Modular batik stamp block : Development of Southern Thai Printing batik stamp block [1] การพัฒนาแม่พิมพ์ผ้าบาติกแบบโมดูลาร์

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Abstract

According to the survey on block-printed batik production using metal blocks in Thailand's three southernmost provinces – Pattani, Yala and Narathiwat, only batik factories in Narathiwat were found using such method. Since the blocks were made of metal, their parts were damaged by getting bent, twisted or hit by one another when stored. Additionally, the metal parts would come off the plates because they were not properly welded. According to Mr. Ya Bindorlao, a metal block-maker, batik block production and repair required meticulous skills and expertise. In addition, some blocks were repairable while others were discarded due to high repair cost although some parts were still functional. Batik makers, therefore, tended to use the same blocks repeatedly, limiting innovative patterns in the market.

The objectives of this study were as follows: 1) To collect and examine batik motifs on metal blocks in the three southernmost provinces of Thailand. 2) To develop modular batik blocks, whose parts can be removable and adjustable in order to create more patterns

The study shows that the motifs found on the metal blocks can be classified into six categories: 1) a flora motif, 2) a geometric motif, 3) a fauna motif, 4) an object motif, 5) a mixed flora and geometric motif and 6) an alphabet and symbol motif.

The modular batik blocks developed in this study are composed of 1) a plate, 2) metal motif parts, 3) wood motif parts and 4) a handle. To create patterns, users are able to choose to use either only metal, or only wood or a combination of both metal and wood motif parts to arrange on the plate. The experiments showed the following results:

1. The re-arrangement of motif parts resulted in the diversity of patterns.

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2. The use of a mix of metal and wood parts only on one plate yielded more dimensional effects on line motifs on the fabric. In other words, metal parts gave thin line motifs while wood parts created thicker stripes, resulting in a unique appearance.

3. With the use of both metal and wood parts, when the blocks are submerged in hot wax, the amount of wax used needed to be reduced by shaking off the excess wax. However, how much wax should be shaken off depended on the concentration of the wax solution.

Keywords: Batik stamp, block-printed batik

บทคัดย่อ

การทำผ้าบาติกลายพิมพ์ด้วยแม่พิมพ์โลหะในประเทศไทยนั้น จากการสำรวจพื้นที่ในเขตสามจังหวัดชายแดนภาคใต้ คือ จังหวัด ปัตตานี ยะลา และนราธิวาส พบว่า มีโรงงานผลิตผ้าบาติกในเขตจังหวัดนราธิวาส และเนื่องจากวัสดุที่ใช้ในการทำพิมพ์เป็นโลหะ จึงมีการยุบตัวของชิ้นโลหะที่นำมา ประกอบเป็นแม่พิมพ์อันเนื่องมาจากการกระแทก ของแม่พิมพ์กับวัตถุอื่น หรือแม่พิมพ์ชิ้นอื่นใน ขั้นตอน การจัดเก็บ อีกทั้งยังมีการหลุดของชิ้นส่วนโลหะที่นำมาประกอบ เป็นลวดลายบนแม่พิมพ์ อันเนื่องจาก โลหะบัดกรีไม่ยึดตีดติดกับโลหะที่นำมาประกอบเป็นลวดลายบนแม่พิมพ์ ซึ่งนายยา บินดอเลาะห์ ช่างทำแม่พิมพ์ผ้าบาติกชาวไทย ได้กล่าวไว้ว่า การทำและซ่อมแซมแม่พิมพ์ ต้องใช้ความประณีตและความชำนาญ แม่พิมพ์บางชิ้น สามารถซ่อมแซมได้ แต่อีกหลายชิ้นต้องทิ้งไปเพราะไม่สามารถซ่อมได้ ถึงแม้จะมีบางส่วนบนแม่พิมพ์ที่ยังใช้งานได้อยู่ และเนื่องจากราคาในการทำและซ่อมแซม แม่พิมพ์แต่ละชิ้นมีราคาที่ค่อนข้างสูง ผู้ผลิตผ้าบาติกลายพิมพ์จึงนิยมใช้แม่พิมพ์วนไปเรื่อยๆ เราจึงไม่ค่อยเห็นผ้าบาติกลายพิมพ์ที่มีลวดลายแปลกใหม่ในท้องตลาด

