程中使用的工具材料的了解,为扎染的扎结创作提供前期的基础。

The tools and materials used in tie-dyeing seem to be very simple, but due to the limitation of the process itself, there are certain requirements for the tools and materials used. Through the understanding of the tools and materials used in the tie-dyeing process, it provides an early foundation for the creation of tie-dye knots.

任务要求

Mission Requirements

通过本课程的学习,学生需要了解并熟悉扎结过程中需要用到的工具与材料,以及它们的特征与鉴别方式。

Through the study of this course, students need to understand and be familiar with the tools and materials used in the tying process, as well as their characteristics and identification methods.

任务实施

Task implementation

一、课前导学

二、Pre-class Guidance

通过课前的图片资源和数字资源的学习，了解扎染所用的材料与工具，以及基本的特点。

Through the learning of picture resources and digital resources before class, students will understand the materials and tools used in tie-dyeing and the basic characteristics.

二、课堂教学

II. Classroom Teaching

扎染制作的材料和工具，也是生活中可以随时发现和选择的，是尝试扎染技艺的重要组成部分。扎染材料和工具的选择范围非常大，了解其性能、特点和作用，是准备好扎染材料和工具的前提。制作扎染作品，首先要准备相应的工具和材料，熟悉并掌握这些相关工具的功能，工具的用法，面料的特性等等。

The materials and tools for tie-dyeing are also found and selected at any time in life, and are an important part of trying tie-dyeing skills. The selection of tie-dye materials and tools is very wide, and understanding their performance, characteristics and functions is the premise of preparing tie-dye materials and tools. To make tie-dye works, first prepare the corresponding tools and materials, get familiar with and master the functions of these related tools, the usage of tools, the characteristics of fabrics, etc.

（一）扎结的布料选择

（二）Selection of knotted fabric

1、纯棉织物

2、Pure cotton fabric

纯棉织物是制作扎染作品的首选，纯棉织物轻松保暖、吸水性强、质地柔软、穿着舒适、透气性强，吸湿性也较强。它多用来制作时装、休闲装、内衣和衬衫。其缺点是容易缩水、易皱、外观上不太挺括、需要时常熨烫。质地较粗、较厚的纯棉布、绒布等，可制作室内装饰品，加壁挂、装饰画等工艺品。

Pure cotton fabric is the first choice for tie-dyeing works. Pure cotton fabric is easy to keep warm, has strong water absorption, soft texture, comfortable to wear, strong breathability, and strong hygroscopicity. It is often used to make fashion, casual wear, underwear and shirts. Its disadvantages are easy to shrink, easy to wrinkle, not very crisp in appearance, and need to be ironed frequently. Coarse and thick pure cotton cloth, flannelette, etc. can be used to make interior decorations, wall hangings, decorative paintings and other crafts.

3、丝绸面料

4、Silk fabric

将生丝作为经丝、纬丝交织制成的织物为丝绸面料，丝绸面料的种类很多，如：双绉、乔其纱、软缎等织物。丝绸面料质地柔软、渗透性强、有光泽、比较适合制作扎染产品。经过扎染工艺的加工，花纹明显、清晰、色晕丰富多变、光泽度强。

The silk fabric is made of raw silk as warp silk and weft silk interwoven. There are many kinds of silk fabrics, such as crepe, geochi yarn, soft satin and other fabrics. The silk fabric is soft, permeable and glossy, which is suitable for making tie-dye products. After tie-dyeing process, the pattern is obvious, clear, the color halo is rich and variable, and the glossiness is strong.

5、毛织品

6、Wool

毛织品主要以绵羊毛为主，也可以混纺一定比例的化学纤维以及其他天然纤维，经过精梳设备的加工工艺，通过多次的梳理合并，牵拉，纺纱织造而成。用于制作高档的服装。

Wool products are mainly wool, and can also be blended with a certain proportion of chemical fibers and other natural fibers. After the processing technology of combing equipment, they are woven by multiple combing, pulling and spinning. Used to make high-end clothing.

7、化纤织物

8、Chemical fiber fabric

化纤织物（粘胶面料）又名“木天丝”，是一种运动型环保面料，因其特殊的纳米螺纹分子结构，就好像面料表层空气流通的管道，保证充足的循氧量，锁住水分，所以拥有相当好的调湿效果。它的制作工艺是用木材、棉短绒等纤维素为原料制成纸粕，经过多重工序，在经纺丝机从喷丝头的细孔中压入由硫酸、硫酸钠和少量硫酸锌所组成的凝固液中凝固、再拉伸成丝，然后将卷绕成丝饼，经水洗、脱硫、漂白、上油和干燥后成为粘胶丝，经过纺织，形成化纤面料。

Chemical fiber fabric (viscose fabric), also known as "wooden silk", is a kind of sporty environment-friendly fabric. Because of its special nano-thread molecular structure, it is like a pipe for air circulation on the surface of the fabric, which ensures sufficient oxygen circulation and locks moisture, so it has a quite good humidity control effect. Its production process is to make paper meal from cellulose such as wood and cotton pile. After multiple processes, it is pressed into a coagulation liquid composed of sulfuric acid, sodium sulfate and a small amount of zinc sulfate from the fine holes of the spinning head by a spinning machine to solidify, then stretched into silk, and then wound into silk cakes, which are washed, desulfurized, bathed, oiled and dried into viscose silk. After weaving, chemical fiber fabric is formed.

从扎染的染色效果和操作的便捷条件看，犹以棉、丝织物更为常见。通常的情况下，选择进行扎染的织物不易过厚或过薄。过厚的织物不宜扎结，不宜表现清晰的纹样。过薄的织物，在染色时不宜控制染料的渗透。弹性较大、硬度较强的织物通常也不适合用于扎染。

From the dyeing effect of tie-dyeing and the convenient conditions of operation, cotton and silk fabrics are more common. Typically, fabrics selected for tie-dyeing are not too thick or too thin. Too thick fabric should not be tied and should not show clear patterns. Too thin fabrics should not control the penetration of dyes during dyeing. Fabrics with greater elasticity and hardness are also generally not suitable for tie dyeing.

（二）扎结用的辅料

(II) Auxiliary materials for binding

1、绳、线类

1. Ropes and wires

绳、线类材料的选择范围相当广泛。从用于缝纫的线到包装线，从棉线到尼龙线，从布条到橡皮筋，都可以用于扎染。要注意不同质地的绳线与染色工艺的对应关系。绳线粗细的选择可以根据织物的薄厚和纹样的风格而定，细线比较适合薄一些的织物，扎结染色后的纹样效果也较细腻；粗线较适合相对厚的织物，扎结染色后的纹样效果也较粗犷。由于扎结的松紧需要人为的控制以及一些染料过强的渗透力，都需要选择的绳、线具备一定的强度。

The selection range of rope and wire materials is quite wide. From threads used for sewing to packaging threads, from cotton threads to nylon threads, from cloth strips to rubber bands, all can be used for tie-dyes. Attention should be paid to the corresponding relationship between ropes of different textures and dyeing process. The selection of rope thickness can be determined according to the thickness and pattern style of the fabric. Thin threads are more suitable for thinner fabrics, and the pattern effect after knotting and dyeing is also finer; thick threads are more suitable for relatively thick fabrics, and the pattern effect after knotting and dyeing is also

rougher. Since the tightness of the knot needs manual control and the penetration of some dye is too strong, the selected ropes and threads need to have certain strength.



图 3.1.1 绳类

Figure 3.1.1 Ropes

2、挡板类

3、Baffles

在扎染过程中，有的扎结方法需要挡板。挡板的选择和使用应该结合纹样的特点进行。挡板的类别非常多，也容易准备。竹类、木类、塑料类及其他材质的挡板都可以用于扎染。当然，还可以结合纹样特点的需要，任意制作不同形状、不同用途的挡板。

In the process of tie-dyeing, some knotting methods require baffles. The selection and use of baffles shall be carried out in combination with the characteristics of patterns. The types of baffles are very numerous and easy to prepare. Bamboo, wood, plastic and other materials can be used for tie-dyeing. Of course, it is also possible to make baffles of different shapes and purposes according to the needs of pattern characteristics.

（三）扎结的工具

(III) Tools for knotting

扎结的工具主要包括一般扎染操作过程中常用到的工具主要有：

Tools for knotting mainly include those commonly used in general tie-dyeing operations:

- 1、缝衣针：根据据织物的厚度来决定缝衣针的粗细。
 - 2、Sewing needle: The thickness of the sewing needle depends on the thickness of the fabric.
 - 3、缝线：一般用涤棉线或者棉线，要粗于一般的缝纫线，粗细与选择的缝衣针相匹配。
 - 4、Stitching: Generally, polyester cotton thread or cotton thread is used, which is thicker than the general sewing thread, and the thickness matches the selected sewing needle.
 - 5、剪刀：尖一点长一点的剪刀更加适用。
 - 6、Scissors: Scissors that are sharper and longer are more suitable.
 - 7、顶针：一般缝纫用的顶针即可。
 - 8、Thimble: General sewing thimble.
- 此外，还有电熨斗，笔，尺，小钳子，等等。

In addition, there are electric irons, pens, rulers, small pliers, and so on.



图 3. 1. 2 扎染工具

Figure 3.1.2 Tie-dye Tools



图 3.1.2 多种扎结法

Figure 3.1.2 Tie-dye Tools

拓展练习

Expansion exercises

- 1、收集扎结用的布料，并尝试进行特征的分析与鉴别方法
1. Collect the fabrics for tie knots and try to analyze and identify the characteristics
- 2、整理扎染的工具，熟悉其用法
2. Organize tie-dye tools and be familiar with their usage

任务二 扎结的方法与纹样构成

Task 2 Tying method and pattern composition

任务目标

Mission Objectives

1. 了解扎结方法与纹样构成之间的关系
1. Understand the relationship between ligation methods and pattern composition

2. 掌握扎结的基本方法与变化

2. Master the basic methods and changes of ligation

任务描述

Task Description

扎结的方法是扎染纹样构成的关键因素，每一种扎结的方式，都可以理解为不同的纹样构成或表现的形式。

The method of knotting is a key factor in the composition of tie-dye patterns. Each knotting method can be understood as a different pattern composition or expression form.

任务要求

Mission Requirements

通过本课程的学生，学生需要了解扎结方法与纹样构成之间的关系，需要掌握扎结的基本方法与变化原理。

Through this course, students need to understand the relationship between knotting methods and pattern composition, and master the basic methods and change principles of knotting.

任务实施

Task implementation

一、课前导学

I. Pre-class Guidance

学生课前通过网络资源和课程数字资源观看扎结的基本方法，分析扎染纹样与扎结方法之间的关联性。

Students watch the basic methods of tie knots through network resources and course digital resources before class, and analyze the correlation between tie-dye patterns and tie knot methods.

二、课堂教学

II. Classroom Teaching

扎染技艺中扎结的方法不同，所产生的纹样不同。由于手工艺的灵活性与特殊性，扎染的扎结方法与纹样有较强的关联性。扎染的纹样不象是用画笔在纸面上绘画那么直观，必须要遵循扎结的原则和手工艺特征进行选择。在具体的扎结过程中，要充分考虑扎染纹样的形成与扎结操作的可行性。每一个或者每一组单元的扎结操作，都会影响到下一个或者下一组单元的操作。熟练的使用扎结方法，对应最终的染色效果，合理规避扎染工艺本身的局限性，是扎染技艺扎结过程中需要思考和注意的问题。

Tie-dyeing techniques are different in the way of knotting, resulting in different patterns. Due to the flexibility and particularity of craftsmanship, the tie-dyeing method has a strong correlation with the pattern. The pattern of tie-dyeing is not as intuitive as drawing on paper with a brush. It must be selected according to the principle of tie-knot and handicraft characteristics. In the specific process of knotting, the formation of tie-dye patterns and the feasibility of knotting operations should be fully considered. The knotting operation of each unit or group of units will affect the operation of the next unit or group of units. Proficient use of tie-knot method, corresponding to the final dyeing effect, and reasonable avoidance of the limitations of tie-dyeing process itself are the problems that need to be considered and paid attention to in the process of tie-dyeing.

（一）单一的扎结方法与纹样构成

(I) Single knotting method and pattern composition

单一的扎结方法指的是采用一种方法进行反复扎结。或者说重复使用一种装饰设计元素，例如点的重复，线的重复或者面的重复。利用单一的扎结方法进行纹样的组织与构思，同样有很大的创作空间。通过单一扎结方法的重复运用、格律形式的运用、不同大小的比例运用以及不同组合重构形式的运用，都可以得到不同风格的整体纹样效果。这类扎染织物的纹样效果具备平面感，有着较强的视觉冲击力和图形装饰特点。

A single method of knotting refers to repeated knotting using one method. Or reuse a decorative design element, such as dot repetition, line repetition, or surface repetition. Using a single knotting method to organize and conceive patterns also has a large space for creation. The overall pattern effect of different styles can be

obtained through the repeated use of single knotting method, the use of lattice form, the use of different scales and the use of different combinations of reconstruction forms. The pattern effect of this kind of tie-dyed fabric has a flatness, strong visual impact and graphic decoration characteristics.

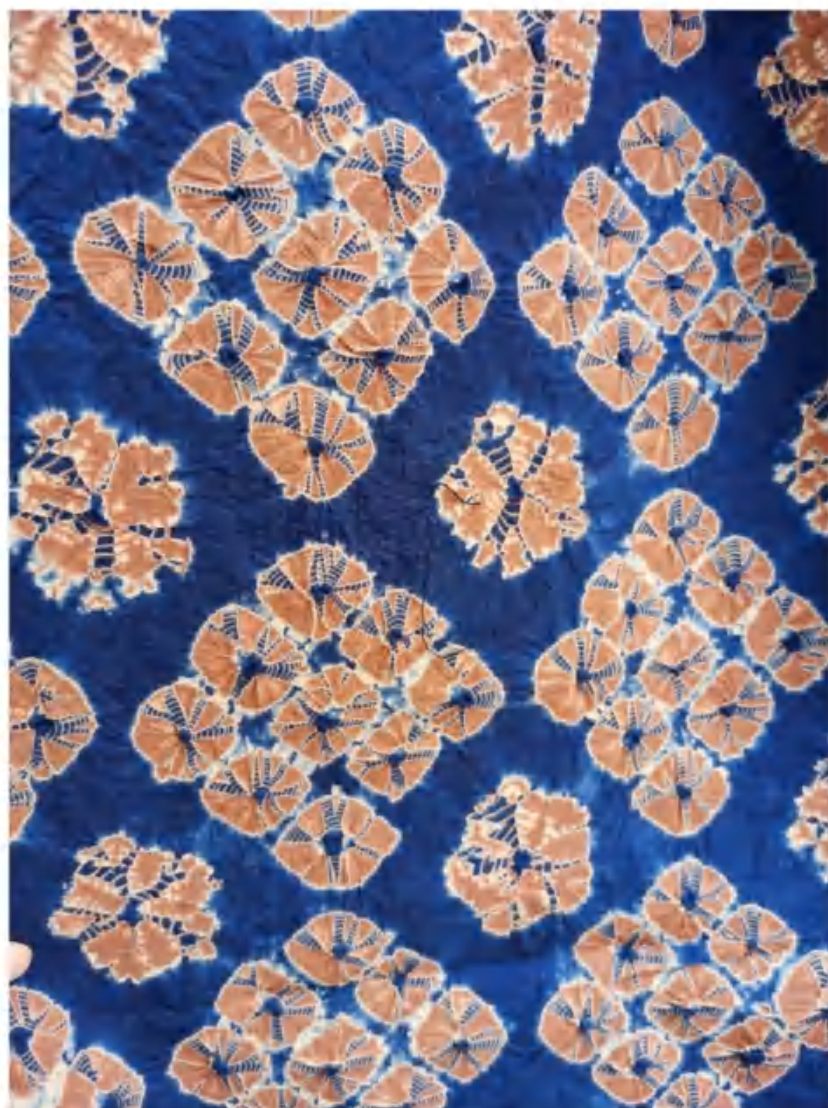


图 3.2.1 单一扎结法

Figure 3.2.1 Single knotting method

(二) 多种扎结方法的组合与纹样变化

(II) Combination of Multiple Ligation Methods and Pattern Change

多种扎结方法的组合运用是较为常见的扎染纹样创作方法，更易于营造丰富的纹样效果。在选择不同扎结技法时，基于画面需求特点的基础上，对应画面中不同的物体形状及预期的染色效果选择和搭配适合的扎结方法。不同技法

的组合、不同的组织形式、不同染色效果的组合，都可以使纹样产生丰富、自然的变化。合理使用不同的扎结技法，可以使纹样效果具备较强的层次感和空间感。

The combination of multiple knotting methods is a more common tie-dye pattern creation method, which is easier to create rich pattern effects. When selecting different knotting techniques, the appropriate knotting methods are selected and matched according to the different object shapes and expected dyeing effects in the picture based on the characteristics of the picture requirements. The combination of different techniques, different organizational forms and different dyeing effects can make the pattern change abundantly and naturally. Reasonable use of different knotting techniques can make the pattern effect have a strong sense of layering and space.



图 3.2.2 多种扎结法

Figure 3.2.2 Multiple knotting methods

扎结方法的使用与纹样的设计相关联,纹样设计的预期效果需要扎结的方法实现,需要根据纹样设计的效果与要求适当地选择扎结的方法。此外不同的布料的疏密度也要选择不同的扎结方法。随着材料与工具的发展,在理解扎结方法防染作用的基础上,可以尝试不同扎结方法的变化。扎染纹样的设计,在整体扎结过程中起着非常重要的作用。反之,扎染纹样的设计,也会受到扎染工艺的限制。好的扎染纹样的设计,既应该是一幅完美扎染作品的灵魂依托,也应该是纹样效果和扎染工艺完美结合的产物。

The use of knotting method is related to the design of pattern. The expected effect of pattern design needs to be realized by knotting method, and the knotting method needs to be appropriately selected according to the effect and requirements of pattern design. In addition, different binding methods shall be selected for different cloth density. With the development of materials and tools, different ligation methods can be tried on the basis of understanding the anti-dyeing effect of ligation methods. The design of tie-dye patterns plays a very important role in the overall knotting process. On the contrary, the design of tie-dye patterns will also be limited by the tie-dye process. A good tie-dye pattern design should not only be the soul support of a perfect tie-dye work, but also be the product of the perfect combination of pattern effect and tie-dye technology.

三、实训任务

III. Training Tasks

实训内容一

Training Content I

单一的扎结方式训练

Single knot training

实训要求

Training Requirements

1. 用一种装饰元素或者构成要素,如点,线,面作为表现形式构成画面。

1. Use a decorative element or constituent element, such as dots, lines, and surfaces, as an expression to form a picture.

2. 面积不小于 20*20 厘米

2. The area is not less than 20*20 cm

3. 用重复单一的扎结法

3. Repeated single knotting

4. 染色的方法不限制

4. The method of dyeing is not limited

训练实施与记录

Training Implementation and Records

1. 首先选用一块 35*35 厘米的棉质薄面料。

1. First, choose a piece of 35*35cm cotton thin fabric.

2. 叠好布料，并在布面上使用水消笔作半圆形绘制。

2. Fold the cloth and draw a semicircle on the cloth surface with a water sterilizing pen.

3. 用针线沿绘制好的线条进行缝扎，针距 0.5-0.8 均可。

3. Use stitches to stitch along the drawn lines, with a stitch length of 0.5-0.8.

4. 扎紧根部，选择黄色，进行染色。

4. Tie the root tightly, select yellow for dyeing.

5. 待干后，扎紧圆形的全部，选择黑色进行染色。

5. After drying, fasten all round parts and select black for dyeing.

6. 检验成品效果

6. Check the effect of finished products



折叠四份缝扎

Fold four parts and



扎紧根部

tie the root tightly.



图 3.2.3 作者：2018 级服装与服饰设计陈柏良

Figure 3.2.3 Author: Chen Bailiang, a student of 2018 in Costume and Apparel Design

完成评价与分析

Complete evaluation and analysis

该作品按照训练的要求完成，采用了折叠，平缝法进行扎结，利用单一的点元素进行扎结训练，符合训练的要求。最终呈现的扎染纹样与预想基本一致。在最终的扎染成品图中发现圆形的轮廓线不够清晰，面积较最初缩小。其原因可能是扎结不够紧造成的，其次面料相对较薄，染料渗透性强造成圆形的形状变小。

The work is completed according to the requirements of training, with folding and flat seam method for knotting, and a single point element for knotting training, which meets the requirements of training. The final tie-dye pattern is

basically the same as expected. In the final tie-dye finished drawing, it is found that the circular contour line is not clear enough and the area is smaller than that at the beginning. The reason may be that the knot is not tight enough, and secondly, the fabric is relatively thin, and the strong dyestuff permeability causes the round shape to become smaller.

拓展练习

Extension exercise

- 1、采用同一种装饰元素或构成形式进行单一扎结的训练
- 2、Training with the same decorative element or composition form for a single knot
- 3、采用多种装饰元素或构成形式进行综合扎结的实训
- 4、Practical training of comprehensive knotting with various decorative elements or composition forms

任务三 扎结的技法与实训

Task 3 Techniques and practical training of knotting

任务目标

Mission Objectives

1. 了解扎结的技法种类
1. Understand the types of knotting techniques
2. 掌握不同的扎结技法
2. Master different knotting techniques

任务描述

Task Description

扎结是扎染技艺中一个非常灵活的手工操作的环节，也是一个相对独立完整的工艺构成环节，了解扎结的基本技法与操作手段，能够提升扎染作品的最终效果。

Tie-knot is a very flexible manual operation link in tie-dye technology, and also a relatively independent and complete process composition link. Understanding the basic techniques and operation means of tie-knot can improve the final effect of tie-dye works.

任务要求

Mission Requirements

通过本课程的学习，学生需要掌握扎结的基本技巧，熟知扎结方法与纹样形成之间的关联性。

Through the study of this course, students need to master the basic skills of knotting and be familiar with the correlation between knotting methods and pattern formation.

任务实施

Task implementation

一、课前导学

二、Pre-class Guidance

通过数字资源和网络资源观看了解扎结的基本手法，尝试分析总结扎结的常用手法与技巧。

Understand the basic techniques of knotting through digital resources and network resources, and try to analyze and summarize the common techniques and skills of knotting.

二、课堂教学

II. Classroom Teaching

扎结的方法，既可以决定纹样的表现效果，也会间接地影响到纹样的形式构架。扎结方法选择得恰当与否，会直接影响到纹样最终的视觉效果。纹样的形

式与表现效果具备自身的形成逻辑与体系，与扎染的工艺形式结合时，要充分地考虑到两者之间的差异关系。处理相对概念的纹样形式与扎结方法之间的衔接与融合，既要充分发挥纹样构成形式带给人的美感，又要兼顾扎染工艺手工操作的特点及局限，二者缺一不可。

The method of knotting can not only determine the expression effect of patterns, but also indirectly affect the form and framework of patterns. Whether the knotting method is properly selected will directly affect the final visual effect of the pattern. The pattern form and expression effect have their own formation logic and system. When combining with the tie-dye process form, the difference relationship between the two should be fully considered. The connection and fusion between the pattern form and the binding method of the relative concept should not only give full play to the aesthetic feeling brought by the pattern composition form, but also take into account the characteristics and limitations of the manual operation of tie-dyeing technology.

根据扎结中手的动作我们可以将扎结的方法总结出以下几种：

According to the movement of the hand in the knot, we can summarize the following methods of knotting:

（一）缝

(I) Joint

缝是用针线，在织物上进行缝线，这种方法在传统扎染中十分普遍。缝扎的针距，线的粗细也直接影响到纹样的最终效果，一般来说，越薄的布针距密集，越厚的布针距疏松。表现细密的纹样时，针距相应较小较密；表现粗犷的纹样时，针距相应较大较疏。不同纹样的部分之间也要留有一定的间距，间距通常不能小于7mm。

Stitching is the use of needles and threads to stitch the fabric. This method is very common in traditional tie-dyeing. The stitch length and thread thickness of stitching also directly affect the final effect of the pattern. Generally speaking, the thinner the stitch length, the looser the stitch length. When showing fine patterns, the stitch length is correspondingly small and dense; when showing rough patterns, the

stitch length is correspondingly large and sparse. There should also be a certain spacing between different patterns, usually not less than 7mm.

