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Batik Stamp *Canting* as An Interior Material

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ABSTRACT

Batik's recognition as a world heritage by UNESCO has given a positive impetus to the batik industry. The encouragement, however, has yet reach the batik stamp (*cap*) *canting* home industry, which is a supporting sector of stamped batik. Knowledge and expertise in making stamps *canting* are difficult to transfer to the next generation because the economic value is not promising. The raw material of the stamp *canting*, namely copper metal, has unique characteristics. In terms of visual appearance, the stamp *canting* has an aesthetic value for the interior. An experimental method is used in the research to produce interior material prototypes that are suitable for market. The making of an interior elements model uses computer programs and tools for design, which are known as computer-aided design (CAD) to reduce costs because it can provide a photorealistic visualization. The outcome is expected to encourage the growth of the batik stamp *canting* home industry, hence its economic value will incline. The ultimate goal is to increase employment by pushing stamp *canting* quantity production due to the demand for interior materials then will open up opportunities to regenerate the skills to make batik stamp *canting*.

KEYWORDS

Crafts
Diversification
Java
Experiment
Prototype

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1. Introduction

The UNESCO's acknowledgment that batik is a world cultural heritage (The Intergovernmental Committee for Heritage Safeguarding of The Intangible Cultural 2009) is a stimulus for batik industry hence batik has found a new passion. Hand-drawn batik (batik *tulis*) has a high economic value because the manufacturing process shows the traditional culture expression. Meanwhile, stamped batik (batik *cap*) is popular even though the manufacturing process is not as complicated as hand-drawn batik. The ever-growing motifs and competitive prices from an economic standpoint have made stamped batik popular. Unfortunately the stamped batik popularity is not followed by the amount of production of batik stamp *canting* (*cap* batik). Batik stamp *canting* is a tool for taking *malam* (liquid wax). A stamp *canting* is a copper plates that was designed to certain ornaments which used to attaching and transferred liquid wax to a fabric to draw a batik motifs (Lewis 1924). Batik stamp *canting* is an traditional art work for the Indonesian nation, because the manufacturing process also shows a high artistic value. To produce a stamp *canting* requires special expertise on material treatment because of its complexity (Sulistyani 2013). There are four factors that cause the making of batik stamp *canting* did not attract the younger generation attention. The duration of the use of stamp *canting* is quite long, up to more than 10 years. The batik stamp *canting* craftsmen will only make new motifs if there is an order which follow the trend of batik in the market. Batik stamp *canting* is no longer used when the motif is not popular anymore. The combination of the four factors above is the main reason for the difficulty of regenerating the skills of making batik stamp *canting*.

Discussion about batik stamp *canting* has existed almost a century ago. From the initial research, we found a publication about stamp *canting* in 1924 by Albert Buell Lewis with the title Javanese Batik Designs From Metal Stamps. The focus of Lewis's discussion is on the functions and motifs which commonly used in stamp *canting*. A study of the difficulty of regenerating batik stamp *canting* craftsmen was carried out by (Sudarto 2017) with the title *Strategi Pembuatan Canting Cap Dari Tembaga Untuk Meningkatkan Hasil*

Kualitas Batik (Strategy for Making Stamp Canting from Copper to Improve Batik Quality Results). The experimental studies targeted the encouragement for technical development as an effort to support the skills of making batik stamp *canting* regeneration (Sudarto 2017). Several publications discuss alternative materials for batik stamp *canting*. Economic factors and availability of materials triggering the trials of paper materials for batik stamp *canting* (Vilaruka and Mutmainah 2022). A creation of stamp *canting* used cans as an innovation effort with the aim of utilizing waste is expected to reduce production costs (Kartini, Syamwil, and Wahyuningsih 2020). Batik stamp *canting* are already used as space accessories, however, the diversification of the function of the new (not used) batik stamp *canting* as an interior material has not been mentioned in previous publications. Currently the development of interior materials is very dynamic. The market's demand for interior material innovation has encouraged the idea of experimentation using batik stamp *canting* due to the fact that although these objects are used, they can still be used as interior ornaments. The problem of the function of the stamp *canting* as an interior material needs to be explored because its existence is in danger of disappearing due to the low interest of the next generation to become a stamp *canting* craftsmen.

The renewal of efforts to develop batik stamp *canting* for interior materials lies in the diversity of functions to increase economic value. The locus research is in Surakarta. The home industry of stamp *canting* in Surakarta cannot be separated from the development of the batik industry. In Surakarta, the batik industry started in the early 19th century, and over time, the quantity of production increased sharply due to the use of stamp *canting* in the batik process (Brenner 1998). Unfortunately, data from the field provide the number of craftsmen who are engaged in making of stamp *canting,* currently, is decreasing. The decreasing amount of craftsmen must get attention because it can cause the possibility of the expertise to make stamp *canting* extinction. Therefore, it is necessary to explore the diversify of the stamp *canting* functions to increase its economic value by introducing and popularizing it to the public. The main target is to increase the interest in becoming batik stamp canting craftsmen.