การทำวิจัยในครั้งนี้ผู้วิจัยมีจุดประสงค์ดังนี้ 1) รวบรวมและศึกษาลวดลายผ้าบาติกที่อยู่บนแม่พิมพ์โลหะในเขต 3 จังหวัดชายแดนภาคใต้ 2) พัฒนาแม่พิมพ์ผ้าบาติกแบบโมดูลาร์ ที่สามารถปรับเปลี่ยนชิ้นส่วนลวดลาย และสามารถปรับเป็นลวดลายใหม่ได้หลายรูปแบบ

จากการศึกษาและรวบรวมข้อมูลลวดลายบนแม่พิมพ์โลหะสามารถแบ่งลวดลายบนแม่พิมพ์โลหะออกเป็น 6 ชนิด ดังนี้ 1) ลวดลายพฤกษาพรรณ 2) ลวดลายเรขาคณิต 3) ลวดลายผสมระหว่าง พฤกษา พรรณ และเราขาคณิต 4) ลวดลายวัตถุสิ่งของ 5) ลวดลายสัตว์ 6) ลวดลายตัวอักษรและตราสัญลักษณ์

แม่พิมพ์ผ้าบาติกแบบโมดูลาร์ ที่พัฒนาขึ้นในงานวิจัยชิ้นนี้ ประกอบด้วย 1) แป้นรองลวดลาย 2) ชิ้นส่วนลวดลายชนิดโลหะ 3) ชิ้นส่วนลวดลายชนิดไม้ 4) และด้ามจับ โดยการสร้างลวดลายบนแม่พิมพ์ ชนิดนี้เกิดจากการนำชิ้นส่วนลวดลายมาจัดเรียงบนแป้นรองลวดลาย ผู้ใช้สามารถใช้เฉพาะชิ้นส่วน ลวดลายชนิดโลหะ หรือ เฉพาะชิ้นส่วนลวดลายไม้ หรือใช้ร่วมกันทั้งชิ้นส่วนลวดลายโลหะและไม้ก็ได้ และจากการทดลองพบว่า

1. การปรับเปลี่ยนชิ้นส่วนลวดลายเพื่อให้เกิดลวดลายใหม่นั้น ความหลากหลายของลวดลายใหม่ที่เกิดขึ้น ขึ้นอยู่กับความหลากหลาย ของชิ้นส่วน ลวดลาย

2 เส้นลวดลาย ที่เกิดจากการผสมกัน ระหว่างชิ้นส่วนลวดลายชนิดโลหะ และชิ้นส่วนลวดลาย ชนิดไม้ จะทำให้เกิดมิติของเส้นลวดลาย บนผืนผ้าเดียวกันด้วยการใช้แม่พิมพ์ เพียงชิ้นเดียว กล่าวคือ เส้นของชิ้นส่วนลวดลายชนิดโลหะ จะให้เส้นที่บาง และส่วนชิ้นส่วนลวดลาย ชนิดไม้จะให้เส้นที่หนา ซึ่งถือว่าเป็นสเน่ห์และเป็นเอกลักษณ์ของ การพิมพ์ด้วยแม่พิมพ์ชนิดนี้

3 การใช้แม่พิมพ์ที่เกิดจากการผสมระหว่างชิ้นส่วนลวดลายชนิดไม้และโลหะ หลังจากจุ่ม แม่พิมพ์ในเทียนร้อนเพื่อนำมาพิมพ์บนผ้า ควรลดปริมาณเทียนร้อนที่ติดบนแม่พิมพ์ ด้วยการสลัด น้ำเทียนออกจากแม่พิมพ์ ทั้งนี้ความเหมาะสมของจำนวนครั้งของการสลัด แม่พิมพ์ที่จะทำให้ลวดลายที่เกิดจากการพิมพ์บนผ้ามีความคมชัด ขึ้นอยู่กับความเข้มข้นของส่วนผสมของน้ำเทียน ที่ใช้ในการพิมพ์

คำสำคัญ: แม่พิมพ์ผ้าบาติก

1. Introduction

1.1 Background and Significance

The geography of the southern region of Thailand is a long area surrounded by coastlines on both sides that made Southern become a port city of the Malay Peninsula in the past and thus triggered the international trade with many countries in Asia, Europe and Middle East(Krongchai Hatha. 2548 :247-257).A variety of ethnic groups widely came to settle in this region, while its population migrated to other countries. This resulted in the exchange of knowledge and culture among different societies. If a new wisdom and culture is adopted by most people in that society, it will eventually become part of the local cultur (Suphatra Suphap. 2522 :70-71) .According to Kroeber's theory (referred Pajongjit Athikomnanta. 2543: 20) , Culture, innovation and invention will be developed if it comes to a saturation point or the problems of usage are occurred yet people need to use it repetitively and face with such an endless issue that they are frustrated.