缝扎的扎结方法与线的表现形式相关联。根据线的形式，可以分为直线缝，曲线缝，折线缝等等。根据对织物的折合方式，还可以分为卷缝扎，叠缝扎等等。根据纹样设计的需要，可以选择单一的缝扎法，也可以多种缝扎法混合使用，可以产生不同的纹样效果。

The knotting method of suture ligation is related to the expression of thread. According to the form of the line, it can be divided into straight seam, curved seam, broken seam, etc. According to the folding method of the fabric, it can also be divided into crimping, overlapping, etc. According to the needs of pattern design, a single stitching method can be selected, or multiple stitching methods can be mixed to produce different pattern effects.

1、平缝扎

1. Flat sewing

平缝扎是利用平针缝的方法，沿着织物上已经描画好的纹样进行缝制。缝线可以是直线、弧线，可以是斜线或成角折线，也可以是闭合或不闭合的形状。针与线是平缝扎结的必要工具和材料。平缝的针距一般为 5-15mm。平缝后再沿着缝制好的缝迹将织物抽紧、扎牢。

Flat sewing is to use the method of flat stitching to sew along the already drawn pattern on the fabric. Sutures can be straight lines, arcs, oblique lines or angled fold lines, or closed or unclosed shapes. Needles and threads are necessary tools and materials for flat seam knotting. The stitch length of flat seam is generally 5-15mm. After the flat seam, the fabric shall be tightened and tied firmly along the sewn seam.

平缝扎的纹样特点一般多为线性纹样。这类的线性纹样是由不同大小的针距所形成的点串联而成。染色后的线条本身就具备非常独特的美感和表现力，再结合不同的图形、不同线条的组合方式能够获得丰富的纹样表现形式。

The pattern of flat seam binding is generally linear. This type of linear pattern is formed by connecting points formed by stitches of different sizes in series. The dyed lines themselves have very unique aesthetics and expression, and can be combined with different patterns and different combinations of lines to obtain rich patterns.

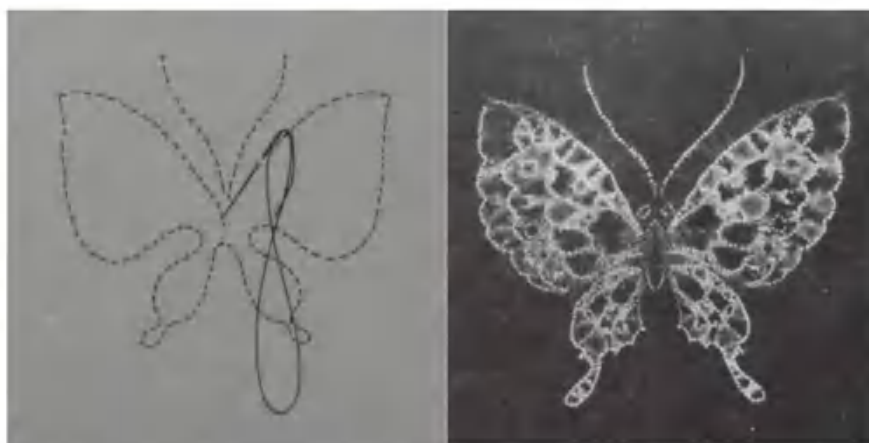


图 3.3.1 平缝

Figure 3.3.1 Bed Joint

单层平针串缝，此法为最基础的线扎，针脚间距离根据面料的厚薄，一般设定在 0.5—1 厘米之间，针脚太密或太宽，效果一般都不一定理想，所用的缝线要牢固，可以采用双线缝。缝线要一线到底中间不能接线，否则不容易抽紧扎线，扎线串缝完后，扎线头尾分别抽紧打结固定，越紧越好。这样在染色时才能使花纹清晰。另有跳针串缝与单层串缝基本一样，其中只是改变了针脚的距离，方便行针设计的 同时又产生了不同的花纹效果。

Single-layer flat stitching. This method is the most basic stitching. The distance between stitches is generally set between 0.5-1 cm according to the thickness of the fabric. If the stitches are too dense or too wide, the effect is generally not ideal. The stitches used should be firm and double stitches can be used. The stitching shall be from one thread to the middle, otherwise it is not easy to draw and tighten the binding thread. After the binding thread is stitched, the ends of the binding thread shall be drawn and knotted respectively for fixing, and the tighter the better. In this way, the pattern can be made clear during dyeing. In addition, the skip stitching is basically the same as the single-layer stitching, which only changes the distance of stitches and facilitates the design of stitches while producing different pattern effects.

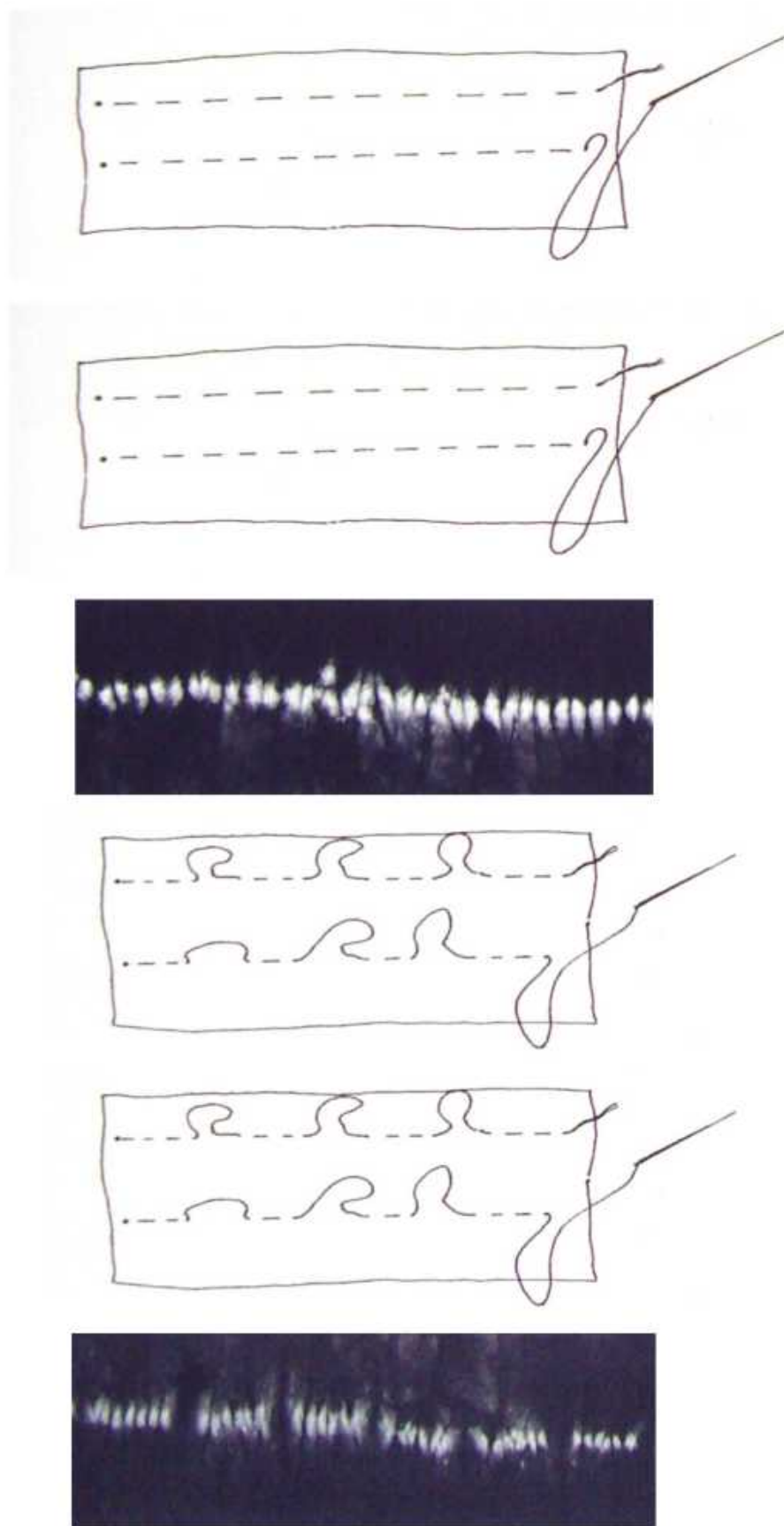


图 3. 3. 2 平缝

Figure 3.3.2 Bed Joint

2、折缝扎

2. Folding and binding

折缝扎的方法更适合表现对称形式的图形。折缝扎在缝制前要先将织物进行折合,然后利用织物的折合部分,沿织物的折线部位用平针缝的方法进行缝制。缝制后将缝线沿缝迹抽紧、扎牢。折缝扎的形式可以有很多种。例如,可以利用不同的缝线形式与折合部位形成关联来进行折缝,或者将缝线与织物的折线保持相应的距离进行折缝,染色后都会得到不同变化的对称图形。折缝扎的方法通过单面的缝制,不但可以获得图形自身左右或上下部分的对称,也可以获得完整的图形与图形之间的对称。在折缝扎中巧妙利用平缝扎的简单方法,可以事半功倍地得到丰富的图形效果的折线应保持相应的距离,缝后将缝线沿缝连抽紧、扎牢。这样缝扎后的纹样效果参差如犬齿状。

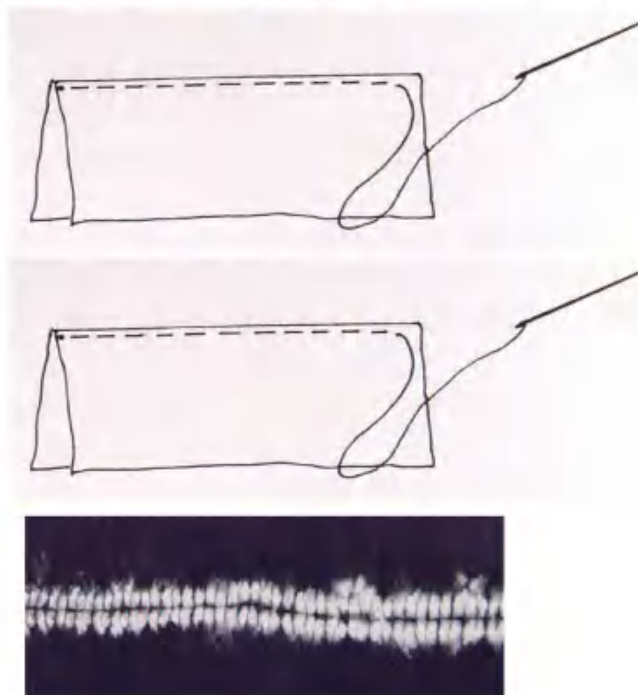
The folding method is more suitable for representing symmetrical patterns. Before folding, the fabric shall be folded first, and then the folded part of the fabric shall be used to sew along the fold line of the fabric by flat stitching. After sewing, the stitches shall be tightened and tied firmly along the seam. There are many forms of folding. For example, different stitching forms can be used to associate with the folded part for folding, or the stitching can be kept at a corresponding distance from the folded line of the fabric for folding, and different symmetrical patterns will be obtained after dyeing. The method of folding and binding can not only obtain the symmetry of the left and right or upper and lower parts of the graphic itself, but also obtain the symmetry between the complete graphic and the graphic through single-sided sewing. In the folding seam binding, the simple method of flat seam binding can be skillfully used to obtain a rich graphic effect with half the effort. The folding lines should be kept at a corresponding distance, and the stitching lines should be tightened and tied firmly along the seam after stitching. In this way, the pattern effect after stitching is uneven like dog teeth.

(1) 对折平缝

(2) Double-folding flat joint

可以是单缝迹平缝，也可以是双缝迹平缝。缝制中可以根据图形的需要，灵活地掌握缝迹与折线之间、缝迹与缝迹之间的距离，对折合缝。对折合缝的扎结方法比较适用于完整对称的纹样。只需将织物面料对折后沿对折线走针，针脚离折线边距离一般约 0.5 厘米左右，不能太远，太远则成了两行单层串缝，影响了效果，缝制前应按纹样的对称轴将织物对折，然后进行缝制，缝制后按缝迹将缝线抽紧、扎牢。

It can be a single-trace flat seam or a double-trace flat seam. During sewing, the distance between seams and fold lines and between seams can be flexibly grasped according to the needs of the graphics, and the seams can be folded in pairs. The knotting method of folded seams is more suitable for complete and symmetrical patterns. It is only necessary to fold the fabric in half and then stitch along the fold line. The stitch is generally about 0.5 cm away from the edge of the fold line and cannot be too far. If it is too far, it will become two rows of single-layer stitches, which affects the effect. Before stitching, the fabric should be folded in half according to the symmetry axis of the pattern, and then sewn. After stitching, the stitches should be tightened and tied firmly according to the stitching.



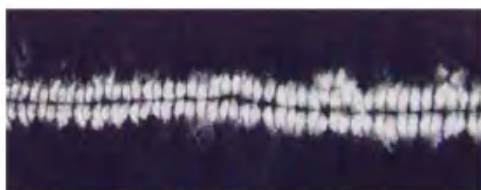
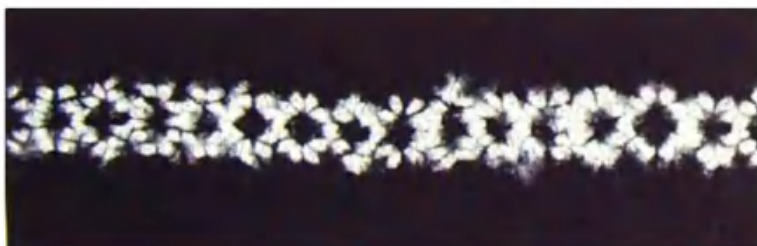
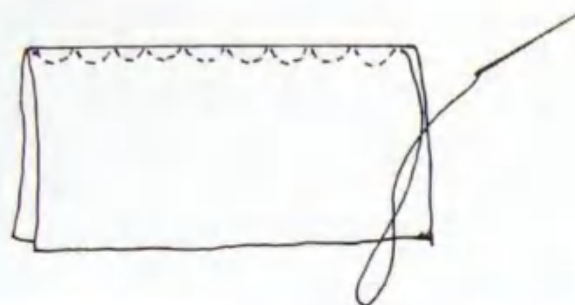


图 3.3.3 对折缝

Figure 3.3.3 Double Folded Joint

在扎染串缝线中既可以走直线,也可以走曲线,所谓小梅花,是因为其扎染花纹效果像国画中的小梅花点法.制作方法是面料对折后,沿对折边走曲线行针,一般每个半圆弧只需走 3-5 个针脚即可,同理也可以走大圆弧,针脚也相对增加.注意走针应在一个面上,不能绕过对折线,否则就不容易把线抽紧。

In the tie-dye string stitching, you can go either straight or curved. The so-called small plum blossom is because its tie-dye pattern effect is similar to the small plum blossom dot method in traditional Chinese painting. The production method is to fold the fabric in half and go along the curve along the folded edge. Generally, each semicircular arc only needs to go through 3-5 stitches. Similarly, you can also go through a large arc, and the stitches are relatively increased. Note that the stitches should be on the same surface and cannot bypass the folded line, otherwise it is not easy to draw the thread tightly.



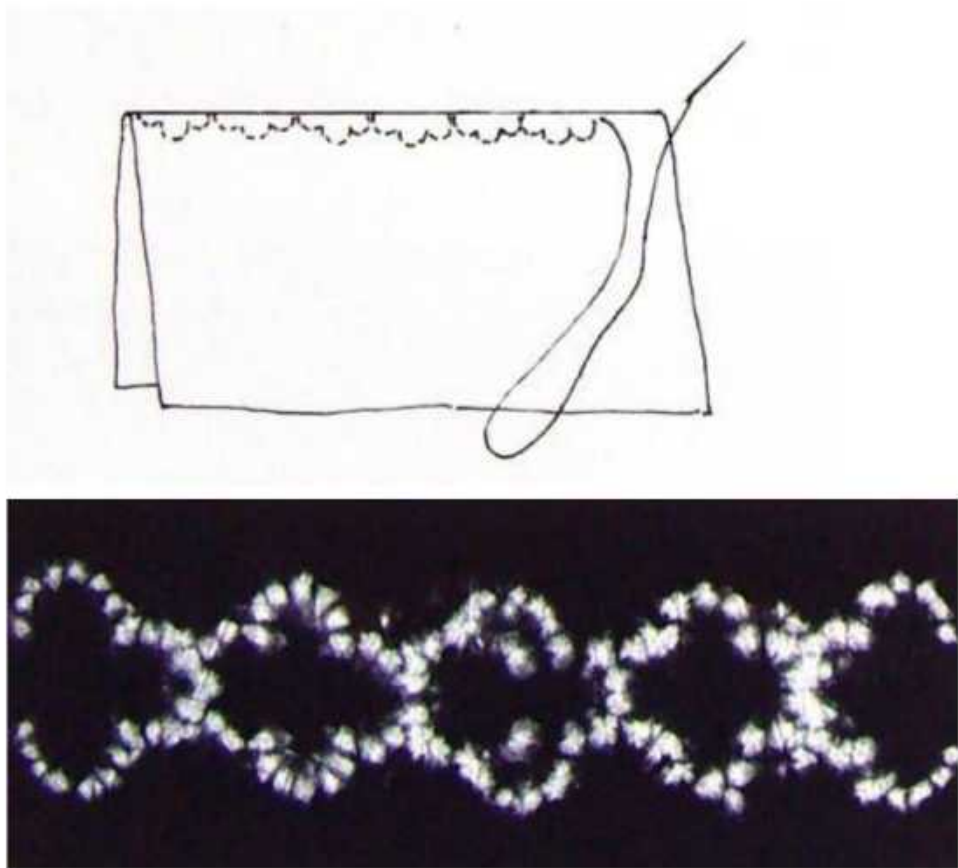


图 3.3.4 对折缝

Figure 3.3.4 Folded Joint

方胜是古代妇女的一种首饰，成菱形，这里是指针法扎染的走针不但可以是直线、曲线，同时也可以是折线，折线的方法可以是对折、三折、四折等。当然，也可以不折叠面料来设计方胜串缝。至于方胜的大小，走针的多少，是根据情况而定的。

Fang Sheng is a kind of jewelry for ancient women. It is in the shape of a diamond. Here, it means that the stitches for stitching and tie-dyeing can not only be straight lines and curves, but also can be broken lines. The methods of broken lines can be double folds, three folds, four folds, etc. Of course, Fang Sheng can also be designed without folding the fabric. As for the size of Fang Sheng, the number of needles is determined according to the situation.

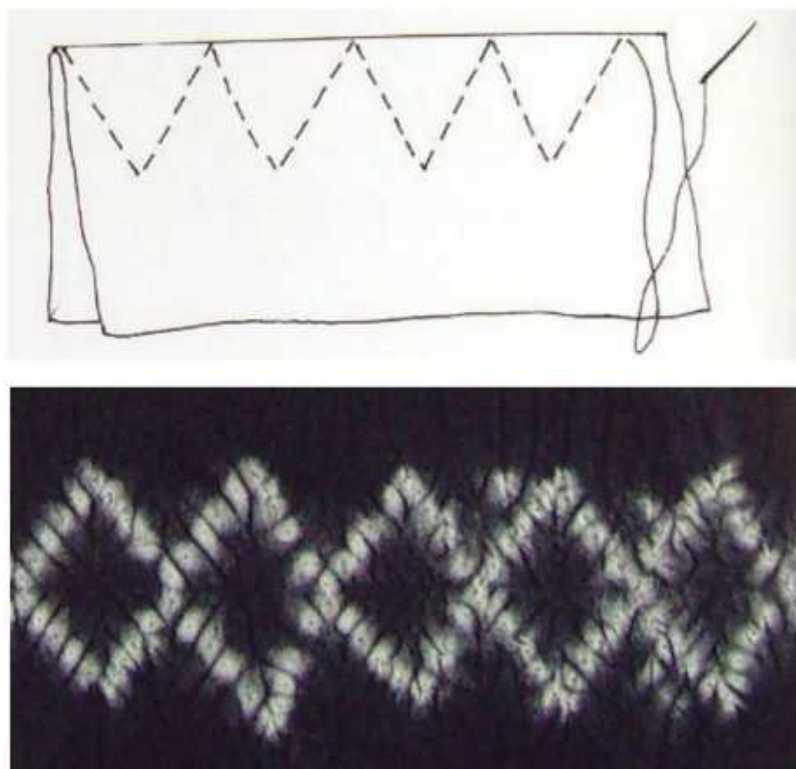


图 3.3.5 对折缝

Figure 3.3.5 Folded Joint

(2) 三折平缝

(2) Three-fold flat joint

所谓三折是将面料前后折叠, 折叠方法如图, 三折的折叠宽度一般在 1 厘米左右, 在折叠宽度中间走针, 即距离折叠边 0.5 厘米左右, 花纹的特点是三道缝线的两边清晰, 中间色晕较大一些

The so-called three-fold is to fold the fabric back and forth. The folding method is as shown in the figure. The folding width of the three-fold is generally about 1 cm, and the stitch is arranged in the middle of the folding width, that is, about 0.5 cm away from the folding edge. The pattern is characterized by clear sides of the three stitches and a larger color halo in the middle.

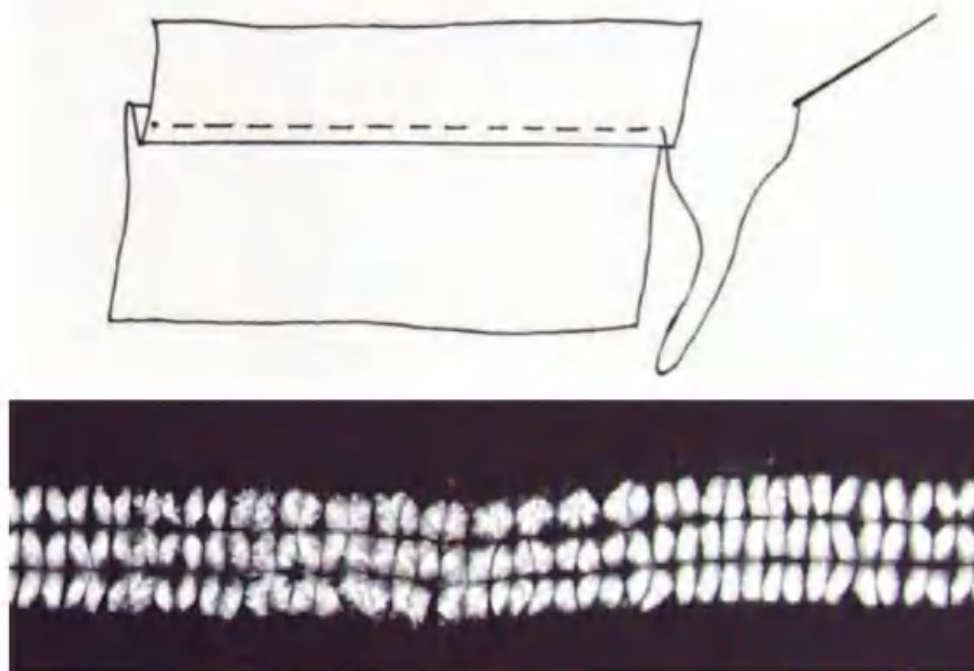


图 3.3.6 三折缝

Figure 3.3.6 Three-fold Joint

(3) 四折平缝

(4) Four-fold flat seam

四折平缝时要先将织物双对折并将两条折线对齐，在缝线与折线保持适当距离的状态下进行平缝。织物两个对折缝之间的距离应根据织物的薄厚控制在适当的范围之内。四折平缝可以是单线迹的平缝，也可以是双线迹的平缝，缝线的间距可以根据图形的需要进行设定。分为四折串缝与合下串缝，是因其折叠串缝扎染后同样可得四行平行的花纹，但因其折叠方法的不同，所产生的花纹效果也各自不同。四折串缝是对折后再对折，而合下串缝是中间的面料凹下，折叠宽度一般为 1 厘米左右，缝线走针一般在折叠线的中间。四折串缝的效果是一边花纹清晰，一边色晕较大；合下串缝的效果是两边的花纹清晰，中间的色晕大。

When four-folding flat seam, the fabric shall be folded in double and the two fold lines shall be aligned first, and the flat seam shall be carried out while the stitch line is kept at an appropriate distance from the fold line. The distance between two folds of the fabric shall be controlled within an appropriate range according to the thickness of the fabric. Four-fold flat seams can be flat seams with single stitches or

flat seams with double stitches. The spacing of stitches can be set according to the needs of the graphic. It can be divided into four-fold string seams and closed string seams, because the four rows of parallel patterns can also be obtained after the folding string seams are tie-dyed, but the patterns produced are different due to different folding methods. The four-fold seam is folded in half and then folded in half, while the lower seam is concave in the middle fabric, with a folding width of about 1 cm, and the stitches are generally in the middle of the folding line. The effect of four-fold sewing is that the pattern on one side is clear and the color halo on the other side is large; the effect of closing the sewing is that the pattern on both sides is clear and the color halo in the middle is large.