2. Method

The problem-solving approach which is used, is a design approach by utilizing the modeling method as a reference for making prototypes. The criteria and demands that must be provide by raw materials as interior materials can be met by stamp *canting* which is made of copper. However, to obtain new materials, it is necessary to conduct experiments to combine other materials and stamp *canting* as the basic material. Experimental research aims to reveal causation between two or more variables; through experiments by manipulating or changing the value of the independent variable to observe the effect on the dependent variable, in a controlled setting that is free from the interference of variables outside the research focus (Groat and Wang 2002). Basically experiments are suitable for researching the character of objects. The research begins with grouping a context and identifying variables that can be moved and both action are a part of experimental testing using causal factors. The experimental method in this study aims to produce interior material prototypes which are appropriate to market conditions.

For the development of the stamp *canting* function, the initial step which was taken is to identify the character of the objects in the research area. After the data is collected and identified, it is followed by an analysis process which consists of two parts. The first part is the analysis of the character of the material. The second part analyzes the interior material requirements for interior visual appearance. To produce the alternative, it is necessary to utilize the modeling method. The experimental process through modeling uses Computer-Aided Design (CAD). The stages of modeling using CAD are expected to produce 2D and 3D designs digitally. This is done to reduce costs, because the visualization of modeling using CAD is now close to real conditions. After a model has been created digitally, the next step is making a prototype before mass production (Fig. 1).

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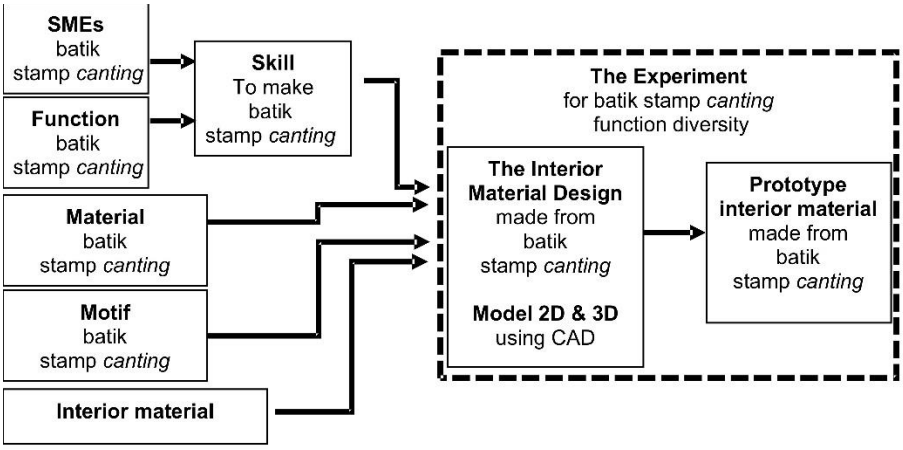

Fig. 1. Framework of batik stamp *canting* function diversity

3. Results and Discussion

3.1. Batik Stamp *Canting*

The skill of making stamp *canting* batik from copper in Surakarta has difficulty regenerating. Batik stamp *canting* is a work of cultural art that has value to be preserved. The process of making a stamp *canting* requires expertise and skills to assemble copper plates into a single unit of intricate. The time-consuming to make the ornamental motifs is took time. The process of making one stamp *canting* can take two days to one week depending on the complexity of the motif and the size of the cooper plate. The steps for making batik stamped *canting* in Agus Sunarto's home industry in Premulung-Sondakan, Laweyan, Surakarta can be seen in Fig. 2. The first step is to design the motif with a scale of 1:1. After the pattern is available, the craftsmen begin to cut the copper plates and then assemble them according to the pattern. The object that is made consists of a *klowongan* or outline, namely the shape of the motif, *isen* or fillers in the *klowongan*, *ancak-ancak* or dam in the form of a frame that serves as the basis for placing the object forming the motif. After the *klowongan* with the *isen* is ready, the next step is to string it in *ancak-ancak* and then tie it using solder, equipped with a handle and then drying it in the sun. The purpose of drying is to dry the solder. In order for the stamp *canting* assembly to be strong, it needs a short heating process using a fire. For the final stage, the stamp *canting* is boiled and cast with *gondorukem* wax (colophonium resin). By rubbed vigorously, the copper material from the stamp *canting* will look shiny and the appearance have aesthetic value. The scrubbing treatment can be carried out when the copper strings that make up the stamp *canting* forms a solid object by casting using *gondorukem* wax.