There are two main types of batik: The first one is Hand-drawn batik (Membatik Tulis) that is a traditional type of batik. The motifs are created by using a utensil called Canting. The canting is filled with hot wax and drawn onto the prepared fabric. Another type of batik is the block-printed batik (Membatik Cap). The metal block (Cap) is dipped into the hot wax, and then it is pressed onto the fabric. Metal batik block was invented in the 19th century in order to increase the productivity, as the process of hand-drawn batik is slow and time consuming, also it has high production costs. As a consequence, block-printed batik has retained its popularity until the present.

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Batik is widely used in Thailand's three southernmost provinces – Pattani, Yala and Narathiwat. Besides, it becomes a part of clothing culture of this region. The first block-print batik factory was established in Narathiwat about 50-60 years ago by local people.

Mr.Ya Bindorlao had worked for his relative's batik factory in Malaysia. He had gained experience and skills related to producing batik and brought the knowledge back to his hometown, where he set up his own batik factory. At first, the metal batik blocks were purchased from the states of Kelantan and Terengganu in Malaysia. Later, there was a metal block-maker in Su-ngaiKolok district, Narathiwat; however, block-printed batik from Malaysia and Indonesia were still popular. (Jureerat Buakeaw, et al. 2545: 144)

Nowadays, most metal batik blocks are imported from Malaysia accounted for 95%, while just 5% represents batik blocks created by the only one Thai block-maker, yet there is a few blocks ordered from Indonesia. (Interviewed Varemaso Varedaoh, 8 May 2010).

Mr.Ya Bindorlao, a Thai metal block-maker, said that he had initially worked at the block-printed batik factory in Malaysia. No one taught him how to make the metal blocks but he had learned through observing Malaysian counterparts. The process of block production and maintenance required specific skills and expertise. Some blocks were nearly perfect but it was difficult to fix, while others had distorted parts and even came off which made the rest of the parts unusable. Therefore, they were discarded (Interviewed on 9 May 2010).

A batik block could normally create only one motif and the price was relatively high, depending on its material, size and delicacy. As a result, batik manufacturers often repeatedly used the same blocks. After a period of time, the old patterns would fade from batik consumer's mind, so they were always recognized as new ones. (Interviewed Varemaso Varedaoh, 8 May 2010)

There was only one batik block-maker in Thailand. Thus, the development of batik blocks, with the purposes of getting it fixed easily, swapped a damage part to replace with a new one and modified to create new motifs, would be a way that helped increase the flexibility in creating and using batik blocks. In addition, the developed batik blocks could an inspiration in creating a unique piece of work of the three southernmost provinces and the overall Thailand.

1.2 Research Objectives

1.2.1 To study and classify metal batik blocks, used in the three southernmost provinces of Thailand.

1.2.2 To develop each batik block that its parts can be removable and adjustable in order to make more than one pattern (Modular).

1.3 Definition of Terms

1.3.1 Modular batik block is a batik block whose components can be disassembled, re-arranged and also the direction of motif on the block can be adjusted. The motif on the block can be created by either metal motif-pieces or wooden motif-pieces or both above mentioned.

1.3.2 CAP is a traditional batik block, which is made of metal, used for motif printing by being dipped into the hot wax then printed onto the desired position of fabric.