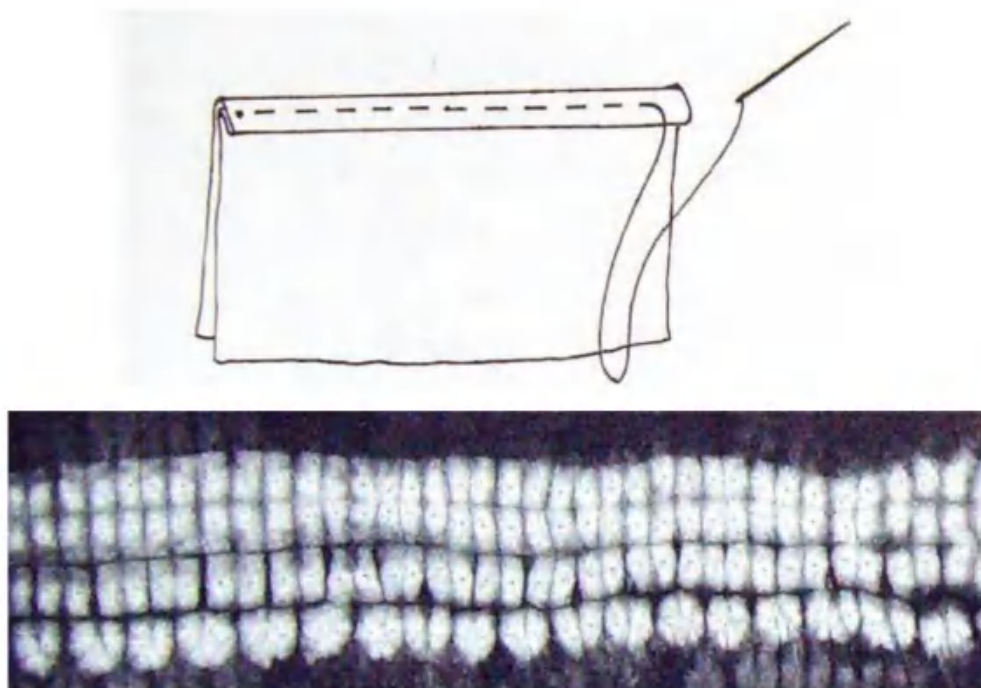


图 3.3.7 四折缝

Figure 3.3.7 Four-fold Joint

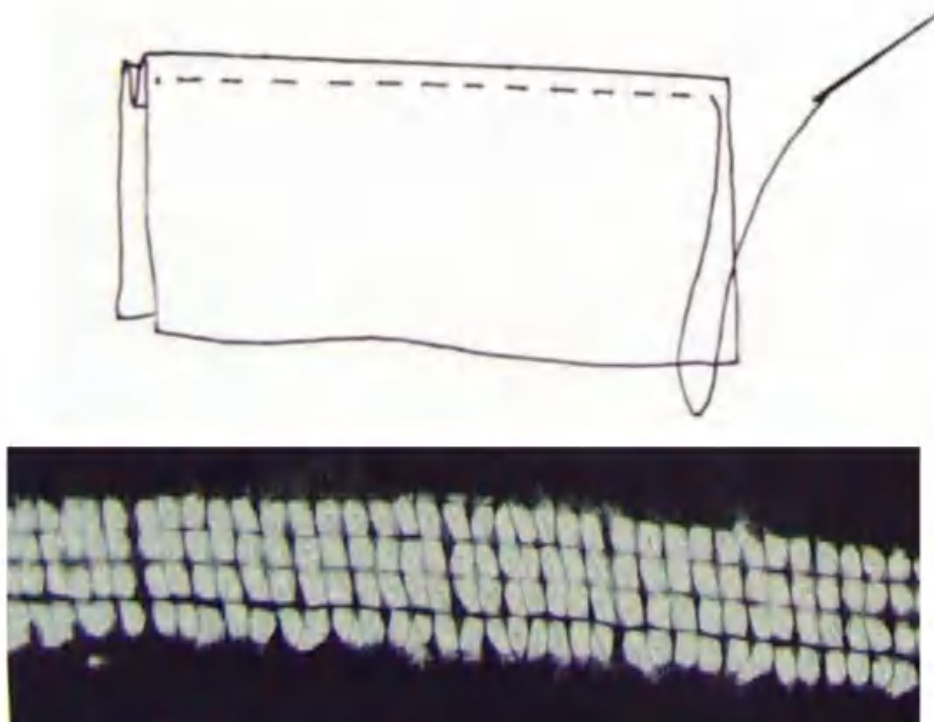


图 3.3.8 四折缝

Figure 3.3.8 Four-fold joint

3、卷缝扎

3. Roll seaming

卷缝扎也就是所谓绕针串缝,就是针脚必须绕过对折线,必须边绕针边抽紧。是运用环针缝制的方法缝出所需要的图形,然后进行抽紧、扎牢的方法。这种方法可以在单层的织物上面进行,也可以将织物折合后进行;可以依据具体的图形进行缝制,也可以不受具体图形的限制相对轻松地进行缝制。对于针距的把握,可以根据所需要的图形效果控制针距的疏密。需要注意的是采用卷缝扎的方法时,由于针线与织物在缝制过程中形成的特殊关系,应一面缝制一面沿缝迹抽紧。使用卷缝扎染出的图形相对清晰、实在。特别是对较为具体的图形进行卷缝,就可以得到相对硬朗的染色效果和相对清晰的图形形状缝,然后沿缝迹将织物抽紧、扎牢。卷缝时所采用的针距大小应该根据图形的需要相应地调整,还应该结合选用染料的渗透性能来确定针距的大小。如果需要的图形效果显得紧凑、坚实,则针距的把握应该相对密集,反之则针距可以较大。如果染料的渗透能力相对较大,针距则应相对小、密,反之针距应较大、疏。一般情况下,对折卷缝的针距

应该掌握在 10mm 左右，多折卷缝要先将织物双对折或者多折，再利用环针缝的针法沿折线进行缝制，然后沿缝迹抽紧、扎牢。多折卷缝的针距一般不得小于 12mm。

Curling and stitching is also called stitching around needles, that is, the stitches must bypass the folded line and must be tightened while winding the needles. It is a method of sewing the required patterns with ring needles, and then drawing and fastening them. This method can be carried out on a single layer of fabric, or after the fabric is folded; it can be sewn according to specific patterns, or it can be sewn relatively easily without the limitation of specific patterns. For the control of stitch length, the density of stitch length can be controlled according to the required graphic effect. It should be noted that when the curling and sewing method is adopted, due to the special relationship between the needle thread and the fabric in the sewing process, it should be sewn while drawn tightly along the seam. The graphics tied and dyed with roll seams are relatively clear and real. Especially for the more specific graphics to roll seam, you can obtain a relatively tough dyeing effect and a relatively clear graphic shape seam, and then along the seam to tighten the fabric. The length of stitches used in rolling and seaming shall be adjusted accordingly according to the needs of the graphics, and the length of stitches shall be determined in combination with the permeability of the selected dye. If the required graphic effect appears compact and solid, the stitch length should be relatively dense, otherwise the stitch length can be larger. If the penetration capacity of dye is relatively large, the stitch length should be relatively small and dense, otherwise the stitch length should be large and sparse. In general, the stitch length of the folding seam should be controlled at about 10mm. For the multi-folding seam, the fabric should be folded in double or multi-folding first, then sewn along the fold line by the stitching method of the ring stitch, and then tightened and tied firmly along the stitch. The stitch length of the multi-fold seam shall generally not be less than 12mm.

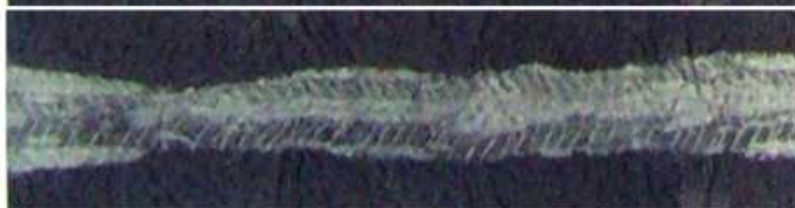
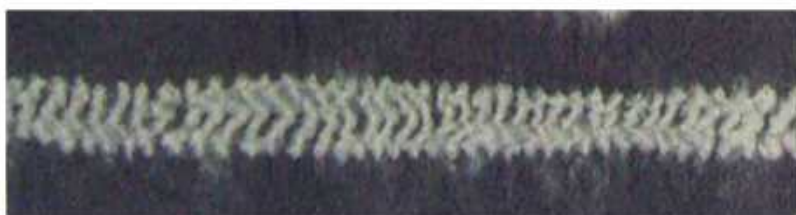
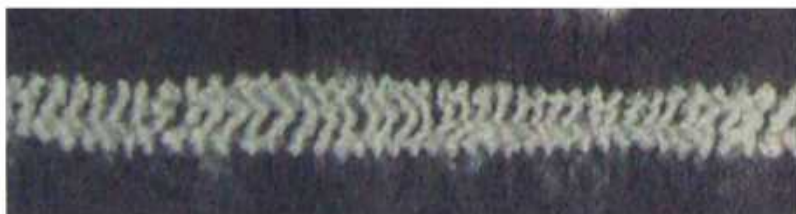
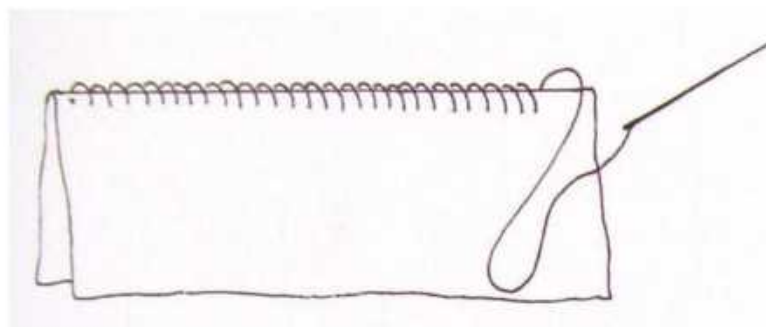


图 3.3.9 卷缝

Figure 3.3.9 Roll Joint

(二) 捆

(II) Bundle

捆扎类型的扎结方法是扎染扎结方法中的另一个类别。这个类别的扎结方法省去了针线缝制的过程，是直接通过对织物的搓、拧、捆、扎等，再结合绳线固定织物的扎结状态后，然后染色的方法。捆扎的扎结方法操作相对简单，也相对轻松，染色后所形成的效果变化也较为丰富。使用这类扎结方法染制出的纹样特

点是不受具体形状的限制与影响。往往显得更加丰富、洒脱、自然。这种扎结方法所获得的纹样风格，偶然的成分比较多，可以给人充分遐想的空间。但是，由于这种扎结方法变化较大，因此，更应该结合预期的染色效果选择使用。在使用捆扎类的扎结方法时应该注意两点。一要注意织物在捆扎过程中与染色结果的对应，要时时对织物进行必要的整理，以免出现染色不均匀的结果。二要注意恰当地把握这一类扎结方法染色时间的长短。通常情况下，这一类扎结方法需要的染色时间相对较长，以免里层的织物得不到预期的染色程度，从而影响最后效果。

The lashing method of the lashing type is another category in the lashing method. This kind of knotting method eliminates the process of sewing needles and threads, and is a method of directly twisting, twisting, bundling and tying the fabric, and then fixing the knotting state of the fabric in combination with ropes and threads, and then dyeing. The binding method is relatively simple and easy to operate, and the effect of dyeing is also rich. The pattern made by this kind of knotting method is not limited and affected by the specific shape. It tends to be richer, freer and natural. The pattern style obtained by this knotting method has many accidental components, which can give people full room for imagination. However, since this tying method varies greatly, it should be used in combination with the expected staining effect. Two points should be noted when using binding methods. First, attention should be paid to the correspondence between the fabric and the dyeing results during the binding process, and the fabric should be finished as necessary to avoid uneven dyeing results. Secondly, the dyeing time of this kind of ligation method should be properly controlled. Typically, this type of knotting method requires a relatively long dyeing time so that the inner fabric does not get the desired degree of dyeing, which affects the final effect.

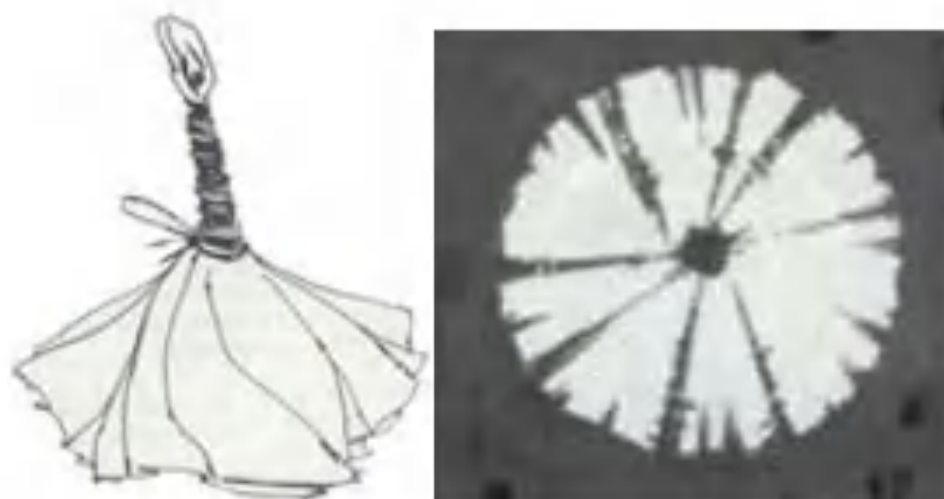


图 3.3.10 捆

Figure 3.3.10 Bundle

（三）叠

(III) Overlapping

叠是将布料用不同的方式进行叠折，折叠的目的是要让染料染到每一道折叠的部位，叠的方式可以不断创新，还可以参考折纸技艺，折叠的织物可以进行不同的缝制方法进行扎结，如：平缝，卷缝，或者其他的针法。同时还可以进行多层次的染色，或者多色套染，还可以进行染色后再折叠，再套色。手法灵活多样，折叠的方法不同，染色的效果和纹样都不尽相同。一般来说，折叠后的织物要进行捆扎，捆的松紧也疏密也决定了纹样的最终效果。

Folding is to fold the fabric in different ways. The purpose of folding is to dye the dyes to each folded part. The folding method can be continuously innovated, and can also refer to the folding technique. The folded fabric can be tied by different sewing methods, such as flat seam, roll seam, or other stitching methods. At the same time, multi-level dyeing or multi-color overdyeing can be carried out, and folding and overdyeing can be carried out after dyeing. The techniques are flexible and diverse, and the folding methods are different, so the dyeing effect and patterns are different. Generally speaking, the folded fabric should be bundled, and the tightness and density of the bundle also determine the final effect of the pattern.

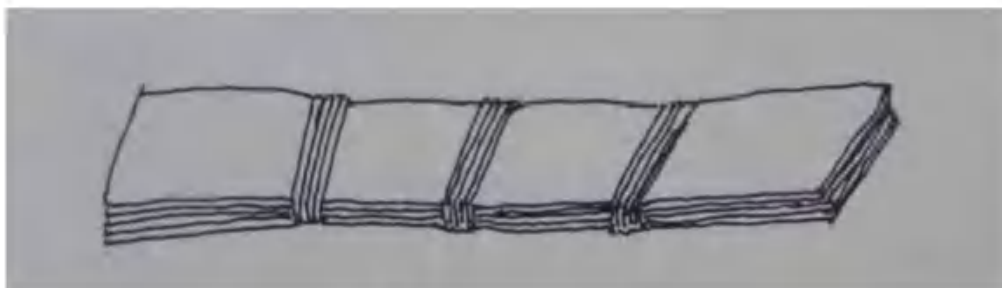


图 3.3.11 叠

Figure 3.3.11 Overlay

(四) 挤

(IV) Extrusion

将布料围裹在木棍或者其他圆柱体上，固定两端，向中间挤压，形成褶皱，这种方法可以成为挤轧法。一般来说，包裹布料的时候尽量使布料松弛，方便挤压，挤压后形成鱼鳞状，染色后出现了斑驳的图案效果。另外可以运用一些特殊的圆柱形工具，例如弹簧或者油烟机管道，可以将包裹的布料直接夹在缝隙中，形成特殊的纹样效果。生活中常见的圆形材料都可以作为其辅助道具使用，小到筷子，大到 PVC 管材，都可以用于波纹扎的尝试。具体操作程序是首先将织物用水打潮、放平，然后将织物平整地层层缠绕在 PVC 管材表面，再用较细的线轻轻地分段缠绕，将织物固定。最后用双手将缠绕的织物向一个方向推搓，直至织物密集的起皱挤紧，然后进行染色。这种扎结方法在使用的时候，可以根据纹理大小的需要调节织物皱褶的密度以及圆形道具直径的大小。

This method can be called extrusion by wrapping the cloth around a stick or other cylinder, fixing both ends, and squeezing towards the middle to form wrinkles. Generally speaking, when wrapping the cloth, try to make the cloth loose, convenient to squeeze, squeeze to form a fish scale shape, after dyeing a mottled pattern effect. In addition, some special cylindrical tools, such as springs or range hood pipes, can be used to clamp the wrapped cloth directly in the gap to form a special pattern effect. Common round materials in daily life can be used as auxiliary props, ranging from chopsticks to PVC pipes. The specific operation procedure is to first moisten and level the fabric with water, then wrap the flat stratum layer of the fabric around the surface of the PVC pipe, and then gently wrap the fabric in sections with thinner threads to fix

the fabric. Finally, push the wound fabric in one direction with both hands until the fabric is densely wrinkled and squeezed, and then dye it. This knotting method can be used to adjust the density of fabric wrinkles and the diameter of circular props according to the size of texture.



图 3.3.12 挤

Figure 3.3.12 Extrusion

(五) 抓

(V) Grasp

抓扎一般是在平面上用双手抓叠布料，与叠扎不同的是，抓扎更加随意，图案纹样也呈现不规则形，叠扎的图案一般来说比较花型工整，抓扎可以平行抓，斜向抓，也可以多抓，也可以少抓。抓扎更适合抽象的效果，具有烘托气氛的作用。

Grasping is generally to grasp the folded fabric with both hands on the plane. Unlike folding, grasping is more casual, and the pattern is also irregular. The folded pattern is generally neat in pattern. Grasping can be parallel, oblique, more or less. Grasping is more suitable for abstract effects and has the effect of setting off the atmosphere.

例如：大理石纹扎。首先将织物用清水浸湿或喷至半湿，然后平放。再顺次将织物折皱堆积成小山状，堆积的高度一般应该掌握在 4-5cm。将织物紧密堆积后，再用绳线将织物从任意方向扎牢。采用这种方法要尽量使织物自然折皱堆积的部分排列紧密，从而确保纹样变化的清晰。利用石纹扎方法的基本原理，可以有很多种不同的操作方式。例如，可以使用白色或带有底色的织物进行石纹扎的操作；也可以多次重复使用石纹扎法并结合单色染料进行染色；还可以通过重复使用石纹扎的方法，对织物进行多次多色的染色。另外，可以重复使用一次染色时使用过的绳线，继续扎结并进行二次不同色彩的染色，这样一次染色后遗留在绳线上的染料可以在二次染色过程中渗入织物，形成线条的纹样，达到丰富染色效果的目的。

For example: marble tie. The fabric is first soaked in clear water or sprayed semi-wet and then laid flat. Then, the fabric is crumpled and piled up into a hill in sequence, and the pile height should generally be controlled at 4-5cm. After the fabric is tightly stacked, the fabric shall be tied firmly with ropes in any direction. In this way, the natural wrinkles of the fabric should be arranged as closely as possible to ensure the clarity of the pattern change. There are many different ways to use the basic principles of stone binding. For example, a white or background fabric can be used for stone tying; the stone tying method can also be reused many times for dyeing in combination with monochromatic dyes; and the fabric can also be multicolored multiple times by reusing the stone tying method. In addition, the cord used in the primary dyeing can be reused, and the knotting and secondary dyeing with different colors can be continued, so that the dye left on the cord after the primary dyeing can penetrate into the fabric in the secondary dyeing process to form the pattern of the line and achieve the purpose of enriching the dyeing effect.

采用石纹扎方法染出的纹样效果类似于石头的纹理，且纹样效果变化丰富、虚实有致、聚散自然。尤其利用石纹扎的方法重复扎结织物、重复染色，所获得的纹样效果更显得变化神秘、肌理浑厚。

The pattern effect of the stone tie method is similar to the texture of the stone, and the pattern effect is rich in variation, virtual and real, and natural in gathering and

dispersing. Especially, the pattern effect obtained is more mysterious and the texture is thicker by repeatedly tying the fabric and dyeing with stone pattern.

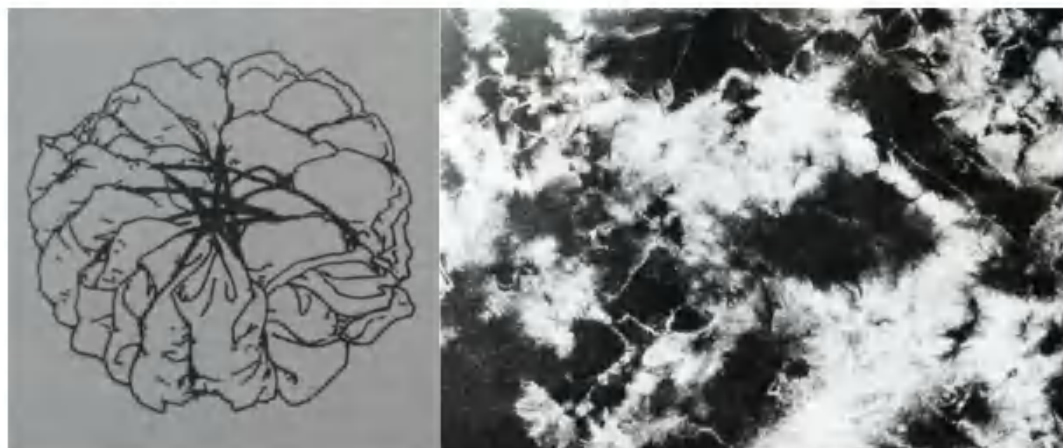


图 3. 3. 13 大理石纹

Figure 3.3.13 Marble Grain

(六) 卷

(VI) Volume

卷扎是首先将织物平铺，然后根据纹样的位置将织物的局部垂直拎起，再根据纹样的大小将织物分段环形缠绕，然后扎牢。卷扎的方法相对简单随意、便于操作，省去了针线缝制的步骤。卷扎方法所获得的纹样效果，几乎是扎染织物中最多见的纹样效果。

Rolling is to lay the fabric flat first, then lift the fabric vertically according to the position of the pattern, then wind the fabric in sections and rings according to the size of the pattern, and then tie it firmly. The rolling method is relatively simple and easy to operate, eliminating the needling and stitching steps. The pattern effect obtained by rolling method is almost the most common pattern effect in tie-dyed fabrics.

卷扎的纹样特点基本为规则的或不规则的圆形，也可以是其他形状。错落有致的卷扎纹样活泼可爱、古朴自然、简洁明快，卷扎的纹样可以作为单一的元素构成丰富的纹样，也可以与其他的扎结方法同时使用，形成丰富的纹样变化。

The pattern of curling is basically a regular or irregular circle, or other shapes. The well-proportioned curled patterns are lively and lovely, simple and natural,

concise and lively. The curled patterns can be used as a single element to form rich patterns, or can be used simultaneously with other knotting methods to form rich patterns.

(七) 夹

(VII) Clamp

夹扎一般利用道具进行。是首先将织物放平，然后根据纹样的需要将织物折叠成等边三角形或等腰三角形、正方形、长方形等，再用提前准备好的、不同形状的夹板对称地将织物夹紧，最后用绳子或其他工具将夹板和织物扎牢进行染色。夹板的取材非常方便，夹板的形状也可以是简单的几何形状，也可以事先按照纹样的需要制作具体形状的夹板。夹板的材料多种多样，只要可以在染色中起到防染作用的就可以使用。如：利用圆形、三角形、六边形木板或竹片、竹夹、竹棍将折叠后的织物夹住，然后用绳捆紧形成防染，夹板之间的织物产生硬直的“冰纹”效果，与折叠扎法相比，黑白效果更分明，且有丰富的色晕。

Clamping is generally carried out with props. First, lay the fabric flat, then fold the fabric into equilateral triangle or isosceles triangle, square, rectangular, etc. according to the pattern needs, then clamp the fabric symmetrically with splints of different shapes prepared in advance, and finally tie the splints and fabric firmly with ropes or other tools for dyeing. The splint is very convenient to take materials. The shape of the splint can also be a simple geometric shape, or a specific shape of splint can be made in advance according to the needs of the pattern. The splint is made of a variety of materials and can be used as long as it can play an anti-staining role in dyeing. For example, the folded fabric is clamped by round, triangular and hexagonal wooden boards or bamboo chips, bamboo clips and bamboo sticks, and then tied with ropes to form an anti-dyeing effect. The fabric between splints produces a hard and straight "ice grain" effect. Compared with the folding and binding method, the black-and-white effect is more distinct and has rich color halo.

夹板扎的纹样效果取决于夹板的形状，也取决于夹板与织物形成的不同角度，通常呈现面状的特征。尤其是使用没有具体形状的夹板时，可以通过对夹板位置、方向的调整来达到意想不到的染色效果。

The pattern effect of splint binding depends on the shape of the splint and also on the different angles formed by the splint and the fabric, usually showing a planar characteristic. Especially when using a splint without a specific shape, the unexpected staining effect can be achieved by adjusting the position and direction of the splint.

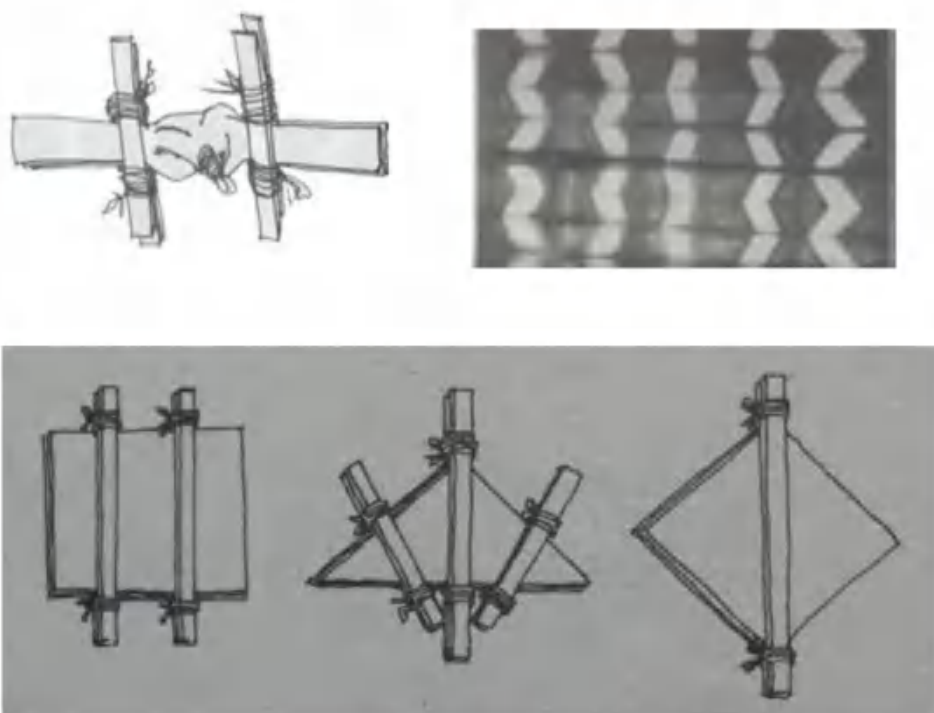


图 3.3.14 夹扎

Figure 3.3.14 Clipping

(八) 包

(VIII) Package

将扎染面料中包入豆子、硬币或小石子等不会被染也不会被破坏的小物体，再如同自由塔形一样把其捆扎紧。另外在织物的表面包扎上防染材料，犹如给扎染的织物带上一顶帽子，首先将需要缝扎纹样的织物部分缝制，按缝迹抽紧，然后利用干净的纸、布或者布条包在抽紧的织物表层。为了防止染料浸入，可以再在纸或布的外层包裹上一至两层塑料布，从而起到防染的作用。最后将织物用力

扎牢进行染色。通常情况下，这种扎结方法可以结合其他的扎结方法同时使用。

Tie-dyed fabrics are wrapped in small objects such as beans, coins or small stones that are neither dyed nor destroyed, and then tied tightly like a free tower. In addition, the surface of the fabric is wrapped with anti-dye materials, just like putting a hat on the tie-dyed fabric. First, the part of the fabric that needs to be sewn is sewn tightly according to the sewn marks, and then clean paper, cloth or cloth strips are wrapped on the surface of the tightly drawn fabric. In order to prevent dye from immersing, one or two layers of plastic cloth can be wrapped on the outer layer of paper or cloth to prevent dyeing. Finally, tie the fabric firmly for dyeing. Typically, this tying method can be used in conjunction with other tying methods.

帽子扎的纹样特点带有明显的面状特征。可以是规则或不规则的形状，也可以是具象的形状。帽子扎的染色效果很容易在整体的染色效果中显得非常突出。这种扎结方法可以形成白色或有色的块面感效果。同时，由于其边缘的少量染料渗透效果，又可以与其他纹样的染色效果自然地融合为一体

The pattern of the hat tie has obvious planar characteristics. It can be a regular or irregular shape or a concrete shape. The dyeing effect of the cap tie is easily prominent in the overall dyeing effect. This knotting method can form a white or colored block effect. At the same time, due to the small amount of dye penetration effect at its edges, it can naturally integrate with the dyeing effect of other patterns.

（九）系

(IX) System

系是利用织物的边角进行打结系扎，将织物作对角、折叠、不同方式折曲后自身打结抽紧，产生阻断染液渗入的作用。打结的方式有：四角打结，斜打结，任意部位打结等。

It is to use the corners of the fabric for knotting and tying. After the fabric is bent diagonally, folded and in different ways, it is knotted and tightened to block the infiltration of dye. Knotting methods: knotting at four corners, oblique knotting, knotting at any part, etc.



图 3.3.15 系扎

Figure 3.3.15 Tying

(十) 综合扎法

(X) Comprehensive binding

将捆扎，缝绞及夹板等多种技巧综合应用，不同的组合可得到丰富多彩的效果。在扎染工艺的染色过程中，不同的扎结方法与扎结形式都起着防止织物局部染色的作用，是呈现出不同纹样的关键。无论是织物自身对织物的遮挡，还是利用材料及道具对织物的遮挡，目的都是防止染料渗入，形成图形。对不同扎结方式的探求与尝试，会对扎染纹样的变化与丰富起到积极的作用。只要在创作中充分发挥想象力，并且根据不同的环境、不同的条件开拓不同的扎结工具、材料和方法，便能够创作出更多丰富多彩的扎染作品。

A variety of techniques such as binding, stitching and splinting are applied comprehensively, and different combinations can obtain rich and colorful effects. In the dyeing process of tie-dyeing, different knotting methods and forms play a role in preventing local dyeing of fabrics, which is the key to present different patterns. Whether the fabric itself shields the fabric, or the fabric is shielded by materials and props, the purpose is to prevent dye from penetrating and forming a pattern. The exploration and attempt of different knotting patterns will play a positive role in the change and enrichment of tie-dye patterns. As long as we give full play to our imagination in creation and develop different binding tools, materials and methods according to different environments and conditions, we can create more colorful tie-dye works.

扎、缝、夹结合，将织物对折再以对折，夹住两个角，缝叶形，扎圆花。将捆扎，打结扎，缝绞及夹板等多种技巧综合应用，不同的组合可得到丰富多彩

的效果。

Tie, sew and clamp together, fold the fabric in half and then fold it in half, clamp the two corners, sew the leaves and tie round flowers. Binding, knotting, stitching, splinting and other techniques are applied comprehensively, and different combinations can obtain rich and colorful effects.

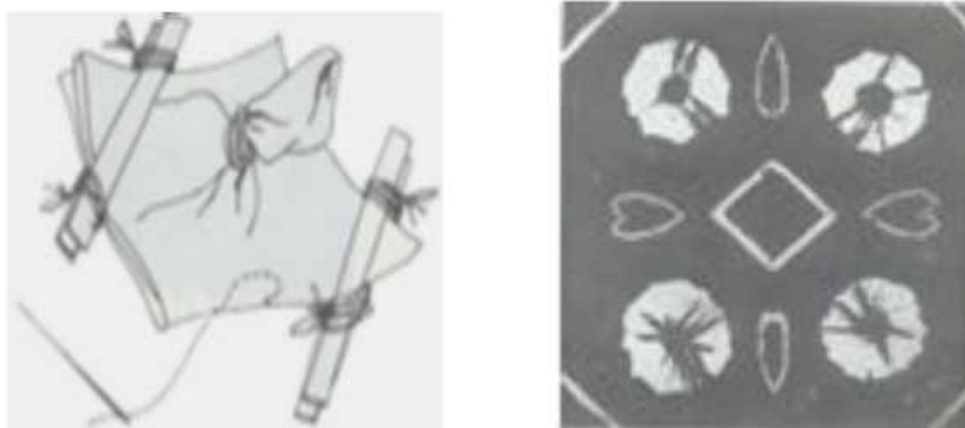


图 3.3.16 综合扎

Fig. 3.3.16 Integrated Binding

拓展练习

Extension exercise

- 1、利用扎结中的缝扎手法进行扎染作品扎结设计
- 2、Tie-dyeing design of tie-knots by using the stitching technique in tie-knots
- 3、选择一种或几种扎结方法进行扎结设计与制作
- 4、Choose one or several knotting methods for knotting design and fabricatio

模块四 扎染的染色技艺

Module 4 Tie-dyeing Techniques

任务一 扎染染料及应用

Task I Tie-dye and its application

任务目标

Mission Objectives

- 1、了解常用的扎染染料及特点
- 2、Understand the common tie-dyes and their characteristics
- 3、掌握染料的选择与应用
- 4、Master the selection and application of dye

任务描述

Task Description

纺织品染色用染料主要分为天然染料、化学染料两种，其中天然染料又可以分为植物染料、动物染料、矿物染料。其着色的方式以及染色的原理各不相同。The dyes for textile dyeing are mainly divided into natural dyes and chemical dyes, among which natural dyes can be further divided into plant dyes, animal dyes and mineral dyes. The way they are colored and the principle of coloring vary.

任务要求

Mission Requirements

通过本课程的学习，了解扎染染料的种类，特征以及染色原理。能够根据染色的需求对扎染染料进行选择与应用。

Through the study of this course, learn about the types, characteristics and dyeing principles of tie-dyes. Be able to select and apply tie-dyes according to the needs of dyeing.

任务实施

Task implementation

一、课前导学

I. Pre-class Guidance Before class.

课前学生通过数字资源库或网络资源，图片资源进行观看学习，分析扎染染料种类以及特点。

Before class, students watch and learn through digital resource library or network resources and picture resources to analyze the types and characteristics of tie-dyes.

二、课堂教学

II. Classroom teaching

(一) 扎染染料种类

(I) Types of tie-dyes

1、天然染料

1. Natural dye

天然染料种类主要包含有植物染料、动物染料、矿物质染料几种。

The types of natural dyes mainly include plant dyes, animal dyes and mineral dyes.

(1) 植物染料

(1) Plant dye

植物染料是提取植物的色素制作而成的染料，植物染料种类十分丰富，分布的地域也很广，提取的方法各有差异。染料提取的方法也非常复杂，要通过捣碎、浸泡、发酵、沉淀、过滤等过程，费工费时。传统的民间扎染几乎都是用天然的植物来制作染料的。植物染料以染棉织品为主。常见的染料色相有红色、黄色、绿色、蓝色、黑色等。红色由苏木、红花、茜草等植物研制而成，黄色由槐花、蓼草、黄栌、栀子、黄柏等研制而成，绿色由蓼草和鼠李等植物研制而成，蓝靛则用蓼蓝、马蓝、木兰制作而成，黑色则由麻栎、胡桃、五倍子、紫草研制而成。

Plant dyes are dyes made by extracting pigments from plants. Plant dyes are rich in variety and widely distributed, and the extraction methods are different. Dye extraction methods are also very complicated, and it is labor-consuming and time-consuming to process through mashing, soaking, fermentation, precipitation, filtration, etc. Traditional folk tie-dyes are almost all made from natural plants. Plant dyes are mainly dyed cotton fabrics. Common dye colors include red, yellow, green,

blue, black, etc. Red is developed from such plants as hematoxylum, safflower and rubia; yellow is developed from sophora japonica, arthraxon, smoke tree, gardenia and cypress; green is developed from arthraxon, rat and plum; indigo is developed from polygonum blue, maroon blue and magnolia; black is developed from Quercus acuminata, Hu Tao, quinquefolium and purple grass.

在我国植物染料的使用有非常悠久的历史，自周代、秦代就有记载，是古代织物染色材料和染色工艺的主流。我国在植物染色上积累了丰富的经验，在历史上有领先的地位，早在周朝就设立了专门掌染丝帛的官职—染人。汉唐以后，我国的染色技术更叫高超，在长沙马王堆和新疆的阿斯塔纳墓群均出土有鲜艳的纺织品出土，在现代染色中，几种植物染料，如马蓝、红花、栀子、茜草等等均在沿用。

The use of plant dyes in China has a very long history, which has been recorded since the Zhou and Qin dynasties. It is the mainstream of fabric dyeing materials and dyeing technology in ancient times. China has accumulated rich experience in plant dyeing and has a leading position in history. As early as the Zhou Dynasty, an official position specializing in dyeing silk was set up. After the Han and Tang Dynasties, China's dyeing technology was more called superb. Bright textiles were unearthed from Mawangdui in Changsha and Astana Tombs in Xinjiang. In modern dyeing, several plant dyes, such as horse blue, safflower, gardenia and rubia, were used.

在众多的植物染料中，靛蓝是一种比较好的染料，它是由板蓝根作为主要原料提取而成的。染料的制作方法非常繁琐，将收割的板蓝根的叶茎放入大木桶，加入清水浸泡大约一周时间。随后除去水中的板蓝根渣，在加入按严格比例配制好的石灰水，搅拌均匀。再进行打水，直到染水表面打出一层泡沫，最后将打好的染水静置一段时间，便可得到沉淀在底部的蓝靛染料了。植物染料的开发与利用，为织物染色提供了广泛的前景，但是织物染料由于规模化生产比较难，着色效率比较低，其发展受到了一定的制约。但随着生态环境的进步和人们生活观念的改变，植物染料在现代生活中也运用的越来越广泛。

Among many plant dyes, indigo is a good dye, which is extracted from isatis root as the main raw material. The method of making dyes is very cumbersome. Put the leaf stems of harvested isatis roots into a large wooden barrel and soak them in clear

water for about a week. Then remove the isatis root residue in the water, add the lime water prepared in strict proportion, and stir well. Kick the water until a layer of foam is formed on the surface of the dye, and finally let the dye stand for a period of time to obtain the indigo dye settled at the bottom. The development and utilization of plant dyes provide a broad prospect for fabric dyeing, but the development of fabric dyes is restricted to some extent due to the difficulty of large-scale production and low dyeing efficiency. However, with the progress of ecological environment and the change of people's life concept, plant dyes are also widely used in modern life.

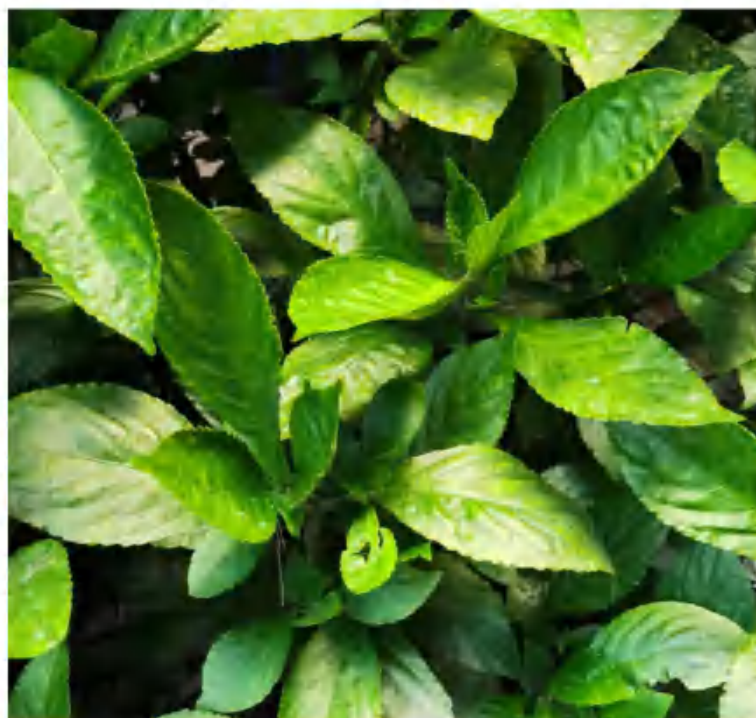


图 4.1.1 板蓝根

Figure 4.1.1 Isatis root

(2) 动物染料

(2) Animal dye

动物染料品种比较少，胭脂虫是其中的一种。现在一般用于化妆品。它是一种非常珍贵的经济资源昆虫，通常寄生在仙人掌类植物上。雌性的胭脂虫经过纯碱，明矾，酒石酸等处理能得到红色的沉淀，胭脂红适合天然纤维的染色。

Animal dye species are relatively few, and cochineal is one of them. It is now commonly used in cosmetics. It is a very valuable economic resource insect, usually parasitic on cactus plants. Female cochineals can obtain red precipitates after

treatment with soda ash, alum, tartaric acid, etc. Carmine is suitable for dyeing natural fibers.

(2) 矿物染料

(3) Mineral dye

矿物染料是矿物质材料，经过粉碎研磨加工而成，最常用的有铁矿石粉，朱砂石矿石粉，赭石粉，一般来讲，矿物粉需要用黏合剂黏附在纺织品上，古代称之为石染，从出土的文物来看，约 6000 多年前的河姆渡文化就开始使用矿物质软了了，说明我国很早就采用了这种染色方式。

Mineral dyes are mineral materials, which are crushed, ground and processed. The most commonly used mineral dyes include iron ore powder, cinnabar ore powder and ochre powder. Generally speaking, mineral powder needs to be adhered to textiles with adhesives, which was called stone dyes in ancient times. From the unearthed cultural relics, minerals began to be used in Hemudu culture more than 6,000 years ago. This indicates that this dyeing method has been adopted in China for a long time.

2、化学染料

2. Chemical dye

中国古代，无论是染料的提取还是染色的加工都属于作坊式的手工业，自从 1856 年，第一个化学合成染料苯胺紫诞生，100 多年来，在全世界众多化学染料专家的努力下，化学合成染料发展很快，从开始只能用一个品种的染料去染几种材料到每一种纺织品材料都有对应的专用化学合成染料，品种越来越多，牢度和环保指标也不断提高。现代化工染料进行扎染染色基本以活性染料、直接染料、酸性染料为主，直接染料染色更为普遍。

In ancient China, both the extraction and dyeing of dyes belonged to the workshop-style handicraft industry. Since 1856, the first chemical synthetic dyes aniline purple was born. Over the past 100 years, with the efforts of many chemical dyestuff experts around the world, chemical synthetic dyes have developed rapidly. From the beginning, only one variety of dyes can be used to dye several materials to each textile material, there are corresponding special chemical synthetic dyes. There

are more and more varieties, and the fastness and environmental protection indicators are also continuously improving. Tie-dyeing with modern chemical dye is mainly based on reactive dye, direct dye and acid dye, and direct dye is more common.

(1) 活性染料

(1) Reactive dye

活性染料也叫反应性染料。其分子中含有化学性活泼的基团，能在水溶液中与棉、毛等纤维反应形成共价键的染料，具有较高的耐洗牢度。

Reactive dyes are also called reactive dyes. Its molecules contain chemically active groups, which can react with fibers such as cotton and wool in aqueous solution to form covalent bonds, and have high washability.

活性染料又称反应性染料，是在化学结构上带有反应性基团的水溶性染料。染色时活性染料与纤维发生共价结合而牢固地附着在纤维上，染色的成品牢度指标比较高，特别是耐洗牢度比直接染料要高。早期的活性染料主要为了改变直接染料牢度不高，硫化染料的色谱不全并且缺少浅色而发明出来的。现在，活性染料的用途越来越广了，因为活性染料的颜色十分漂亮，色谱很全，工艺难度也不大，又比较符合环保要求，最主要的是，活性染料不光可以染棉纺织品，还可以染动物纤维、纤维素纤维等。

Reactive dye, also known as reactive dye, is a water-soluble dye with reactive groups in chemical structure. During dyeing, reactive dyes are covalently combined with fibers and firmly attached to fibers, and the finished products have higher fastness index, especially higher washability than direct dyes. Early reactive dyes were mainly invented to improve the direct dye fastness, the chromatography of sulfide dyes was incomplete and lack of light color. Nowadays, reactive dyes are more and more widely used, because they are beautiful in color, complete in chromatography, easy in process, and meet the requirements of environmental protection. Most importantly, reactive dyes can not only dye cotton textiles, but also animal fibers and cellulose fibers.

活性染料的类型比较多，既有适合常温染色的 X 型活性染料，也有适合不同温度、不同工艺和不同材料染色的 K 型、KN 型、M 型活性染料，还有适用于印花

的 P 型活性染料。

There are many types of reactive dyes, including X-type reactive dyes suitable for normal temperature dyeing, K-type, KN-type and M-type reactive dyes suitable for different temperatures, different processes and different materials dyeing, and P-type reactive dyes suitable for printing.

活性染料也有其不足之处。尽管活性染料是针对棉制品的染色而开发的,但是活性染料对棉制品的亲合力并不高,染色时需要使用比较多的助剂。另外,活性染料在水解后就会失去反应能力,很容易从织物上剥落下来。活性染料的保质期不像其他染料那么久,一旦受潮凝结成块便失去了染色作用。另外,因为活性染料的染料分子很容易水解,染色时会产生大量的废水,染深色的难度也随之增大。

Reactive dyes also have shortcomings. Although reactive dyes are developed for dyeing cotton products, reactive dyes do not have a high affinity for cotton products, and more additives are needed for dyeing. In addition, reactive dyes lose their ability to react when hydrolyzed and can easily peel off the fabric. Reactive dyes do not have as long a shelf life as other dyes and lose their dyeing effect once they are dampened and solidified into lumps. In addition, because the dye molecules of reactive dye are easily hydrolyzed, a large amount of wastewater will be generated during dyeing, and the difficulty of dyeing dark color will increase accordingly.