2. Materials and Method

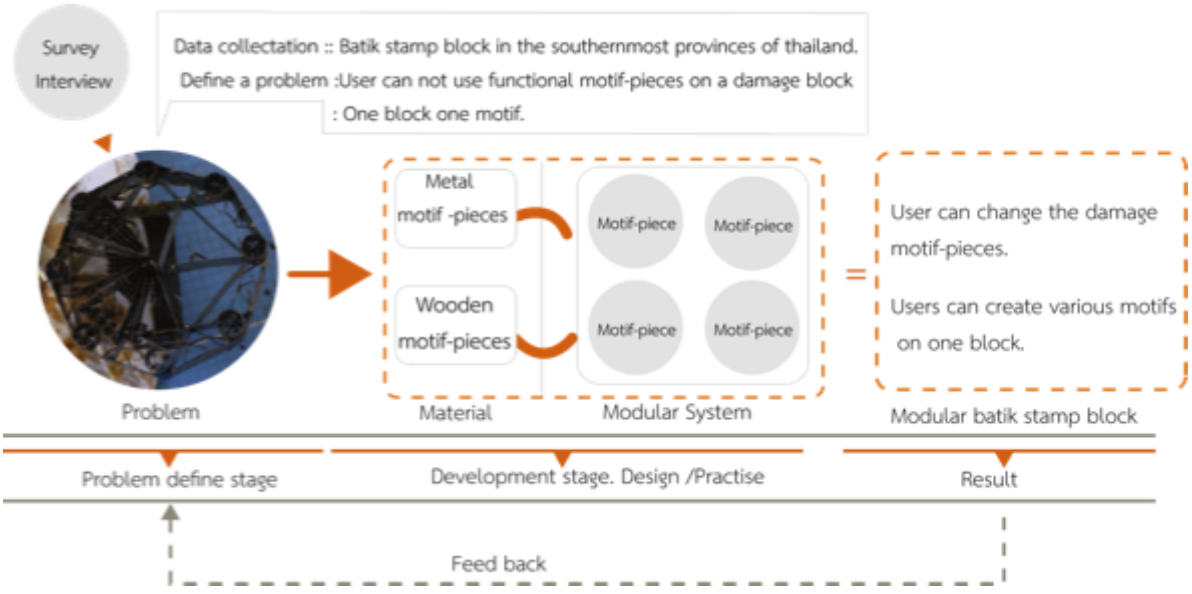

Figure 1: Research Methodology Diagram

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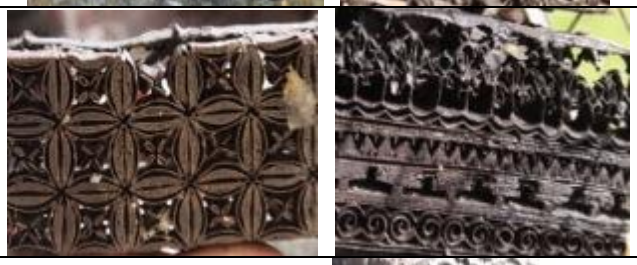
2.1 Research preparation process

2.1.1 Data Collection

The study and data collection showed that metal blocks for the block-printed batik production in Thailand's three southernmost provinces: Indonesia, Malaysia and Thailand. The motifs that were found on the metal blocks can be classified into six categories as follows: 1) Flora motif. 2) Geometric motif. 3) Fauna motif. 4) Object motif. 5) Mixed flora and geometric motif. 6) Alphabet and symbol motif

Categories of motifs	Example of metal blocks
1 Flora motif	
2 Geometric motif	
3 Fauna motif	
4.Object motif	

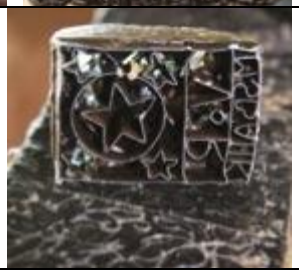
5 Mixed flora and geometric motif	 
6 Alphabet and symbol motif	 

Table 1: Examples of metal batik blocks and its categories

Batik blocks do not have a fixed size; they are varied depending on motif's style and producer's need.

2.1.2 Problem Analysis

Parts of each motif block are delicate and difficult to make and maintain. When certain parts of the block are damaged, the entire block becomes dysfunctional although other remain functional. One motif block can only make one pattern.

Figure2: Functional motif-pieces on a damaged block

2.2 Design and Development Process

Metal batik block users often encounter a block damage issue that is hard to resolve and some pieces left on the block are nonfunctional as well. Therefore, a researcher analyzed and developed the arrangement of motif-piece with a modular design principle that will enable users to remove a damage motif-piece from the block and replace with a new motif-piece. Besides, apart from metal blocks that are widely used, wooden blocks are also applied to produce block-printed batik in Yala province.

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Figure 3: Wooden batik blocks by Sri-Yala Batik in Yala province

According to the above information, the researcher selected wood and metal as a material for developing motif-pieces. The motif-pieces have rectangular shape and were made in different sizes, which are 3x3 inches 3x6 inches and 3x9 inches, to be assembled onto the area of 9x9 inches. Each motif-piece can be swapped and replaced with a different one to create new motifs. The results of the analysis of motif-piece arrangement are shown as below:

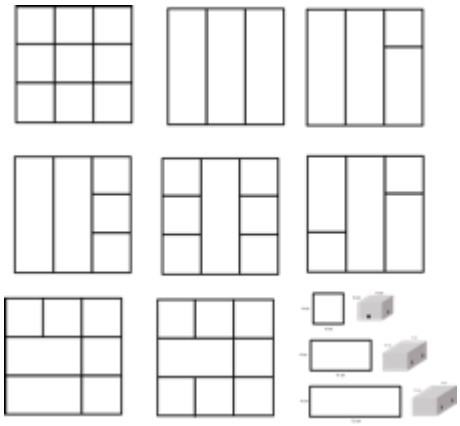

Figure 4:Motif-piece arrangement

Figure 5: Example of Modular batik block's prototype

Figure 6: Example of Modular batik block type 1

The researcher developed a prototype of modular batik blocks shown in the Figure 5 into a modular batik block type 1 as shown in the figure 6, then had the specialists in regional arts and culture with emphasis on making block-printed batik ,and the batik block-maker assess by means of interview.

In the first interview, the researcher focused on questioning about the motif-pieces arrangement and modification to assembly and design new motifs. The interview revealed that motifs designed by the system of motif-pieces arrangement allowed users to modify a variety of motifs; however, there are limitations on design. In other words, the motif's style seems to be more like an alternation than a combination. Also, there is a lack of flexibility in adjusting the motif direction. Can be seen in Figure 7

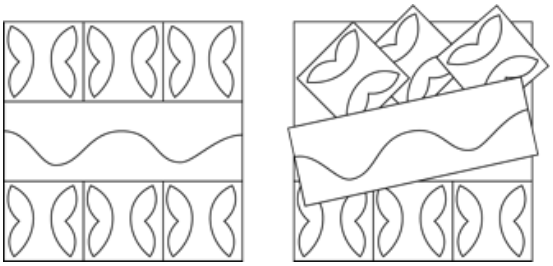

Figure 7: shows what happens when parts of the Modular block 1 are re-arranged.

With regard to the assessment results, the researcher modified and developed the motif-pieces arrangement into the plate by analyzing the alignment of screws that fixed subunits together behind the block and drawing a line to connect each point. Results are as shown in the Figure 9

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Figure 8: The front and back view of Modular batik block type 1

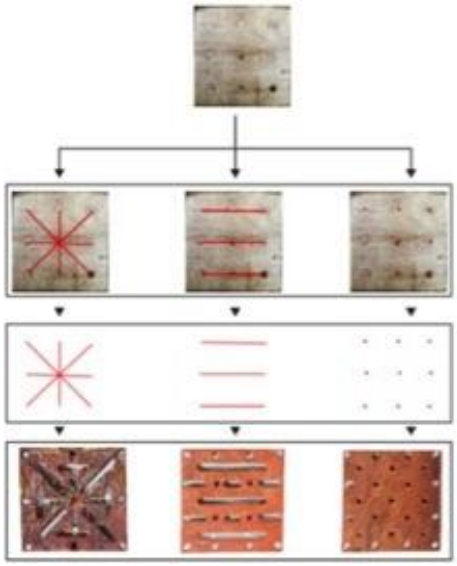

Figure 9: The process of plate development to design Modular batik block's motif

Figure 10: Modular batik block type 2

The results of the second interview shown that the motifs design, created by the system of subunit arrangement had more flexibility. Motifs on metal motif-pieces were beautifully combined with those on wooden motif-pieces. In addition, it took up less space to store the block when disassembled.

3. Results

An outcome from the development of modular batik block was a modular batik block type 2. Research results were divided into 2 main points as followed:

3.1 The structure of modular batik block is comprised of a plate, motif- piece and handle.

3.1.1 Plate is a grooved hard wood used for creating and modifying the plate. The plate is divided into three types: star-shaped plate, line-shaped plate and random-shaped plate

Figure 11: Star-shaped plate

Figure 12: Line-shaped plate

Figure13: Random-shaped plate

3.1.2. Motif-pieces are of different shapes and can be made from either metal or wood. Motif-pieces are arranged on the plate to create motifs. Behind each motif-piece is attached to bolts to be stuck, slided and rotated, accordingly resulting in the ability to adjust its position and direction on the plate. Also, there are washers and nuts help fasten motif-pieces with the plate.