不同的活性染料有不同的上色温度、上色时间和上色牢度,也有不同的用途,购买时应了解清楚,并且自己进行实验对比,以确定所购活性染料是否符合产品染色的要求。活性染料是一种新型染料,一直处于发展阶段,它的用途越来越广,许多新的品种也不断出现,如现代数码印花工艺中运用的染料墨水,已经成为当今不可替代的染色耗材。

Different reactive dyes have different coloring temperature, coloring time and color fastness, and also have different uses. You should know clearly when purchasing and make your own experimental comparison to determine whether the purchased reactive dyes meet the requirements of product coloring. Reactive dye is a new type of dye, which has been in the stage of development. It is used more and more widely, and many new varieties are constantly emerging. For example, the dye ink used in

modern digital printing technology has become an irreplaceable dyeing consumable today.

(2) 直接染料

(2) Direct dye

直接染料，指能直接溶解于水，对纤维素纤维有较高的直接性，无须使用有关化学方法使纤维及其他材料着色的染料。直接染料能在弱酸性或中性溶液中对蛋白纤维（如羊毛、蚕丝）上色，还应用于棉、麻、人造丝、人造棉染色。其色谱齐全、价格低廉、操作方便，缺点是水洗、日晒牢度不够理想。

Direct dye refers to the dye that can be directly dissolved in water and has high directness to cellulose fibers, without the need to use relevant chemical methods to color fibers and other materials. Direct dyes can color protein fibers (such as wool and silk) in weakly acidic or neutral solutions, and can also be used for dyeing cotton, hemp, rayon and rayon. Its chromatography is complete, cheap and easy to operate, but its disadvantage is that the fastness to washing and sunlight is not ideal.

直接染料对纤维素纤维的直接性较其他染料高。这主要是由于直接染料的分子较大，分子结构呈线形，对称性较好，共轭体系长，同平面性好，染料和纤维分子间的范德华力大。同时，直接染料分子中含有氨基、羟基、偶氮基等基团，能与纤维素纤维中的羟基及蛋白质纤维中的羟基、氨基等形成氢键，使染料的直接性进一步提高。

Direct dyes have higher directness to cellulose fibers than other dyes. This is mainly due to the large molecules of direct dye, linear molecular structure, good symmetry, long conjugate system, good homoplanarity, and high van der Waals force between dye and fiber molecules. At the same time, the direct dye molecules contain amino, hydroxyl, azo and other groups, which can form hydrogen bonds with hydroxyl groups in cellulose fibers and hydroxyl groups and amino groups in protein fibers, further improving the directness of dye.

直接染料上染纤维素纤维时，盐起促染作用。其促染机理是，直接染料在溶液中离解成色素阴离子上染纤维素纤维，纤维素纤维在水中也带负电荷，染料和

纤维之间存在电荷斥力，在染液中加入盐，可降低电荷斥力，提高上染速率和上染百分率。不同的直接染料，盐的促染效果是不同的。分子中含磺酸基较多的直接染料，盐的促染作用显著，促染时盐应分批加入，以保证染料上染均匀。上染百分率低的直接染料需要多加盐，具体用量可根据染料品种和染色深度而定。匀染性要求高的浅色产品应适当减少盐的用量，以免造成局部上染不匀，出现色花等染疵。

Salt promotes dyeing when cellulose fibers are dyed on direct dye. The mechanism of promoting dyeing is that the cellulose fibers are dyed by dissociating the direct dyes into pigment anions in the solution, and the cellulose fibers are also negatively charged in water. There is a charge repulsion between the dyes and the fibers. Adding salt to the dye solution can reduce the charge repulsion and improve the dyeing rate and percentage. Different direct dyes have different effect of promoting dyeing by salt. Direct dye containing more sulfonic acid groups in the molecule has a significant dyeing promotion effect of salt. During dyeing promotion, salt should be added in batches to ensure uniform dyeing. The direct dye with low dyeing percentage needs to add more salt, and the specific amount can be determined according to the variety of dye and dyeing depth. For light-colored products with high requirements for uniform dyeing, the amount of salt shall be appropriately reduced to avoid uneven local dyeing and color flower and other dyeing defects.

(3) 酸性染料

(3) Acid dye

酸性染料是结构上带有酸性基团的一类水溶性染料，在酸性介质中进行染色。酸性染料大多数含有磺酸钠盐，能溶于水，色泽鲜鲜艳、色谱齐全。主要用于羊毛、蚕丝和锦纶等布料，也可用于皮革、纸张等。对纤维素纤维一般无着色力。酸性染料的染色工艺流程：用清水调和染料后投入已加醋酸的染锅中搅拌均匀，将清水浸泡过的被染物投入染液，20 min 内迅速升温到 80~90℃，并轻轻搅拌被染物。染色一小时后染色完毕，用清水淋洗被染物，拆结整理。

Acidic dye is a kind of water-soluble dye with acidic group in structure, which is stained in acidic medium. Acidic dyes contain sodium sulfonate, soluble in water, bright color and complete chromatography. It is mainly used for wool, silk, nylon and

other fabrics, and can also be used for leather, paper, etc. It generally has no staining power on cellulose fibers. Dyeing process flow of acidic dye: Mix the dye with clear water, put it into a dyeing pot with acetic acid added and stir it evenly, put the dye soaked in clear water into the dyeing solution, quickly raise the temperature to 80 ~ 90°C within 20 min, and gently stir the dye. After dyeing for one hour, rinse the dye with clean water, and disassemble the knot.

3、植物染料与化学染料的比较

3. Comparison between plant dyes and chemical dyes

现代化学染料的目的和开发方式与植物染料有所不同。现代化学染料的发展过程受到现代化生产方式的影响，导致染料中含有的添加剂比较多。染料在织物染色过程中，上色的速度更快，上染率更高，渗透能力也更强，适合织物的批量化、规模化的染色和印花。

Modern chemical dyes are developed for different purposes and in different ways from plant dyes. The development process of modern chemical dye is influenced by the modern production mode, resulting in more additives in the dye. Dyes have faster coloring speed, higher dyeing rate and stronger penetration ability in fabric dyeing process, which is suitable for batch and scale dyeing and printing of fabrics.

化学染料在现代工业化织物染色印花生产过程中具备很多优势。在用于扎染工艺的染色时，与植物染料相比，有其自身的劣势。例如，化学类染料极强的渗透能力常常给扎染织物的染色带来尴尬，容易造成染色过染，使纹样失去应有的清晰。这就需要在织物染色前的扎结处理时，以更强的扎结牢度来适应。同时，在常规染料用量的基础上，增加 1.2~1.4 倍染料用量，并相对缩短染色时间。

Chemical dyes have many advantages in modern industrial fabric dyeing and printing production. When used for dyeing in the tie-dye process, it has its own disadvantages compared to plant dye. For example, chemical dyes with strong penetration often embarrass the dyeing of tie-dyed fabrics, which is easy to cause overdyeing and make the pattern lose its due clarity. This requires a stronger knotting fastness to adapt to the knotting treatment before dyeing the fabric. At the same time, on the basis of the conventional dye amount, the dye amount is increased by 1.2 to 1.4

times, and the dyeing time is relatively shortened.

化学染料的类别非常丰富，适用于扎染染色的染料也非常多。了解不同的染料类别与特性、染料与织物的对应关系，了解不同染料的染色操作过程，对扎染织物染色的最终效果起着决定性的作用，是扎染实践过程中的一个非常关键的部分。

There are a wide variety of chemical dyes, and there are many dyes suitable for tie-dyeing. It is a key part of the tie-dye practice to understand the types and characteristics of different dyes, the corresponding relationship between dyes and fabrics, and the dyeing process of different dyes, which plays a decisive role in the final effect of tie-dye fabric dyeing.

（二）扎染染料的各项牢度与性能指标

(II) Fastness and Performance Indexes of Tie-dyes

我们还需要认识一下染料的各项牢度与性能指标，这是每一种染料必须具有的数据标准。

We need to understand the fastness and performance indicators of each dyestuff, which is the data standard that each dyestuff must have.

1. 溶解度

1. Solubility

溶解度是指在一定的温度和压力下，某种固态染料在 100g 溶剂中达到饱和状态时所溶解的染料的克数。每种染料在液体中的溶解度是不同的，每种染料只有一个定量溶解范围，没有统一的标准。

Solubility refers to the number of grams of dyes dissolved when a solid dye reaches saturation in 100 g of solvent at a certain temperature and pressure. The solubility of each dye in the liquid is different, and each dye has only one quantitative solubility range, and there is no uniform standard.

2. 移染性

2. Transferability

染色过程中，纤维上的染料会从浓度高的位置通过染液向浓度低的位置转

移。对这种转移倾向的评价称为移染性。移染性分为 5 级，5 级为最好，1 级为最差。

During dyeing, the dye on the fiber is transferred from the position with high concentration to the position with low concentration through the dye. The evaluation of this tendency to transfer is called transferability. The transferability is divided into 5 grades, grade 5 is the best and grade 1 is the worst.

3. 匀染性

3. Uniform dyeability

匀染性是指染料在染纺织品面料时上色的均匀效果。匀染性分为 5 级，5 级为最好，1 级为最差。

Even dyeability refers to the uniform effect of dyes on textile fabrics. The homodyeing property is divided into 5 grades, 5 grades are the best and 1 grade is the worst.

4. 拔白性

4. Whitening

拔白性即还原性，分为 5 档，分别为“很好”“好”“可”“差”“不可”。这个指标关系到纺织品的还原性能和修正条件。

Whitening refers to reduction, which is divided into 5 levels, namely "good", "good", "may", "poor" and "not". This index is related to the reduction performance and correction conditions of textiles.

5. 金属影响

5. Metal influence

金属影响属于前期的影响，主要是铜、铁和其他重金属在染色过程中产生的变化和影响。金属影响共分为 5 级，5 级表示影响最大，1 级表示影响最小。

Metal effects are precursor effects, primarily changes and effects of copper, iron and other heavy metals during dyeing. Metal impact is divided into 5 levels, level 5 indicates the greatest impact and level 1 indicates the least impact.

6. 日晒牢度

6. Sun fastness

日晒牢度也称耐光牢度，分为 8 级，8 级表示最高牢度，1 级表示最差牢度。从理论标准上来说，1 级意味着在太阳下面暴晒 3 个小时就开始褪色，8 级意味着在太阳下面暴晒 384 个小时才出现褪色，每提高 1 级，日晒牢度增加 1 倍。但是影响日晒牢度的因素是多方面的，如染料分子本身结构中发色基团对光的稳定性影响、纤维性质、外界暴晒条件和周围环境等。

Sun fastness, also known as light fastness, is divided into 8 grades, grade 8 indicating the highest fastness and grade 1 indicating the worst fastness. In theory, Grade 1 means that the color begins to fade after being exposed to the sun for 3 hours, Grade 8 means that the color does not fade until being exposed to the sun for 384 hours, and the fastness to sunlight doubles for each increase of Grade 1. But there are many factors that affect the solar fastness, such as the influence of chromogenic groups in the structure of dye molecules on the stability of light, fiber properties, external exposure conditions and surrounding environment.

7. 耐洗牢度

7. Washing fastness

耐洗牢度又称皂洗牢度，指染色制品的色泽经皂液或洗涤剂洗涤后的变色程度。耐洗牢度取决于染料本身的亲水性、染料与纤维之间的结合形式和稳定性，另外，洗涤的介质与条件也与之密切相关。洗涤时温度越高、时间越长、作用力越大，褪色、沾色越严重。耐洗牢度共分 5 级，5 级为最高，1 级为最低。

Washing fastness, also known as soaping fastness, refers to the degree of color change of dyeing products after washing with soap solution or detergent. The washing fastness depends on the hydrophilicity of the dyes themselves, the bonding form and stability between the dyes and the fibers, and the medium and conditions of washing are also closely related to it. During washing, the higher the temperature, the longer the time and the greater the force, the more serious the fading and staining. Washing fastness is divided into 5 grades, of which grade 5 is the highest and grade 1 is the lowest.

8. 汗渍牢度

8. Perspiration fastness

汗渍牢度指染色制品在汗渍作用下的变色程度，分别有碱性汗渍和酸性汗渍两种情况。汗渍牢度分为 5 级，5 级为最好，1 级为最差。

Perspiration fastness refers to the degree of discoloration of dyeing products under the action of perspiration, which includes alkaline perspiration and acid perspiration respectively. Perspiration fastness is divided into 5 grades, Grade 5 being the best and Grade 1 being the worst.

9. 摩擦牢度

9. Rubbing fastness

摩擦牢度指染色织物经过摩擦后的褪色或沾色程度，又分为干摩擦牢度和湿摩擦牢度。摩擦牢度分为 5 级，5 级表示最好，1 级表示最差。

Rubbing fastness refers to the degree of discoloration or staining of dyed fabrics after rubbing, which is divided into dry rubbing fastness and wet rubbing fastness.

The rubbing fastness is divided into 5 grades, 5 for the best and 1 for the worst.

10. 熨烫牢度

10. Ironing fastness

熨烫牢度主要指染色成品在熨烫时出现的变色或褪色程度。熨烫牢度也分为 5 级，5 级最稳定，1 级最不稳定。

Ironing fastness mainly refers to the degree of discoloration or fading of dyeing finished products during ironing. Ironing fastness is also divided into 5 grades, of which grade 5 is the most stable and grade 1 is the least stable.

11. 耐酸、耐碱牢度

11. Acid and alkali resistance

耐酸、耐碱牢度是一项比较重要的牢度指标。因为天然纤维对酸、碱的反应各有不同，如棉纤维比较怕酸而不怕碱，蛋白质纤维怕碱而不怕酸，但是这里指的酸、碱不是强酸、强碱。纤维本身耐酸、耐碱的倾向性在选择染料的时候可以作为参考。染料耐酸、耐碱的牢度指标里会分别给出耐酸的级别和耐碱的级别，有的染料还会给出耐醋酸多少级，耐硫酸多少级。耐酸、耐碱牢度分为 5 级，最好的是 5 级，最差的是 1 级。

Acid and alkali resistance is an important fastness index. Natural fibers have different reactions to acids and alkalis. For example, cotton fibers are more afraid of

acids rather than alkalis, while protein fibers are afraid of alkalis rather than acids, but the acids and alkalis referred to here are not strong acids and alkalis. The tendency of fibers to resist acid and alkali can be used as a reference when selecting dyes. The acid-resistant and alkali-resistant grades of dye are given in the acid-resistant and alkali-resistant fastness indexes respectively, and the grades of acetic acid resistance and sulfuric acid resistance are given for some dye. Acid and alkali resistance is divided into 5 grades, the best is grade 5 and the worst is grade 1.

12. 耐氯漂牢度

12. Chlorine bleaching resistance

耐氯漂牢度是一个染后的牢度指标。现在大多数家庭用水是经过氯处理过的，所以耐氯漂牢度就出现在染料的技术指标中。耐氯漂牢度的指标也分为 5 级，5 级最稳定，1 级最不稳定。

Chlorine bleaching resistance is an indicator of fastness after dyeing. Most domestic water is now treated with chlorine, so chlorine bleaching resistance appears in the technical indicators of dyes. The index of chlorine bleaching resistance is also divided into five grades, grade 5 being the most stable and grade 1 being the least stable.

13. 烟褪色牢度

13. Color fastness to smoke

烟褪色牢度又称烟熏牢度，即染色织物经受煤气、油燃烧后的气体及其他烟气中所含有的氧化氮、二氧化硫等的侵蚀而发生的褪色变化程度。以前有些衣服叠好放在通风的地方，在折痕处会出现一种叫“风印”的变色现象，即烟褪色。烟褪色牢度也分为 5 级，5 级表示牢度最高，1 级表示牢度最低。

Smoke fading fastness, also known as smoke fastness, is the degree of fading change of dyed fabrics due to the erosion of nitrogen oxides and sulfur dioxides contained in gas, oil and other smoke after combustion. In the past, some clothes were folded and placed in a ventilated place, and a discoloration phenomenon called "windmark" will appear at the crease, that is, smoke fades. The fading fastness to smoking is also divided into 5 grades, 5 for the highest fastness and 1 for the lowest.

还有一些染料有它特殊的重要牢度指标,这些指标对该种染料的使用有十分重要的作用,如活性染料中的反应性、亲和力、提升力性能指标。再如分散染料中有一个特指在干热条件下出现的升华指标,对现代环保热转移印花来说,就显得较为重要,因为染料的升华温度决定了热转印的温度。

There are some dyes with its special important fastness indicators, which play a very important role in the use of this kind of dyes, such as reactivity, affinity and lift performance indicators in reactive dyes. Another example is that there is a sublimation index in the dispersed dyes under dry heat conditions, which is more important for modern environmental heat transfer printing, because the sublimation temperature of dyes determines the temperature of heat transfer printing.

上面所讲到的这些牢度与性能指标对使用者而言十分重要,关系到能不能制作出好的作品。

The above-mentioned fastness and performance indicators are very important to users, which are related to whether they can produce good works.

在合成染料的使用中,不同色相的互配是一门需要认真研究的学问,因为每一种染料都有它自身颜色的色彩倾向,具有不同色彩倾向的染料互配会出现不同的色彩反应。需要注意的是,有对比倾向的染料在互配时会出现脏色现象。世界上还没有哪一种染料的各项牢度与性能指标都能达到最优,在实际生产和使用中也不需要所有指标都是最优,颜色的把握和色彩的互配才是创作与生产的关键。

In the use of synthetic dyes, the matching of different hues is a subject that needs to be studied carefully, because each dye has its own color tendency, and dyes with different color tendencies will have different color reactions. It should be noted that dyes with a tendency to contrast will be dirty when they are matched. There is no dyestuff in the world that can achieve the best fastness and performance indicators, and all indicators are not required to be optimal in actual production and use. The grasp of color and the matching of colors are the key to creation and production.

拓展练习

Extension exercise

- 1、搜集整理常用的植物染料，化学染料的类型
- 2、Collect and sort out the types of common plant dyes and chemical dyes
- 3、比较两者的优劣势
- 4、Compare the advantages and disadvantages of the two
- 5、熟悉扎染染料的性能指标
- 6、Be familiar with the performance indicators of tie-dyes

任务二 不同染色方法的介绍

Task II Introduction to Different Dyeing Methods

任务目标

Mission Objectives

- 1、了解不同的染色方法
- 2、Understand the different staining methods
- 3、掌握不同染色方法的操作技巧
- 4、Master the operation skills of different dyeing methods
- 5、

任务描述

Task Description

扎染染色的方法关系到最终成品的效果，熟悉各种不同类型的染料，以及可以实施的染色方法，能够更好的进行扎染的作品的设计与创作。

The method of tie-dyeing is related to the effect of the final product. Being familiar with different types of dyes and the dyeing methods that can be implemented can better design and create tie-dyeing works.

任务要求

Mission Requirements

通过本课程的学生能够了解不同的染色方法以及对染料的要求以及选择。

Students of this course will be able to understand the different dyeing methods

and the requirements and choices of dye.

任务实施

Task implementation

一、课前导学

I. Pre-class Guidance Before class.

课前学生通过数字资源库或网络资源，图片资源进行观看学习，了解扎染色的方法以及染料的选择。

Before class, students watch and learn about the methods of tie dyeing and the choice of dye through digital resource library or network resources and picture resources.

二、课堂教学

II. Classroom teaching

(一) 染色的方法

(I) Dyeing method

1、扎染的浸染法介绍

1. Introduction to tie-dyeing method

将扎好的织物放入配制好的染液中浸泡一定时间，染完后用清水冲洗，解结，熨平。常用纳夫托染料和活性染料。

Soak the bound fabric in the prepared dye for a certain period of time, rinse with clean water after dyeing, unknot and iron. Navto and reactive dyes are commonly used.

纳夫托染料及使用方法

Nafto dye and method of application

工艺程序：溶解色酚-->织物打底-->晾水备用-->配显色剂-->放入织物-->显色-->配碱液-->碱洗-->冲洗晾干

Process procedure: dissolving chromophenol --> fabric priming --> airing for later use --> color developing agent preparation --> putting into fabric --> color development --> alkali liquor preparation --> alkali washing --> rinsing and drying

使用方法

Usage

(1)、配制色酚打底层

(1) Preparation of Chromophenol Primer

打底层处方：

Prescription of primer:

色酚 AS	10-15 克
Chromophenol AS	10-15g
太古油	15 毫升
Swire Oil	15 ml
36Be 烧碱	15-18 毫升
36Be caustic soda	15-18 ml
加水合成	1 升
Synthesis by adding water	1 litre

将色酚、太古油混合搅拌成浆状，再倒入烧碱搅拌；加入沸水调整到规定液量，液体呈无混浊的酱油色为宜。

Mix the chromophenol and Swire oil into a paste, and then pour caustic soda for stirring; add boiling water to adjust the liquid volume to the specified volume, and the liquid should be in a soy sauce color without turbidity.

(2)、打底:

(2) Priming:

将布料放入打底液中浸泡 15 分钟，取出晾至避光处不滴水后待用

Soak the cloth in the priming solution for 15 minutes, take it out and dry it in a dark place without dripping water for later use

(3)、显色剂的配制:

(3) Preparation of color developing agent:

取色盐 VB 蓝 10 克，加入 40-50 温水 800 毫升搅匀，待用

Take 10 g of color salt VB blue, add 800 ml of 40-50 warm water and stir well for later use.

(4)、染色:

(4) Dyeing:

将打过底的织物浸入显色剂中翻动使其均匀着色，约 15 分钟后取出

Immerse the bottomed fabric in the developer and turn it over to make it color evenly. Take it out after about 15 minutes.

(5)、碱洗:

(5) Alkaline cleaning:

将染过色的布料浸入碱液中翻动约 2 分钟后用热水冲洗，再用冷水冲洗，晾干完成。碱洗的目的是洗去打底液在织物上留下的黄色，使留白处洁净。

Immerse the dyed cloth in alkali liquor for about 2 minutes, then rinse it with hot water, then rinse it with cold water, and dry it in the air. The purpose of alkaline

cleaning is to wash off the yellow color left by the primer on the fabric and make the blank clean.

碱液处方 Alkali liquor formulation	
36Be 烧碱 36Be caustic soda	10 毫升 10 ml
加水合成 Synthesis by adding water	1 升 1 litre

2、扎染的蒸染法介绍

2. Introduction to the steaming dyeing method of tie-dyeing

将扎好的织物先浸泡于染液中染色，然后放入锅内蒸一定时间固色，常用的有缩聚染料。缩聚染料是一种新型的暂深性染料，既可染棉、麻等纤维织物，又可染羊毛、蚕丝等动物纤维。

First, soak the tied fabric in dyeing solution for dyeing, and then steam it in a pot for a certain period of time to fix the color. Commonly used polycondensation dye. Polycondensation dye is a new type of temporary deep dye, which can not only dye cotton, linen and other fiber fabrics, but also dye animal fibers such as wool and silk.

缩聚染料及使用方法

Polycondensation dye and application method

(1)、工艺程序：温水溶解染料—>放入织物染色—>用吹风机吹干—>蒸 6-7 分钟—>水洗、皂洗、水洗—>晾水熨干；

(1) Technological procedure: dissolve the dye with warm water --> put it into the fabric for dyeing --> dry it with a hair dryer --> steam it for 6-7 minutes --> wash it with water, soap and water --> iron it with water in the air;

(2)、使用方法：

(2) Application method:

备染料、助剂（尿素）、固色剂（硫脲）、小苏打；

Prepare dye, auxiliary (urea), color fixing agent (thiourea) and baking soda;

用温水化开染料搅匀，加入化好的尿素、硫脲等搅匀，加入温水至规定量。浸入织物染色约 30 秒，翻动使之上色均匀；

Mix the dye with warm water, add melted urea, thiourea, etc., and add warm water to the specified amount. Immerse the fabric for about 30 seconds and turn it over to make it evenly colored;

取出，用热吹风机吹干后，蒸 6-7 分钟（或浸入硫化碱固色液中固色）；

Take it out, dry it with a hot blower, and steam it for 6-7 minutes (or immerse it in alkali sulfide color fixing solution to fix the color);

水洗，皂洗，熨平。

Wash, soap, iron.