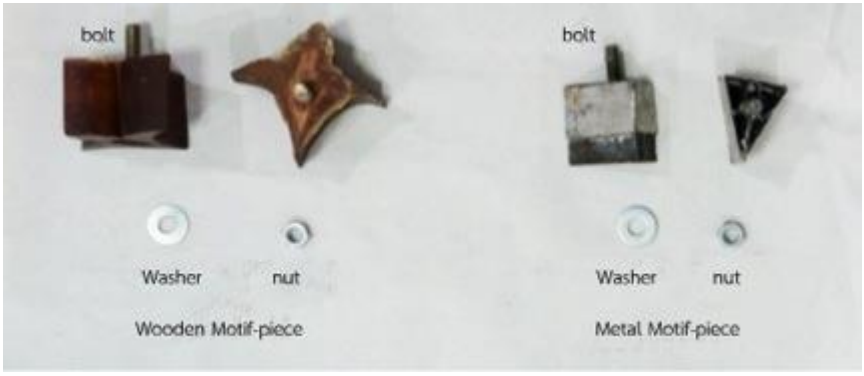

Figure14: Components of metal motif-piece and wooden motif-piece

3.1.3 Handle is a part that is attached to the plate. Handle, which is designed to be held when users dip plate into the wax and print onto the fabric, can be disassembled.

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Figure 15: Block's handle

Figure 16: Modular batik block

3.2 Motif creating is the process of sticking, sliding and rotating of motif-pieces to the proper alignment in order to make new motifs on the plate. Motif-pieces are attached to the plate by washers and nuts.

Wooden motif-pieces. Metal motif-pieces.

Figure 17: Example motif-pieces for create motifs on the plate

Both metal motif-piece and wooden motif-piece are independent and can be adjusted depending on user's needs. Moreover, users can use different type of motif-pieces, either metal or wooden, to create motifs on the same plate. The more creative the users get and the more varied the parts are, the more diverse patterns the block will create.

Figure 18: Example of Motifs creation from metal motif pieces and wooden motif-pieces

The experiment revealed that users could create more patterns by using different parts. It also showed that using star and line motif plates was more flexible than the random ones because the former types had both holes and slack that allowed the parts to be adjustable for different angles, creating more patterns while the latter with only hole limited patterns.

3.3 Discussion and Conclusion

The blocks found in the three southernmost provinces are those that are made of either wood or metal, with motif attached to them. The study showed no evidence of any one batik block made of both wood and metal. Nor it revealed any with adjustable parts to create different patterns. Therefore, it is strongly believed that the "modular batik stamp block" is an innovation in batik print production.

From the experiment of modular batik block, it was proved that either metal motif-piece or wooden motif-piece or both of them can create the motifs that are practically applied for printing. However, it was advisable to reduce the amount of wax that sticks to the block before printing for a clearer and sharper motif.

Using modular batik stamp block allows parts to be re-arranged, added or taken out and to be adjusted in different angles to create more patterns. As a result, the more parts on the block, the more diverse the patterns can be created.

The lines of motif that are created by a combination of metal motif-piece and wooden motif-piece will have differences in thickness in the same block. This is the uniqueness of this block as can be seen in Figure 21.

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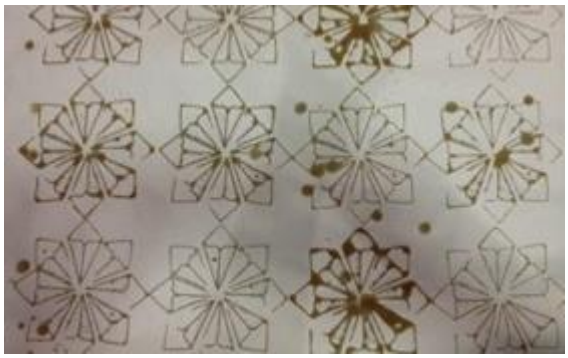

Figure 19: Motif created in the experiment of printing wax onto paper by Modular batik block formed with metal motif-piece

Figure 20: Motif created in the experiment of printing wax onto paper by Modular batik block formed with wooden motif-piece

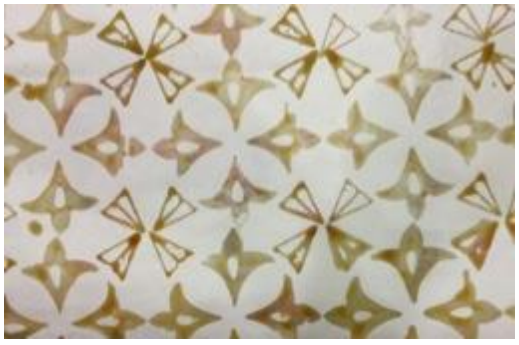

Figure 21: Motif created in the experiment of printing wax onto paper by Modular batik block formed with metal and wooden motif-piece

Figure22: Block-printed batik made by Modular batik block

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