缩聚染料染色处方 Polycondensation dye formulation	
染料 Dye	10-100 克 10-100g
尿素 Urea	50-100 克 50-100g
硫脲 Thiourea	40-80 克 40-80g
小苏打 Baking soda	10-30 克 10-30g
加水合成 Synthesis by adding water	1 升 1 litre

硫化碱固色处方 Alkali sulfide color fixation formula	
5%硫化钠 5% sodium sulfide	20-100 克 20-100g
食盐 Salt	100-200 克 100-200g
加水合成 Synthesis by adding water	1 升 1 litre

3、煮染法的介绍

3. Introduction to Boiling and Dyeing Method

将扎好的织物放入染锅内煮沸达到高温染色的效果。最常用的是直接染料与酸性染料。直接染料易溶于水，适染棉、麻、人造丝、绢类。酸性染料色彩鲜艳，易于拼色，最适染动物纤维。

Boil the fabric in a dyeing pot to achieve high-temperature dyeing. Direct dyes and acid dyes are most commonly used. Direct dye is easily soluble in water, suitable for dyeing cotton, linen, rayon and silk. Acid dyes are bright in color, easy to match color, and most suitable for dyeing animal fibers.

（三）各种染料的染色工艺

(III) Dyeing Process of Various Dyes

1、活性染料及使用方法

2、Reactive Dyes and Methods of Application

(1) 配色

(2) Color matching

称取染料和活性冷染剂放进量杯或者尖嘴瓶，加入少量的温水或者自来水，一般来说，温水溶解的比較快，50 摄氏度以下为宜，不能直接用开水。充分搅拌均匀，使染料完全溶解，溶解染料的容器以搪瓷制品为宜，水量的多少对染色的浓淡程度有直接影响，但与织物的色牢度无关。然后在将尖嘴瓶加满水备用。染料调制好后有效期为 3 天，时间长就失效了。以 500 毫升水为例，活性染料与活性冷染剂的配比参考如下：

Weigh the dye and reactive cold dye into a measuring cup or a pointed-nose bottle, and add a small amount of warm water or tap water. Generally speaking, warm water dissolves quickly, preferably below 50°C. Do not use boiled water directly. Stir well to completely dissolve the dyestuff. The container for dissolving the dyestuff should be enamel products. The amount of water has a direct impact on the dyeing intensity, but it has nothing to do with the color firmness of the fabric. Then fill the bottle with water for later use. After the dye is prepared, the validity period is 3 days, and it will expire after a long time. Taking 500 ml of water as an example, the ratio of reactive dye to reactive cold dye is as follows:

颜色染料 Color dye	活性染料 Reactive dye	活性冷染剂 Active cold dye	盐 Salt
浅粉色 Light pink	0.01-0.2g	3g	5g
浅色 Light color	0.2-1.0g	5g	10g
中色 Medium color	1.0-3.0g	10g	15g
深色 Dark	3.0-6.0g	15g	20g
黑色 Black	6.0-15g	20g	30g

(3) 染色

(4) Dyeing

活性染料分为常温染色染料和热固型染料。常温型活性染料是指在常温下进行染色的染料，具体操作法：

Reactive dyes are divided into room temperature dyes and thermosetting dyes. Room temperature reactive dye refers to the dye that is dyed at room temperature. The specific operation method is as follows:

第一步、用清水调和染料，溶解后投入染锅中搅拌均匀。

Step 1: Mix the dye with clean water, dissolve and put it into a dyeing pot to stir evenly.

第二步、将清水浸泡过的被染物投入染液。在室温下开始染色。1 分钟后加入食盐助染，染色中应不断搅动被染物。也可以在需要染色的地方用尖嘴瓶进行滴染。

Step 2: Put the dye soaked in clean water into the dye. Start staining at room temperature. After 1 minute, salt is added to assist dyeing, and the dye should be continuously stirred during dyeing. It can also be dipped in a sharp-nosed bottle where staining is required.

第三步、染色完毕，用清水淋洗被染物。

Step 3: After dyeing, rinse the stained material with clean water.

第四步、用塑料袋或者密封袋将浸染好的布料密封起来，放置 24 小时，要尽量放在温度比较高的地方，温度要求不低于 20 摄氏度，24 小时后达到浸染的效果。或者是将染好的布料放入蒸锅中隔水蒸 30 分钟，盖上锅盖，让水升到沸点，染好开火到最小，使水蒸气不能递到布料上，达到浸染的效果。

Step 4: Seal the dyed cloth with a plastic bag or sealing bag, and place it for 24 hours. Place it in a place with high temperature as far as possible. The temperature shall not be lower than 20°C, and the effect of dying shall be achieved after 24 hours. Or put the dyed cloth into a steamer to steam for 30 minutes, cover the lid, let the water rise to the boiling point, dye and fire to the minimum, so that the steam cannot

be passed on to the cloth to achieve the effect of immersion dyeing.

热固型染料是指用加热固色的染料。具体的操作法是：

A thermosetting dye is a dye that is fixed by heating. The specific operation method is as follows:

第一步、清水调和染料，溶解后投入染锅中搅拌均匀，升温到 60℃。

Step 1: Mix the dye with clear water, dissolve it, put it into a dyeing pot, stir it evenly, and heat it to 60°C.

第二步、将清水浸泡过的被染物稍加脱水后投入染液。15 分钟后加入食盐助染

The second step is to slightly dehydrate the stained substance soaked in clear water and then put it into the staining solution. Add salt for dyeing after 15 minutes

第三步、继续染色分钟后加入磷酸三钠固色剂，同时将染液升温到 90℃固色 30 分钟。

Step 3: Add trisodium phosphate color fixing agent after continuing staining for 30 minutes, and heat the staining solution to 90°C for color fixing for 30 minutes.

第四步、染色完毕，用清水淋洗被染物。将被染物投入 2g / L 的洗衣粉溶液中煮 10min 后水洗整理。

Step 4: After dyeing, rinse the dye with clean water. Put the dye into 2g/L washing powder solution, boil for 10min, and then wash with water.

2、直接染料及使用方法

2. Direct dye and application method

(1)、工艺程序：溶解染料-->放入织物-->煮染 30 分钟-->冲洗晾干

(1) Technological procedure: dissolving dyes --> putting in fabrics --> boiling and dyeing for 30 minutes --> rinsing and drying

(2)、使用方法：备好染料及助剂纯碱，也可用食盐代替；

(2). Application method: Dyes and auxiliary soda ash shall be prepared, and table salt can also be used instead;

以布料的重量决定染料和助剂的使用量，即染料为布重 3%，助染剂为 1.5%

（食盐为 10%），水为布重的 20-30 倍；

The dosage of dyes and additives is determined by the weight of the cloth, i.e. 3% of the cloth weight is dyes, 1.5% of the cloth weight is additives (10% of salt), and 20-30 times of the cloth weight is water;

用少量开水溶解染料和助染剂，再加至需要量，溶解染料的容器以搪瓷制品为宜，并加热；水量的多少对染色的浓淡程度有直接影响，但与织物的色牢固度无关。

A small amount of boiled water is used to dissolve the dyes and dye aids, and then added to the required amount. The container for dissolving the dyes should be enamel products and heated. The amount of water has a direct impact on the dyeing intensity, but it has nothing to do with the color firmness of the fabric.

将织物浸入染液中，用竹棍搅动，使其着色均匀，连续沸煮约 30 分钟后，冲洗并解结，最后烫平晾干。

Immerse the fabric in the dyeing solution, stir it with a bamboo stick to make it evenly colored, boil it continuously for about 30 minutes, rinse and unknot it, and finally iron and dry it.

将扎好的织物采用局部点染的方法进行染色。适合活性染料冷染，可以进行多色套色处理。

Dye the bound fabric by local spot dyeing. Suitable for reactive dyes cold dyeing, can be multi-colored overcoloring treatment.

任务三 单色染工艺

Task 3 Monochrome dyeing process

任务目标

Mission Objectives

1、了解单色染色工艺

1. Understand the monochromatic dyeing process

2、掌握单色染色的工艺流程

2. Master the process flow of monochromatic dyeing

3、掌握单色染色的方法

3. Master the method of monochromatic dyeing

任务描述

Task Description

单色染色指的是只用一种颜色进行染制织物。单色染色的工艺主要特点是扎结后通过一中染色的过程完成作品的制作。常见的扎染织物多为单色，色彩稳重，在云南大理的扎染工艺，采用靛蓝织物染料进行染色，色彩稳重古朴，蓝白相间，清新自然。单色染色主要是需要把控扎结的技法和松紧度，通过扎结的松紧，针法的不一，产生虚实变化的效果，同时一种颜色也可以通过染色的次数不一获得深浅不一的渐变效果。

Monochrome dyeing refers to dyeing fabrics with only one color. The main feature of monochromatic dyeing process is to complete the production of the work through a process of dyeing after binding. Most of the common tie-dyed fabrics are monochromatic, with stable colors. In Dali, Yunnan, the tie-dyeing process adopts indigo fabric dyes, with stable, quaint, blue-white, fresh and natural colors. Monochrome dyeing is mainly to control the technique and tightness of the knot. The effect of virtual and real changes is produced through the tightness of the knot and different stitches. At the same time, a color can also obtain a gradual effect of different depths through different times of dyeing.

任务要求

Mission Requirements

通过本课程的学习学生需要掌握单色染色的工流程，掌握单色染色的具体操作方法，能够熟练选择并使用单色染色法。

Through this course, students need to master the workflow of monochromatic dyeing, master the specific operation methods of monochromatic dyeing, and be able to skillfully select and use monochromatic dyeing.

任务实施

Task implementation

一、课前导学

I. Pre-class Guidance Before class.

通过数字学习资源，网络资源以及各种实地调研了解单色染色的一般操作流程以及方法。

Understand the general operation process and methods of monochromatic staining through digital learning resources, network resources and various field

investigations.

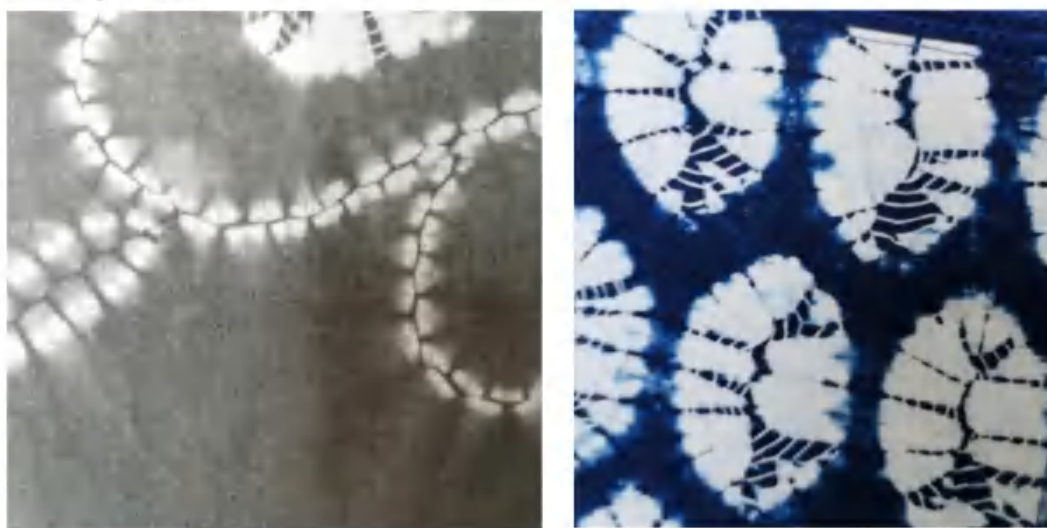


图 4.3.1 单色染

Fig. 4.3.1 Monochrome Dyeing

上图均为单色染工艺，采用了不同的植物染料染色。左图主要为线的表现形式，右图主要为面的表现形式。这种单色染色的工艺比较朴素大方。

The above figures are all monochrome dyeing processes, which use different plant dyes. The left figure is mainly the representation of lines, and the right figure is mainly the representation of surfaces. This monochromatic dyeing process is simple and generous.

二、课堂教学

II. Classroom teaching

(一) 单色染色工艺

(I) Monochrome dyeing process

单色染色法染色法中最简单的一种，一道染色工序就可以完成，可以各种染色方法以及多种染料。应该注意的是上色时间，以及染色均匀程度。

Monochrome dyeing is the simplest method of dyeing. A single dyeing process can be completed, and various dyeing methods and dyes can be used. Attention should be paid to the coloring time and the degree of staining uniformity.

主要体现在两点：

It is mainly reflected in two aspects:

- 1、扎结的工艺水平
- 2、Process level of knotting
- 3、扎结的松紧

4、Tightness of knot

单色染色比较典型的是蓝靛单色染工艺。蓝靛的制作方法主要有以下几个步骤

The typical monochromatic dyeing process is indigo monochromatic dyeing. The main steps of making indigo are as follows:

第一步：板蓝根的采摘，采取织物的叶茎，不取根部，据说 50 千克的板蓝根叶茎能够加工 12 千克左右的靛蓝泥。

Step 1: For the picking of isatis roots, the fabric leaf stems are used instead of the roots. It is said that 50 kg of isatis root leaf stems can process about 12 kg of indigo mud.

第二步：浸泡。把板蓝根放入缸中浸泡，一般要浸泡一个星期左右，温度 25 摄氏度左右为宜。

Step 2: Soak. Soak the isatis root in the jar for about a week at a temperature of about 25°C.

第三步：除渣。为了使染料干净，在大木缸中要把水中的板蓝根渣子除掉。

Step 3: slag removal. In order to make the dye clean, in the large wooden tank to remove the indigowoad root slag in the water.

第四步：配制石灰水。具体的做法是，把石灰水倒进染水中，进行搅拌，搅拌大约十几分钟，搅拌完毕看成色如何。石灰的比例很重要，基本凭借经验调配。可以从水的颜色进行辨别：如果冉水呈现鸡蛋黄的颜色，说明还差火候，还要继续调试，染水是灰色，说明染水要死了。

Step 4: Prepare lime water. The specific method is to pour the lime water into the dyeing water, stir it for about ten minutes, and see how the color is after stirring. The proportion of lime is very important, which is basically based on experience. It can be distinguished from the color of water: if the color of egg yolk appears in the water, it indicates that the temperature is still poor, and it needs to continue to be adjusted. If the water is gray, it indicates that the water is going to die.

第五步：打水。打水的要求是在水的表面打出一层泡沫，如果三次打不出就增加打击的次数，是染水成熟。

Step 5: Fetch water. The requirement for watering is to make a layer of foam on the surface of the water. If it cannot be made three times, the number of blows will be increased, and the water is mature.

第六步：沉淀。打好的染水，要静置一段时间，使染料沉淀到缸底，当缸中的染水分出清水与沉料的时候，倒掉清水，留下的就是蓝靛染料了。

Step 6: sedimentation. After the dyeing water, let it stand for a period of time, so

that the dye precipitates to the bottom of the tank. When the dyeing water in the tank comes out of clear water and sediment, pour out the clear water, leaving behind is indigo dye.

（二）单色染色工艺效果

（II）Effect of monochromatic dyeing process

1、整体染色

1、Overall staining

指的是将整体染成一种颜色，在颜色上色彩比较单一，主要突出体现扎染的扎结工艺与纹样效果。

It refers to dyeing the whole into a color, which is relatively single in color, mainly highlighting the tie-dyeing process and pattern effect.

案例分析一（图 4.3.2）

Case Study I (Figure 4.3.2)

（1）构图形式

（2）Composition

斜向分割画面，用点与面的结合形成线形的图示。首先设计好图形的位置，然后画出形状的大小，做到对比强烈。

The image is divided obliquely, and the combination of points and planes forms a linear diagram. First, design the position of the graphic, and then draw the size of the shape to achieve strong contrast.

（3）扎结方法

（4）Ligation method

主要用捆扎法或者卷扎法，尽力扎紧图形轮廓。也可以用线缝扎图形轮廓再进行捆扎，又是一种纹样形式，留白的部分尽力扯紧。

The binding method or rolling method is mainly used to tighten the graphic outline as much as possible. You can also use thread to stitch the outline of the pattern and then bind it. It is also a pattern form, and the blank part should be tightened as much as possible.

（5）染色效果

（6）Dyeing effect

染红色，也可以选择其他颜色。选择浸泡染色，然后晾干脱结。整体效果形状大小在视觉上对不强烈，具备很好的装饰效果。

Dye red, or other colors. Select immersion staining and then dry the knots. The shape

and size of the overall effect are not strong visually and have a good decorative effect.



图 4.3.2

Figure 4.3.2

案例分析二(图 4.3.3)

Case Study II (Figure 4.3.3)

(1) 构图形式

(1) Composition form

将画面进行 2:1 的比例分割，在面积上形成对比关系，可用水消笔做好分割记号。然后进行错位的长方形绘制。

The screen is divided in a 2:1 ratio to form a contrast relationship on the area, and the division mark can be made with a water hydrant pen. Then draw a dislocated rectangle.

(2) 扎结方法

(2) Binding method

长方形的部分主要采用绕缝扎，抽紧扎牢。剩下的部分用无痕夹子夹住。

Rectangular parts are mainly bound with seams and tightened firmly. The rest is clamped with a traceless clip.

(7) 染色效果

(8) Dyeing effect

用活性染料染蓝色，渗透性好，长方形的部分花纹比较清晰，有明显的绕线线迹花纹，夹子夹住的部分留白比较多，整体花纹效果达到预期的设计。

The reactive dye is used to dye blue, with good permeability. The rectangular part of the pattern is relatively clear, with obvious winding stitches. The part clamped by the clip is mostly left blank, and the overall pattern effect reaches the expected design.

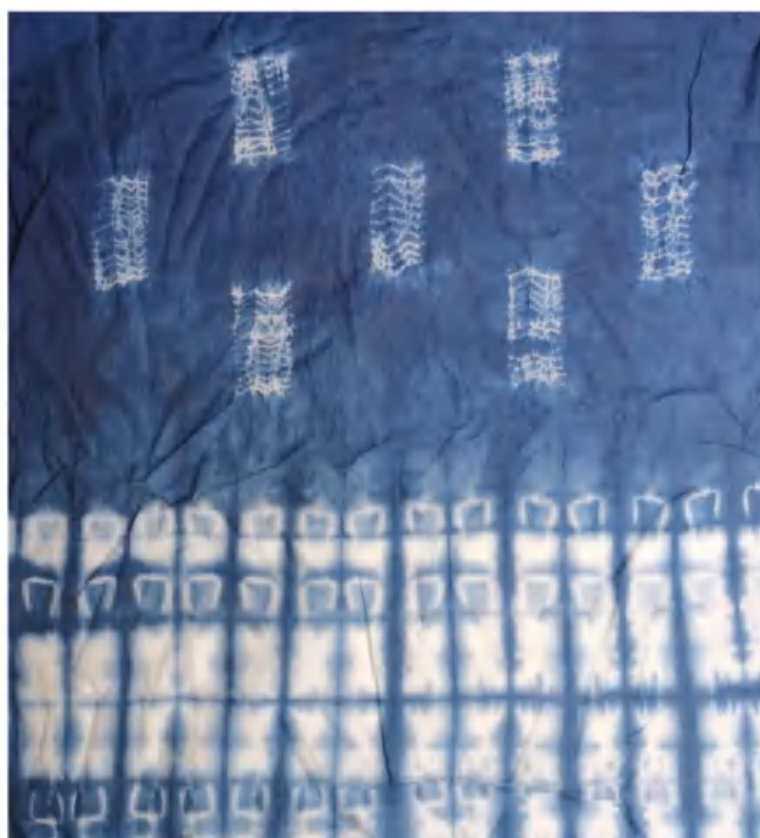


图 4.3.3 单色染

Figure 4.3.3 Monochrome dyeing

2、渐变染色

2. Gradual staining

渐变染色是用同一种颜色，作出不一样的深浅效果，一般来说选择靛蓝植物染料可以进行渐变染色的效果。染色的次数多，颜色越深，反之，次数越少，

颜色越浅。

Gradient dyeing is to use the same color to make different shade effects. Generally speaking, indigo plant dye can be used for gradient dyeing. The more times of dyeing, the darker the color; otherwise, the less times, the lighter the color.

案例分析一(图 4.3.4)

Case Study I (Figure 4.3.4)

(1) 构图形式

(2) Composition

对称式构图，中间正方形留白，用水消笔标出记号。

Symmetrical composition, with the middle square left blank, and marks marked with a eraser.

(3) 扎结方法

(4) Ligation method

可以不用扎结，直接染色，只要保证留白的部分面积与设计的一致。

Direct dyeing without tying is allowed as long as the area left blank is consistent with the design.

(5) 染色

(6) Dyeing

先染两条相对的布边，留出正方形，在继续染另外的两条布边，在交叠的地方因为被复染了一次，颜色加深。

Dye two opposing selvages first, leaving a square, and then continue to dye the other two selvages. At the overlapping place, the color deepens because it is counterdyed once.

(4) 纹样效果

(5) Pattern effect

纹样简约大方容易操作。靛蓝染色的特性能够形成逐渐加深的效果。

The pattern is simple, elegant and easy to operate. The characteristics of indigo staining can form a gradually deepening effect.



图 4. 3. 4 渐变

Figure 4.3.4 Gradual transition

拓展练习

Extension exercise

- 1、用单色染工艺创作一副扎染作品
- 2、Create a tie-dye work using the monochromatic dyeing technique
- 3、采用单色渐变染色进行作品创作设计
- 4、Monochrome gradient dyeing is adopted for the creation and design of works

任务四 多色染工艺

Task IV Polychromatic dyeing process

任务目标

Mission Objectives

- 1、了解多色染的工艺原理
- 2、Understand the process principle of polychromatic dyeing
- 3、掌握多色染色技法
- 4、Master polychromatic dyeing techniques

任务描述

Task Description

多色扎染，是指两种或者两种以上的染色方法。根据设计的预期效果进行组织重复染色，一般来说，多色染色可以选择相同类别的染料和染色工艺，也可以选择不同类别的染料混合使用，前提是了解染料的性质，同时要掌握染制的顺序与方法，通常来说，先染浅色，再逐步套染深色，根据颜色的明度区别由浅至深依次进行。多色扎染需要严格控制扎结与染色的过程，需要掌握色彩搭配的基本知识，才能达到预想设计的效果。

Multi-color tie-dye refers to two or more dyeing methods. Repeated staining of tissues is carried out according to the expected effect of design. Generally speaking, polychromatic staining can be carried out by selecting the same type of dyes and dyeing process, or by selecting different types of dyes for mixed use, provided that the properties of dyes are understood and the sequence and method of dyeing are mastered. Generally, light colors are dyed first, and then dark colors are gradually overdyed. According to the difference of brightness of colors, it is carried out from light to dark. Multi-color tie-dyeing requires strict control of the process of tying and dyeing, and the basic knowledge of color matching is required to achieve the expected design effect.

任务要求

Mission Requirements

学生通过本次课程的学习，能够掌握多色染色套色的工艺原理。

Through the study of this course, students can master the process principle of multi-color dyeing and color matching.

任务实施

Task implementation

一、课前导学

I. Pre-class Guidance

通过数字学习资源,网络资源以及各种实地调研了解单色染色的一般操作流程以及方法。下图扎染纹样的色彩有三种,思考一下染色的方法。

Understand the general operation process and methods of monochromatic staining through digital learning resources, network resources and various field investigations. There are three kinds of colors for tie-dye patterns in the figure below. Think about the dyeing methods.



图 4.4.1 八卦纹样

Figure 4.4.1 Eight Trigrams Pattern

二、课堂教学

II. Classroom teaching

(一) 多色染色的染色原则

(I) Dyeing principle of polychromatic dyeing

多色染色工艺指的是用两种或者两种以上的染料进行染色。需要注意几个原则

The multicolor dyeing process refers to dyeing with two or more dyestuffs. Several principles need to be noted

1、在扎结的过程中就要考虑纹样的效果,第一种颜色染完以后,在进行第二

中颜色染色时,要将第一种颜色扎起来再染。可以根据设计需要进行多次染色。

2、In the process of knotting, the effect of the pattern should be considered. After the first color is dyed, the first color should be tied up and then dyed when the second color is dyed. Multiple staining may be performed as required by the design.

3、一般来说,先染浅色,再套染深色。

4、Generally speaking, light colors are dyed first, followed by dark colors.

5、多色染色时,最好染完一个颜色之后,让布干了再染另外一个颜色,干了的布再进行染色的时候,不会对第一个颜色产生干扰。

6、For multi-color dyeing, it is better to dry the cloth and then dye another color after dyeing one color. When the dried cloth is dyed again, it will not interfere with the first color.

7、每一种染料的分子结构一样,所以上色的程度不一样,有的染料渗透很快,有的要煮很久,甚至要用促染剂上色,所以对染料性能的把握十分关键。

8、The molecular structure of each dyestuff is the same, so the degree of coloring is different. Some dyestuffs penetrate quickly, some boil for a long time, and even color with dye promoter, so it is very critical to grasp the performance of dyestuffs.

(二) 多色染色工艺的配色

(II) Color matching of multicolor dyeing process

染料配色和绘画调色配色有相同之处,黄色和蓝色相调就是绿色,大红和铜蓝相调就是紫色。这种调色是和我们对于染料的熟悉程度密切相关的,染料不像绘画用的颜料,颜料的色相在使用之前就一目了然,而染料只有通过下水以后才能看出是什么颜色,所以对染料色相的把握,是需要对染料进行长时间的跟踪和了解的。

Dye and painting colors are similar, yellow and blue tone is green, red and covellite tone is purple. This kind of coloring is closely related to our familiarity with dyes. Dyes are not like pigments for painting. The hue of pigments is clear at a glance before use, and the color of dyes can only be seen after entering the water. Therefore, it is necessary to track and understand the hue of dyes for a long time.

多色染的配色一般主要分以下几种

Polychromatic dyeing is generally divided into the following types

1、原色搭配

1.Primary color matching

原色指的是红黄蓝的搭配，对比强烈，视觉上易于让人接受，容易让人产生视觉上的美感。

The original color refers to the combination of red, yellow and blue, with strong contrast, which is easy to be accepted visually and easy to produce visual aesthetics.

2、邻近色搭配

2.Adjacent color matching

再色相环上，邻近色是位置距离比较近的颜色，搭配起来比较柔和。配合不同的构图，装饰元素的表达能够呈现不同的效果。

On the hue ring, the adjacent colors are the colors close to each other, which are softer to match. With different compositions, the expression of decorative elements can present different effects.

3、互补色搭配

3.Complementary color matching

互补色搭配的视觉效果十分醒目。根据染料的固有颜色，可以选择不同的互补色搭配方案。

The visual effect of complementary colors is very eye-catching. According to the inherent color of the dye, different complementary color matching schemes can be selected.

4、复色搭配

4.Multi-color matching

在扎染工艺上，复色也指的是两种颜色叠加染色，一般来说先染浅色，再套深色，既可以获得叠加后的复色效果。

In the tie-dye process, compound color also refers to the superimposed dyeing of two colors. Generally speaking, light colors are dyed first, and then dark colors are used to obtain the superimposed compound color effect.

（三）案例分析

(III) Case Analysis

1、案例分析一（图 4.2.2）

1. Case Analysis I

（1）配色设计

(1)Color design

采用黄绿的邻近色配色设计

Designed with yellow-green adjacent colors

(2) 扎结工艺

(2) Binding process

首先叠一块方形的面料，采用风琴褶进行折叠，尽量均匀整齐，形成长条形状，然后将叠好的布料进行卷扎，从长条的一头开始卷，形成一个圆柱形的状态，然后用线扎紧。

First, stack a square piece of fabric, fold it with an organ pleat to form a long strip shape as evenly and neatly as possible, then roll the folded fabric from one end of the long strip to form a cylindrical state, and then tie it tightly with threads.

(3) 染色

(3) Dyeing

先将圆柱形进行黄色染料的浸泡，尽量浸泡使其染色均匀。待干后，小面积浸染绿色染料，注意面积不要超过黄色染料的部分。也可以再面料还没有完全干的情况下浸染绿色，会出现晕染的效果。

First, soak the cylinder in yellow dye to make it stain evenly. After drying, a small area of green dye is impregnated, taking care not to exceed the area of the yellow dye. It is also possible to stain the fabric with green before it is completely dry, which will produce a halo effect.

(4) 纹样效果

(4) Pattern effect

由于叠后再卷，使防染的面积较大，在折叠的边缘呈现现状的颜色，加上采用的两种颜色套染，在染料相互渗透下形成不规则的色晕，花纹效果新颖别致。Due to the folding and re-rolling, the anti-dyeing area is large, and the current color appears at the folded edge. In addition, the two colors used are overdyed, forming irregular halos under the mutual penetration of dyes, and the pattern effect is novel and unique.

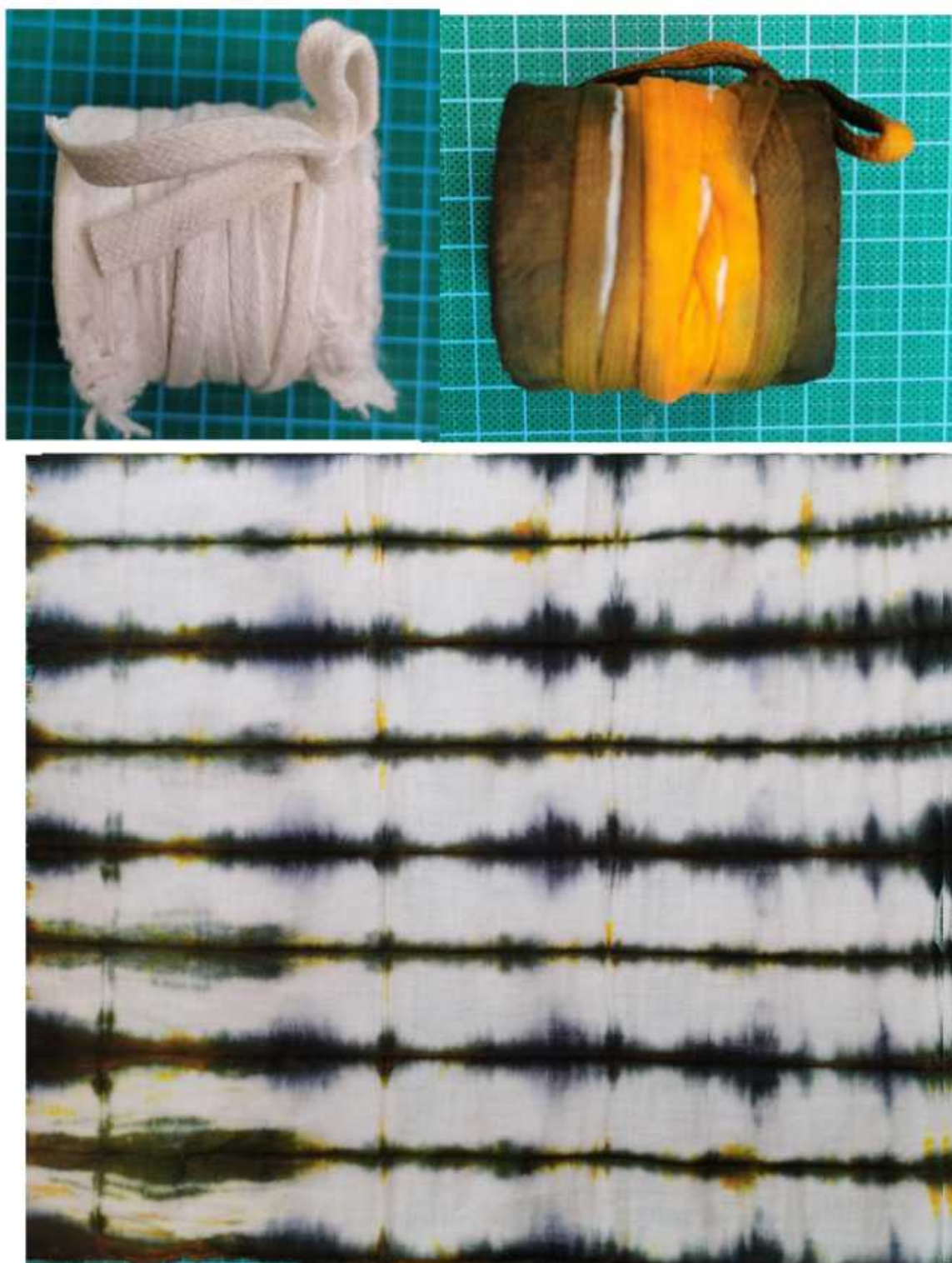


图 4. 4. 2 邻近色配色
Figure 4.4.2 Adjacent color matching

2、 案例分析二(图 4. 4. 4-4. 4. 7)

2. Case Analysis II

(1) 配色设计

(1)Color design

采用橙色，蓝色，墨绿色的搭配方案。

Orange, blue and dark green are adopted.

(2) 扎结方式

(2)Tying method

首先将一块正方形的面料叠折成小正方形，在对折成三角形，在正方形的中心，也就是三角形的一个角上扎结，同时在另一个角上也进行扎结。

First, fold a square fabric into a small square, fold it into a triangle, tie it at the center of the square, that is, at one corner of the triangle, and tie it at the other corner.

(3) 染色

(3) Dyeing

在扎结的部分分别染黄色和蓝色，最后大面积的部分染墨绿色。

Yellow and blue are respectively dyed at the tied part, and dark green is dyed at the last large part.

(3) 纹样效果

(4)Pattern effect

橙色与蓝色为互补色，对比强烈色彩醒目。

Orange and blue are complementary colors, with eye-catching contrasting colors.



图 4. 4. 4

Figure 4.4.4



图 4. 4. 5

Figure 4.4.5



图 4. 4. 6

Figure 4.4.6



图 4.4.7

Figure 4.4.7

拓展练习

Extension exercise

- 1、利用多色染色的方法设计一个扎染作品
- 2、Designing a Tie-dye Work by Multi-color Dyeing
- 3、收集喜爱的多色扎染图片进行配色临摹
- 4、Collect favorite multi-color tie-dye pictures for color copying

模块五 扎染产品的设计与制作

Module V Design and Production of Tie-dye Products

任务一 扎染服装产品设计与制作

Task I Design and production of tie-dye clothing products

任务目标

Mission Objectives

- 1、设计并制作一件扎染服装
1.Design and make a tie-dye costume
- 2、掌握扎染服装的设计原则
2.Master the design principles of tie-dye clothing
- 3、掌握扎染在服装设计中的运用方法
3.Master the application method of tie-dyeing in clothing design
4. 独立制作完成扎染服装
4、Independently make tie-dye clothes
- 5、根据所学的知识，小组合作，设计一个系列的扎染服装
5.Based on what you have learned, work in small groups to design a collection of tie-dyed garments

任务描述

Task Description

扎染是运用在传统服装中的手工艺之一，历史悠久，形式丰富。扎染在服装产品中的设计是非遗手工艺在生活中的传承，扎染服饰通过设计创新，不仅仅能

够满足人们生活中对美的追求，同时也是非遗传承的重要途径。

Tie-dyeing is one of the handicrafts used in traditional clothing, with a long history and rich forms. The design of tie-dye in clothing products is the inheritance of intangible cultural heritage crafts in life. Through design innovation, tie-dye clothing can not only meet people's pursuit of beauty in life, but also be an important way to inherit intangible cultural heritage.

任务要求

Mission Requirements

通过本次课程的学习，需要学生掌握扎染在服装设计中的设计方法，掌握扎染服装设计的基本原则与流程，培养学生的动手能力与创新能力，以及耐心，好学的专研精神。

Through the study of this course, students are required to master the design methods of tie-dye in clothing design, master the basic principles and processes of tie-dye clothing design, and cultivate students' hands-on ability and innovation ability, as well as the spirit of patience and study.

任务实施

Task implementation

一、课前导学

I. Pre-class Guidance

课前学生通过数字资源库或网络资源，图片资源进行观看学习，分析扎染服饰的特点以及技法原理，扎染服饰的设计风格与设计方法。

Before class, students watch and learn through digital resource library or network resources and picture resources, analyze the characteristics, techniques and principles of tie-dye clothing, and the design style and design methods of tie-dye clothing.

案例一 张肇达 M13 系列新中式成衣

Case I Zhang Zhaoda M13 Series New Chinese Ready-to-wear Garments

此系列中，以直线条的袍型为基础，保留了古人对服装的追求，以不突出身体轮廓为重点，让身体在衣服中不受约束。将宽衣博袖的特点解构，融入镂空、开衩、褶皱以及绑带的设计，在保有宽松的空气感之余，增加了服装的开放性与便利性。同时使用了民族扎染技艺，在服饰的配件以及局部应用了蓝染扎染工艺，整体色调朴素，有不失时尚。扎染的技艺主要运用在围巾上，服装局部的小面积。采用点状，线状的图形元素或者是肌理感的抽象纹样来表达，保留民族传统技艺的同时，又融入了现代简约摩登的时髦感。

This series, based on the straight-line robes, preserves the ancients' pursuit of clothing, focusing on not highlighting the outline of the body, so that the body is not restricted in the clothing. The features of wide sleeves are deconstructed, and the design of hollows, slits, folds and straps is integrated, which increases the openness and convenience of the clothing while maintaining a loose sense of air. At the same time, the national tie-dye technology is used, and the blue tie-dye technology is applied to the accessories and parts of the clothing. The overall color is simple and fashionable. Tie-dyeing is mainly applied to scarves and small areas of clothing. It is expressed by dotted and linear graphic elements or abstract patterns with a sense of texture, which preserves the traditional national skills and integrates the modern, simple and modern sense of fashion.



图 5.1.1 张肇达服饰系列

Figure 5.1.1 Zhang Zhaoda Costume Series

通常两款款式相近，长度相似的衬衣型外套，也可以采用彩色的扎染工艺，在此工艺中，可以采用相同的构图，例如：都使用弧线的向心型的装饰表现形式，主要的区别在于使用的色彩搭配不一样，一件用黄色紫色的互补色配色，另一件采用与整体面料颜色相同的颜色，小面积点缀黄色提亮。互补色给人感觉更加热情活泼躁动，另一种更加沉稳安静又不失动感。可见，即使款式相近，构图相同，扎染技艺中不同的配色赋予服装的是完全不一样的图案纹样风格。

Usually, two shirt-type coats of similar styles and lengths can also be tie-dyed in color. In this process, the same composition can be adopted, such as: They all use the centripetal decorative expression of arcs. The main difference is that the colors used are different. One uses the complementary color of yellow and purple, the other uses the same color as the overall fabric, and the small area is decorated with yellow for brightening. Complementary colors make people feel more enthusiastic, lively and agitated, and the other is more calm and quiet without losing movement. It can be

seen that even if the styles are similar and the composition is the same, the different colors in tie-dyeing techniques endow the costume with completely different patterns and styles.

二、课堂教学

II. Classroom Teaching

(一) 扎染服装产品的风格定位

(I) Style positioning of tie-dye clothing products

1、自然风格

1. Natural style

扎染服饰表现出来的自然风格指的是轻松，自然，舒适的样子，在颜色上贴近自然，比如蓝天白云，大理地区以及其他地区的靛蓝染色就是表达出蓝白相间的质朴纯真的自然感，在版型上比较宽松舒适，多以长袍，连衣裙的款式或者 OVERSIZE 的版型出现，面料的质感柔软，多采用棉麻质地的材料制作而成。整体宽松飘逸，颜色浅淡单一。

The natural style of tie-dyed clothing refers to the relaxed, natural and comfortable appearance, which is close to nature in color. For example, indigo dyeing in Dali and other regions expresses the simple and pure natural feeling of blue and white. In terms of layout, it is loose and comfortable, mostly in the styles of robes, dresses or OVERSIZE. The fabric is soft and mostly made of cotton and linen. It is loose and elegant as a whole, with a light and simple color.



图 5. 1. 2

Figure 5.1.2

2、都市风格

2. Urban style

都市风格的扎染服饰花纹的设计趋向于几何化或者抽象化，简单明快，表达简约干练的状态。在颜色的使用上一般也是单色染色，也可以采用多色套色。款式的设计上比较简洁合体，多做衬衣，合体连衣裙等款式。面料可以选择有一定

挺括感的棉或者柔软的丝绸。

The design of urban tie-dye clothing patterns tends to be geometric or abstract, simple and lively, expressing a simple and capable state. In terms of the use of color, it is generally monochromatic dyeing, and multicolor overcoloring can also be used. The design of the style is relatively simple and fit, and more shirts, fit dresses and other styles. The fabric can be cotton or soft silk with a certain crispness.

3、街头风格

3. Street style

街头风格的扎染服饰，趋向年轻化，多色扎染居多，五颜六色，色彩缤纷表现出年轻活力感。花纹的设计抽象且具有一定的线条律动感，如漩涡纹，云石纹等等，一般来说，在设计上T恤，卫衣的款式居多，富有弹性的针织面料加上抽象的色彩纹理，满满的时尚感。

Street-style tie-dye clothing tends to be younger, mostly multi-color tie-dye, colorful, colorful, showing a sense of youthful vitality. The design of patterns is abstract and has certain rhythmic lines, such as vortex patterns, marble patterns, etc. Generally speaking, T-shirts and hoodies are mostly designed, with elastic knitted fabrics and abstract color textures, which are full of fashion sense.



图 5.1.3 街头风格

Figure 5.1.3 Street style

4、文艺风格

4. Literary and artistic style

文艺风格扎染服饰追求低调而简约，有内到外散发的气质，不过于高调但是有精致度，服装的款式上追求小而精致的细节，整体的色调，一般来说版型合身不

修身，有一定的呼吸感，舒适不张扬。

Literary and artistic tie-dyed costumes pursue low-key and simple style, with a temperament from inside to outside, but not too high-profile but exquisite. The style of the costume pursues small and exquisite details and the overall tone. Generally speaking, the type fits the body, with a certain sense of breathing and comfort.



图 5. 1. 4 文艺风

Figure 5.1.4Artistic style

5、废土风格

5. Waste soil style

废土风格是一种世界背景，它是指人类在经历某一场浩劫之后，地球上的文明被毁灭了。又经历了很长一段时间，地球上的人类开始重新活跃，开始在这个环境下生存。在人物设计中，废土风格有个非常突出的特点，就是高科技和原始的东西会并存，高纯度色彩和低纯度色彩的装备夹杂在其中。

The wasteland style is a world context in which human civilization is destroyed after a certain catastrophe. After a long period of time, human beings on the earth began to re-activate and start to survive in this environment. In the character design, the waste soil style has a very prominent feature, that is, high technology and primitive things will coexist, high-purity color and low-purity color equipment mixed.

（二）扎染服装产品的设计

(II) Design of tie-dye clothing products

1、从细节入手进行设计

1. Design from details

传统的扎染技法追求对称，繁缛的花型设计，做工精致。在现代服饰上可以将传统的扎染技艺或者花型做为细节的点缀，既传承了传统技艺，也要这种传统技艺服务于现代服饰。

The traditional tie-dyeing technique pursues symmetrical, red tape design and exquisite workmanship. In modern costumes, traditional tie-dyeing techniques or patterns can be used as embellishment for details, which not only inherits traditional techniques, but also serves modern costumes.

2、从色彩入手进行设计

2. Design based on color

扎染的染料类型不同，扎染的效果也不一样，染料的颜色丰富，可以从色

彩的搭配入手进行设计，文艺自然的风格可以用单一的色调进行表达，街头风格可以用多色套色进行表现。

Different types of tie-dyes have different tie-dye effects. The colors of tie-dyes are rich, so the design can be started from the color matching. The natural style of literature can be expressed in a single tone, and the street style can be expressed in multi-color coloring.

3、从面料再造进行设计

3. Design from fabric reconstruction

扎染作为对纺织品进行的二次染色处理，也可以视作是面料或者纺织物的二次设计，把扎染的面料再次作为二次设计的材料进行使用，得到立体的视觉效果，可以作为服装的局部装饰，增加服装的精致度和设计感。

As a secondary dyeing treatment for textiles, tie-dyeing can also be regarded as a secondary design of fabrics or textiles. The fabrics of tie-dyeing are used again as materials for secondary design to obtain a three-dimensional visual effect, which can be used as a local decoration of clothing to increase the exquisiteness and design sense of clothing.

4、与其他手工艺技术相结合

4. Combination with other handicraft technologies

扎染的面料可以与其他面料进行组合设计，扎染面料作为有着无限表达可能的面料，可以与刺绣，贴布，拼布等服装工艺进行结合，比如用扎染的面料做贴布拼布的材料，或者在扎染好的面料上进行刺绣等等，都可以得到创新的设计，应用到服装中去。

Tie-dye fabrics can be combined with other fabrics for design. As a fabric with infinite expression possibilities, tie-dye fabrics can be combined with embroidery, patching, patching and other garment processes, such as using tie-dye fabrics as materials for patching, or embroidery on tie-dye fabrics, etc., and innovative designs can be obtained. Into clothing.

（三）实训任务

(III) Training Tasks

实训内容一

Training Content I

设计制作一款扎染成衣

Design and produce a tie-dye ready-to-wear product

实训要求

Training Requirements

1、设计并制作一款扎染成衣

1.Design and make a tie-dye ready-to-wear

2、季节主题可自拟

2.Seasonal theme can be customized

3、色系可自拟

3.The color system can be customized

4、扎结手法自拟

4.Self-determination of knotting techniques

5、完成打版制作

5.Complete printing

6、完成扎结工艺

6.Complete the binding process

7、完成染色工艺

7.Completion of dyeing process

8、检验成品并总结

8. Finished product inspection and summary

训练实施与记录

Training Implementation and Records

1、首先选择中厚的面型面料，白色或者浅色为首选。

1.First, choose medium-thickness fabric, white or light color is the first choice.

2、选择男装或者女装，设计款式并打版

2.Choose men's or women's wear, design styles and print versions

3、缝制服装，可以根据实际情况将裁片染色后再缝制

3.To sew a garment, you can dye the pieces according to the actual situation before sewing them.

4、扎结并染色，注意扎结的位置设计

4.Ligate and stain, pay attention to the location design of the ligation

5、采用蓝色系进行染色

5.Stain with blue series

6、整理成品并检验效果

6.Sort out the finished products and check the effect



图 5. 1. 5 扎染服装

Figure 5.1.5Tie-dye clothing

作者：2014 级服装与服饰设计班 杨佩君 唐丽

Author: Yang Peijun Tang Li, 2014 Class of Fashion and Apparel Design

完成评价分析

Complete evaluation analysis

男装的款式比较宽松，上衣留白的面积比较大，裤子做了局部的扎染，整体上做到了上下呼应，协调统一。从整体效果来看，上衣留白的面积略大，可以适当缩小留白的范围，从染色的工艺上来看，局部有染色不均匀的现象，面料略偏硬。

The style of men's wear is relatively loose, the blank area of the top is relatively large, and the trousers are tie-dyed locally, which echoes from top to bottom and is coordinated and unified as a whole. From the overall effect, the blank area of the jacket is slightly larger, which can appropriately narrow the blank range. From the dyeing process, there is uneven dyeing locally, and the fabric is slightly harder.

女装的款式比较合体，在胸部，摆边，袖口的地方作了扎染的设计装饰，扎染的面积相对比较小，整体比较精致简约，面料柔软，染色均匀，花纹比较清晰。在局部略有染色不匀，由于棉质易皱，局部有皱褶现象。整体效果良好，达到了实训的目的。

The style of women's wear is relatively suitable. Tie-dye design decoration is made on the chest, hem and cuffs. The area of tie-dye is relatively small, the overall is relatively exquisite and simple, the fabric is soft, the dyeing is uniform and the pattern is relatively clear. It is slightly unevenly stained locally, and there are wrinkles locally due to the easy wrinkling of cotton. The overall effect is good, achieving the purpose of practical training.

任务二 扎染配饰产品设计与制作

Task II Design and production of tie-dye accessories

任务目标

Mission Objectives

- 1、了解扎染配饰产品的设计原则与要求
- 1.Understand the design principles and requirements of tie-dye accessories
- 2、掌握扎染配饰产品的设计与制作方法
- 2.Master the design and production methods of tie-dye accessories
- 3、完成配饰的设计与制作
- 3.Complete the design and production of accessories

任务描述

Task Description

配饰包括除服装以外佩戴在人身体上的物品，包括包袋，首饰，鞋帽等等。扎染配饰设计是利用扎染手工艺对配饰进行设计，或者采用扎染的面料织物制作配饰品。通过学习，掌握扎染配饰的设计与制作方法。

Accessories include items worn on the human body other than clothing, including bags, jewelry, shoes and hats, etc. Tie-dye accessory design is to use tie-dye handicraft to design accessories, or use tie-dye fabric to make accessories. Through learning, master the design and production methods of tie-dye accessories.

任务要求

Mission Requirements

通过本课程的学习，需要掌握根据不同的扎染配饰产品选择不同的扎染技艺，完成配饰的设计与制作，并能够通过小组合作的形式创作一系列的扎染配饰产品。

Through the study of this course, students need to master the selection of different tie-dye techniques according to different tie-dye accessories, complete the design and production of accessories, and be able to create a series of tie-dye accessories in the form of group cooperation.

任务实施

Task implementation

一、课前导学

I. Pre-class Guidance Before class.

通过数字资源库、网络资源、图片学习资料，了解配饰设计中扎染技艺可以应用的范围，分析在配饰设计与制作中扎染技艺运用的方法与途径。

Through the learning materials of digital resource library, network resources and pictures, we can understand the application scope of tie-dye techniques in accessory design, and analyze the methods and approaches of tie-dye techniques in accessory design and production.



图 5.2.1 扎染帆布袋

Figure 5.2.1 Tie-dye Canvas Bag



图 5.2.2 扎染帆布袋

Figure 5.2.2 Tie-dye Canvas Bag

二、课堂教学

II. Classroom Teaching

(一) 配饰的分类与运用

(I) Classification and Application of Accessories

在服装家族中，服饰配件具有从属性，在一般情况下，一个人的整体外观中，服装应该占有主导地位，而配饰，化妆，发型等都围绕服装来考虑。在一个人的装扮中，配饰占据主导地位，就位造型喧宾夺主的感觉，然而，少数民族的服饰中十分注重配饰的装扮。在现代的某些场合中，设计师也可以强调配饰的设计，会达到意想不到的效果。

In the apparel family, apparel accessories have subordinate attributes. In general, apparel should dominate the overall appearance of a person, while accessories, makeup, hairstyle, etc. are all considered around apparel. In a person's costume, the accessory dominates, in place modeling the feeling of noisy guests

dominating, however, the costume of ethnic minorities pays great attention to the costume of accessories. In some modern occasions, designers can also emphasize the design of accessories to achieve unexpected effects.

配饰的分类可以按照装饰的部位来分，可以按照材料来分，主要包括首饰，包袋，花饰品，帽饰，鞋袜，领带及其他等等。由于扎染技艺是对织物的染色处理，因此，扎染在配饰上的运用也限制于能够进行染色的织物，一般广泛运用在帽子，围巾，领带，布艺首饰，袜子等等领域。

Accessories can be classified according to the parts of decoration, and can be classified according to materials, mainly including jewelry, bags, flower accessories, hat accessories, shoes and socks, tie and others. As tie-dyeing is the dyeing treatment of fabrics, the use of tie-dyeing in accessories is also limited to fabrics that can be dyed, and is generally widely used in the fields of hats, scarves, ties, fabric jewelry, socks, etc.

（二）配饰的设计原则

(II) Design Principles of Accessories

1、与服装的整体风格相协调

1. Coordinate with the overall style of clothing

配饰和服装密不可分，是服装的重要组成部分。单一的追求服装的形式美或者配饰美，都会显得不完整不协调。服装和配饰在设计上不能平分秋色，如果两者都视觉突出，就会显得杂乱无章，在扎染的配饰设计中，应该与整体服装相协调，风格一致，色彩与服装有呼应，款式或者构成的形式要与服装的款式协调起来。

Accessories and clothing are inseparable and are an important part of clothing. The single pursuit of the beauty of the form or accessories of clothing, will appear incomplete and inharmonious. Clothing and accessories cannot be divided equally in design. If both of them are visually prominent, they will appear disorderly. In the design of tie-dye accessories, they should be coordinated with the overall clothing, with consistent style, color and clothing echoing, and style or composition form should be coordinated with the style of clothing.

2、遵循形式美的法则

2. Follow the law of formal beauty

配饰是以装饰为目的，兼具功能与审美的产品。在配饰设计中与其他的艺术形式一样，需要遵循形式美的基本规律，如，点线面的结合，色彩，质地的搭配。由于扎染技艺主要针对能够染色的织物，所以色彩的搭配十分重要，另外，扎染材料本身的色彩，质感，肌理等都会影响最终的设计，在设计与制作的过程中要根据设计的意图选择合适的材料，方能达到满意的效果。

Accessories are products with both functions and aesthetics for the purpose of decoration. In accessory design, like other art forms, it is necessary to follow the basic laws of form beauty, such as the combination of dots, lines and planes, and the matching of color and texture. As the tie-dyeing technique is mainly aimed at fabrics that can be dyed, it is very important to match colors. In addition, the color, texture and texture of tie-dyeing materials will affect the final design. In the process of design and production, appropriate materials should be selected according to the design intent to achieve satisfactory results.

（三）实训任务

(III) Training Tasks

1、实训内容一

1. Training Content I

完成一款包袋的设计与制作

Complete the design and production of a bag

实训要求

Training Requirements

1、根据选择的材料完成设计图稿

1.Complete the design draft according to the selected materials

2、图稿包含设计扎染纹样

2.Tie-dye patterns are included in the drawings.

3、设计工艺细节

3.Design Process Details

4、制版图

4.Layout

5、打版缝纫，根据设计的效果选择先染后缝，还是先缝后染

5.For printing and sewing, choose whether to dye first and then sew, or sew first and then dye according to the design effect

6、扎结并染色

6.Ligate and stain

7、完成制作并检验

7. Complete fabrication and inspection

训练实施记录

Training Implementation Record

1、选择牛仔面料作为面料进行包袋的设计与制作

1.Choose denim as the fabric to design and make bags

2、选择褪色染色

2.Select fading staining

3、制作不规则的条形花纹

3.Making irregular strips

4、缝制包袋，完成成品

4.Sew bags to complete finished product

5、检验成品效果

5.Check the effect of finished products



图 5.2.3

Figure 5.2.3

完成评价与分析

Complete evaluation and analysis

包袋的款式为肩背式的托特包，整体颜色效果整体协调，花纹基本达到预期设计。做工略显粗糙。

The style of the bag is a shoulder-back tote bag, the overall color effect is coordinated, and the pattern basically meets the expected design. The workmanship is slightly rough.

2、实训内容 二

2. Training Content II

扎染布艺胸针的设计与制作

Design and Production of Tie-dye Brooches

实训要求

Training Requirements

1、完成扎染布艺胸针的设计

1. Complete the design of tie-dye brooch
- 2、完成扎染布艺胸针的制作
2. Complete the production of tie-dye brooches

训练实施记录

Training Implementation Record

- 1、选择扎染的布料，根据设计的需要选择不同厚度的面料
- 1.Choose tie-dyed fabrics, and choose fabrics with different thicknesses according to the design needs
- 2、根据布料的材质，颜色，设计胸针的款式，本次设计选择的是蓝色系的扎染布料
- 2.According to the material and color of the fabric, the style of the brooch is designed. The blue tie-dye fabric is selected in this design.
- 3、按照设计的要求裁剪布料
- 3.Cut the fabric according to the design requirements
- 4、缝制零部件
- 4.Sewn parts
- 5、组装零部件
- 5.Assembling parts
- 6、完成成品
- 6.Finished product
- 7、检验效果
- 7.Inspection effect



图 5.2.4 胸花

Figure 5.2.4 Breastflower

完成评价与分析

Complete evaluation and analysis

该系列作品整体色调统一，工艺制作精良，配色上采用了深浅的蓝色进行搭配，产生对比的效果。结合了刺绣中的打针法进行花心的设计，别出心裁。但是，第一款装饰略显得多，另外因为面料偏厚，在局部的工艺上不够精致。第二款整体效果更好。

This series of works has a uniform tone and excellent craftsmanship. The dark blue is used to match the colors, which produces a contrasting effect. Combined with the embroidery stitching method to design the flower heart, unique. However, the first decoration is slightly more, and because of the thick fabric, the local craftsmanship is not exquisite. The second paragraph has a better overall effect.

附：学生其他配饰作品

Attachment: Other Student Accessories



图 5.2.5 饰品

Figure 5.2.5 Accessories



图 5.2.6 包

Figure 5.2.6 Package

任务三 扎染软装配饰设计与制作

Task 3 Design and production of tie-dye soft decoration

任务目标

Mission Objectives

- 1、了解扎染软装饰品的设计原则与要求
1. Understand the design principles and requirements of tie-dye soft decorations
- 2、掌握扎染软装饰品的设计与制作方法
2. Master the design and production methods of tie-dye soft decorations
- 3、完成软装饰品的设计与制作
3. Complete the design and production of soft decorations

任务描述

Task Description

在家居空间里，室内陈设设计被称为“软装设计”，可以理解为一切可以移动的装饰物品。扎染具有独特的花纹特征，能够作为布艺装饰品应用在软装设计的方方面面。

In home spaces, interior furnishings are known as "upholstered designs," which can be understood as all movable decorative items. Tie-dye has unique pattern characteristics and can be used as a fabric decoration in all aspects of soft decoration design.

任务要求

Mission Requirements

通过本课程的学习，需要掌握根据不同的扎染产品选择不同的扎染技艺，完成软装饰品的设计与制作，并能够通过小组合作的形式创作一系列的扎染软装饰品。

Through the study of this course, students need to master the selection of different tie-dye techniques according to different tie-dye products, complete the design and production of soft decorations, and be able to create a series of tie-dye soft decorations through group cooperation.

任务实施

Task implementation

一、课前导学

I. Pre-class Guidance Before class.

通过数字资源库、网络资源、图片学习资料，了解室内软装设计中扎染技艺可以应用的范围，分析不同软装饰品的设计与制作方法，掌握扎染技艺在软装设计中的运用方法与途径。

Through the learning materials of digital resource library, network resources and pictures, understand the scope of application of tie-dye techniques in interior soft decoration design, analyze the design and production methods of different soft

decorations, and master the application methods and approaches of tie-dye techniques in soft decoration design.

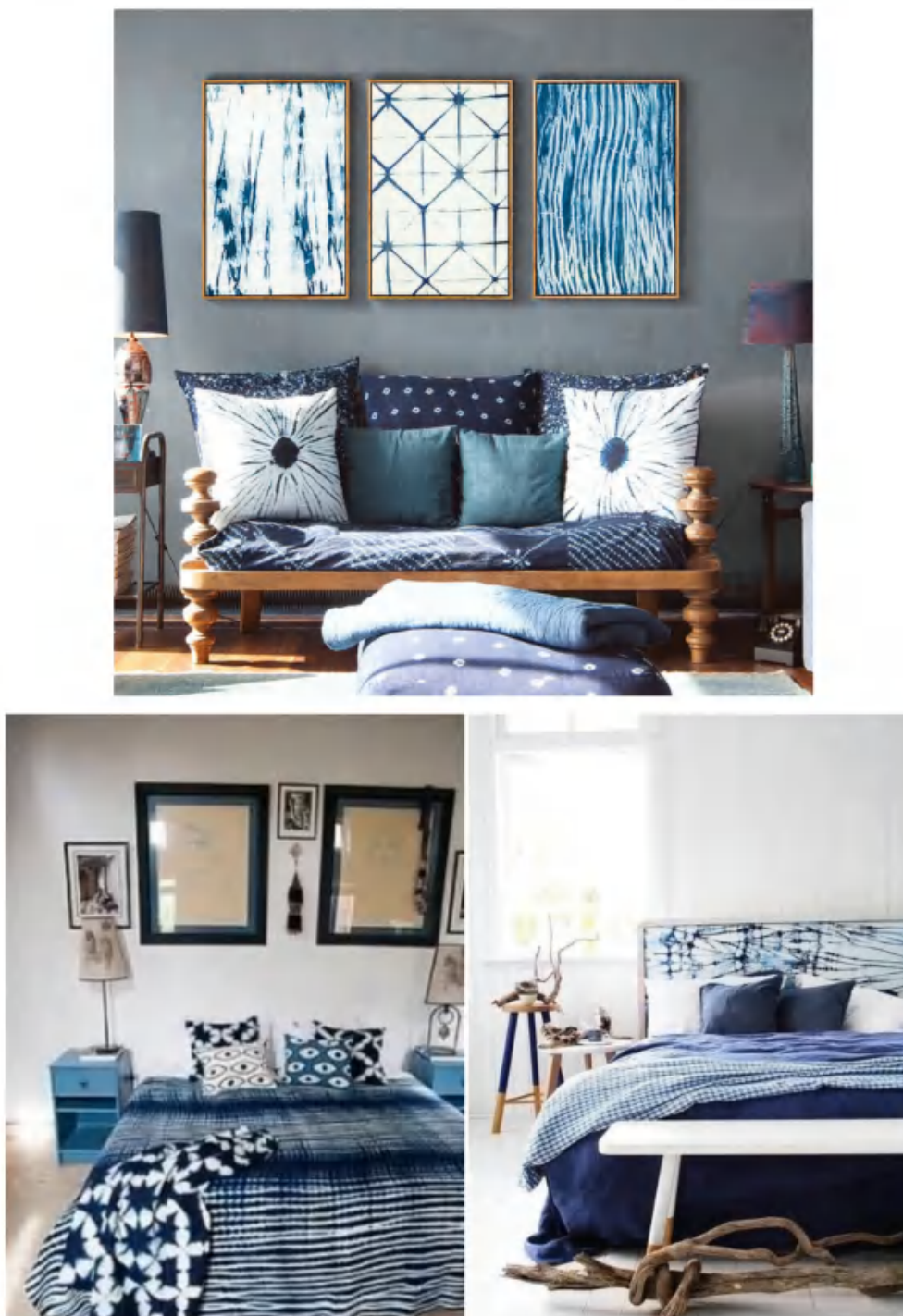


图 5.3.1 软装饰品
Figure 5.3.1 Soft decorations

二、课堂教学

II. Classroom teaching

(一) 室内软装饰品中扎染应用的范围

(I) Scope of tie-dye application in indoor soft decorations

1. 室内布艺织物

1. Indoor fabric

室内布艺织物主要包括床品，窗帘，靠枕等等。床品包括床单，枕套，被套，等等，均为纺织品。扎染具有民间生活的艺术审美思想，极具有环保，文化传承的特点。家居床品，窗帘中，运用传统扎染技艺，进行现代改良，可以营造出浓郁的自然舒适的生活气息。传统的手工扎染染料，所使用的是植物染料，也如何室内设计生态化的发展策略。以扎染为主题的床品设计，特别是以植物靛蓝染色的蓝白相间的布艺床品和窗帘，不仅清新自然，而且颇具生活情趣。

Indoor fabrics mainly include bedding, curtains, pillows, etc. Bedding including sheets, pillowcases, quilt covers, etc. are all textiles. Tie-dye has the artistic aesthetic thought of folk life, and is characterized by environmental protection and cultural inheritance. Home bedding and curtains, using traditional tie-dyeing techniques and modern improvements, can create a strong natural and comfortable atmosphere of life. Traditional handmade tie-dyes, using plant dyes, also how to design the indoor ecological development strategy. The bedding design with tie-dye as the theme, especially the blue-white fabric bedding and curtains dyed with plant indigo, is not only fresh and natural, but also quite interesting in life.



图 5.3.3 布艺

Figure 5.3.3Fabric

2. 室内家具

3. Interior furniture

扎染技艺在室内家具中的运用，主要是能够融合在布艺沙发，靠枕，可移动的屏风等等。在家具设计中融入手工扎染技艺，在花纹，色彩等方面有多种表现形式。

The application of tie-dyeing techniques in indoor furniture is mainly to be integrated into fabric sofas, pillows, movable screens, etc. Incorporating handmade tie-dyeing techniques into furniture design, there are many forms of expression in patterns, colors, etc.



图 5.3.4 软装饰品

Figure 5.3.4 Soft decorations

4. 室内灯具

4. Indoor lamp

灯具在提供照明功能的同时，能够营造室内空间整体的视觉气氛，特别是壁灯，台灯等灯具，具有柔和光线，调节情绪的作，布艺扎染的灯罩设计，能够获得较高的艺术表现效果，灯罩使用传统扎染的布艺，不仅因为布料的特性能够柔和光线，同时也扎染的花纹也具有一定的美感，营造出传统的文化氛围。

While providing lighting function, lamps can create an overall visual atmosphere in the indoor space, especially wall lamps, desk lamps and other lamps, which have soft light and can adjust emotions. The lampshade design of fabric tie-dye can obtain a higher artistic expression effect. The lampshade uses traditional tie-dye fabric, which can soften the light not only because of the characteristics of fabric. At the same time, tie-dyed patterns also have a certain sense of beauty, creating a traditional

cultural atmosphere.

5. 室内装饰画

5.Interior decoration painting

古老传承的扎染本就是独一无二，与个性十足又科技感满满的数码喷绘结合的天衣无缝，更加适合现代人们丰富多层次的审美与实用性相结合的需求。甚至这个可以作为装饰画，裱起来融入家装环境。

The tie-dye of ancient inheritance is originally unique, and seamlessly combined with digital spray painting with full personality and full sense of technology, which is more suitable for modern people's needs of combining rich and multi-level aesthetics and practicability. Even this can be used as a decorative painting, framed into the home environment.



图 5.3.5 装饰画

Figure 5.3.5 Decorative painting

6. 装饰花艺

6.Decorative flower art

装饰花艺讲究与室内其他设计协调，具有点缀的效果，居家装饰花艺可以给人们带来美的享受，缓解工作的压力，是一种常见的，深受大众喜爱的艺术品。扎染的织物作为布料，可以作为布艺花制作的原材料，拓展装饰花艺的设计范围。

Decorative floriculture pays attention to coordination with other interior designs and has the effect of embellishment. Home decorative floriculture can bring people beautiful enjoyment and relieve the pressure of work. It is a common and popular artwork. Tie-dyed fabrics, as fabrics, can be used as raw materials for fabric floriculture, expanding the design scope of decorative floriculture.

扎染出的布料颜色不同，制作出的花艺风格不同，蓝染的扎染花艺朴实精美，彩色的扎染花艺热情活泼。另外，花艺的款式不同，效果也不同，根据不同的设计效果需要，选择不同的花艺设计方式，能够很好的协调与点缀室内设计，增加室内的层次感。

Tie-dyed fabrics have different colors and floral styles. The blue tie-dye floral art is simple and exquisite, and the colorful tie-dye floral art is enthusiastic and lively. In addition, different floral styles have different effects. According to the needs of different design effects, different floral design methods can be selected to well coordinate and embellish the interior design and increase the sense of layering in the interior.

（二）室内扎染技艺运用的方法

(II) Application Methods of Indoor Tie-dyeing Techniques

1、点缀法

1.Decoration method

点缀法指的是，扎染的设计产品作为室内装饰的点缀，不作为主要的设计元素。比如，扎染的产品用做装饰花艺来点缀室内，作为装饰画品来装饰室内，或者作为灯罩进行烘托氛围。起到恰到好处的装饰作用。设计的原则是要与周围的环境协调，扎染产品的色彩，形式必须要与整体的设计相协调。

Decoration means that tie-dye design products are used as decorations for

interior decoration and not as the main design elements. For example, tie-dye products are used as decorative floriculture to decorate the interior, as decorative paintings to decorate the interior, or as lampshades to set the atmosphere. It's just the right decoration. The design principle is to coordinate with the surrounding environment, and the color and form of tie-dyed products must be coordinated with the overall design.

2、统一法

2.Uniform Act

将扎染产品作为室内主要的陈设设计，在简约的硬装中，用丰富的扎染软装设计来丰富空间的层次。比如：用统一的植物蓝染做室内空间的床品，窗帘，灯罩等软装的设计，蓝白相间，整体协调，具有自然的气息。如果使用多色的扎染软装设计，色彩搭配与图案设计原则上要求统一，避免凌乱。

Tie-dye products as the main interior furnishing design, in the simple hard decoration, rich tie-dye soft decoration design to enrich the level of space. For example, the uniform plant blue is used to dye the bedding, curtains, lampshades and other soft decoration designs in the indoor space, which are blue and white, coordinated as a whole and have a natural atmosphere. If multi-color tie-dyeing soft design is used, the color matching and pattern design shall be unified in principle to avoid mess.



图 5.3.6 装饰

Figure 5.3.6 Decoration

(三) 实训任务

(III) Training Tasks

实训内容

Training Contents

完成一件室内软装饰品的设计与制作，种类自选

Complete the design and production of an interior soft decoration, with optional types

实训要求

Training Requirements

1、完成合作企业提出的为茶生活空间设计一款杯垫的设计任务

1. Complete the design task of designing a cup mat for the tea living space proposed by the cooperative enterprise

2、运用到天然植物染色

2.Apply to natural plant dyeing

3、材料以棉麻为主

3.Mainly made of cotton and linen

4、制作完成并验收

4.Completion of fabrication and acceptance

训练实施与记录

Training Implementation and Records

1、设计

1.Design

企业提出的是设计一款茶杯垫，用到自然的棉麻和植物染色，首先确立风格以自然纯朴为主，做适当的色彩搭配。由于杯垫的面积比较小，在设计手法上采用拼接的方式，用不同颜色的扎染布进行拼接，在设计中注意颜色的搭配组合和每一块材料之间的比例关系。可以借鉴蒙德里安的色彩构成比例分割形式。

The company proposed to design a teacup mat, using natural cotton and linen and plant dyeing. First of all, the style is determined to be natural and simple, with appropriate color matching. Due to the small area of the cup mat, splicing is adopted in the design method, and tie-dyed cloths of different colors are used for splicing. Attention should be paid to the color combination and the proportional relationship between each material in the design. It is possible to learn from Mondrian's color composition proportional segmentation.

2、裁剪

要根据设计的比例进行裁剪，差之毫厘谬以千里。比例在视觉上起到关键性的作用，因此裁剪的时候务必要准确。在这里，颜色的搭配也至关重要。颜色的面积决定了它的主导作用，在裁剪之前就要确立每个裁片的面积、形状，调整好比例关系。

2. Tailoring.

Cut according to the proportion of the design, the difference is a thousand miles.

Proportions play a key role visually, so be sure to tailor accurately. Color matching is also crucial here. The area of color determines its dominant role. Before cutting, it is necessary to determine the area and shape of each piece and adjust the proportional relationship.

3、缝制

3.Sewing

(1) 首先拼接小的裁片，确保每一片对接整齐，缝线为直线。

(1) First, splice small pieces to ensure that each piece is butted neatly and the stitches are straight.

(2) 烫粘合衬，在缝好的裁片上烫粘合衬，使面料硬挺

(2) Press the adhesive interlining on the sewn pieces to make the fabric stiff

(3) 将面与底的布料在反面缝合，留一段返口

(3) Stitch the cloth on the reverse side of the surface and bottom, leaving a return opening

(4) 利用返口将杯垫反过来，整烫，保证边缘整齐

(4) Use the return mouth to reverse the cup mat, and iron it to ensure that the edges are neat

(5) 在距离边缘 0.2 左右的地方压明线

(6) Press the open wire at a distance of about 0.2 from the edge

4、检查成品是否符合企业要求

4. Check whether the finished products meet the enterprise requirements



图 5.3.7 拼布扎染杯垫
Figure 5.3.7 Patchwork tie-dye cup mat

拓展练习

Extension exercise

1、完成一组软装饰品的设计与制作

1. Complete the design and production of a set of soft decorations

2、搜集喜爱的软装饰品，利用扎染技艺进行创新设计

2. Collect favorite soft decorations and use tie-dyeing techniques for innovative design

附： Attachment:

扎染服装设计作品 Tie-dye costume design works





















附：与企业合作的产品

Attachment: Products cooperated with enterprises





























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