Copper as the main raw material for stamp canting has advantages and disadvantages that must be considered if it has to be combined with other materials. Similar to other metals, copper has physical and chemical character. Pure reddish yellow copper is a soft metal, therefore it is malleable and easily formed into sheets, pipes and wire (Michel 2013; Commodities and Export Projections Division Economic Analysis and Projections Department 1981; Lusty and Hannis 2009). Copper which is used as a conductor of electricity is widely used in a state of high purity level up to 99.9% because it has the second highest thermal and electrical conductivity properties after silver. The physical property of copper is its resistance to atmospheric corrosion and various other corrosion media attacks. Another advantage of copper is that it is soft, easily molded as needed into plates, cylinders or wire. Copper is very easy to join by brazing, firing, and welding. From the chemical and physical character of copper, it is possible to combine it with other materials.

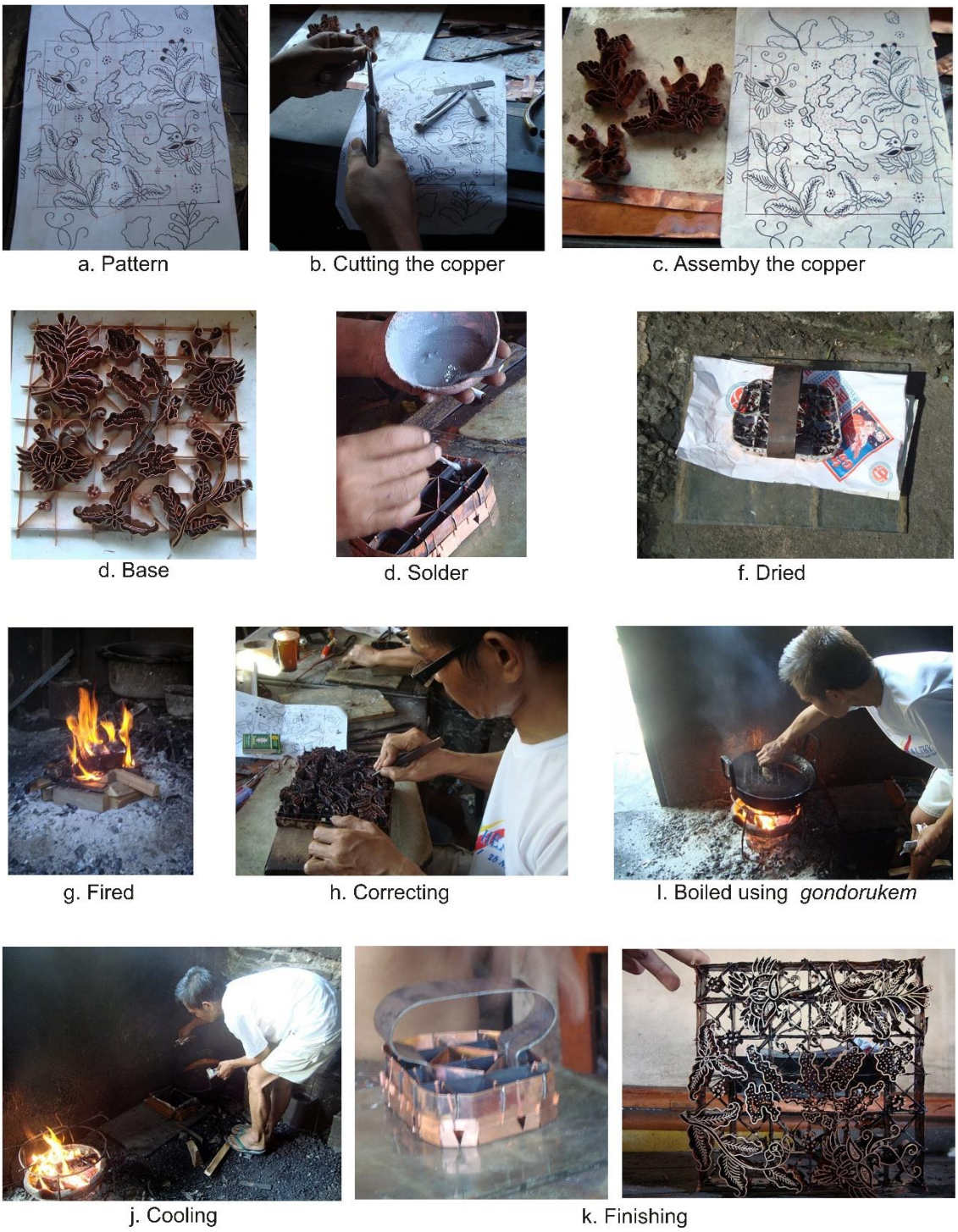

Fig. 2. The making of batik stamp *canting*

From the discussions with stamp *canting* craftsmen, copper material is the most appropriate material for batik stamp *canting*. Experiments to replace the copper material with other materials have been carried out. When the researchers conducted material experiments using aluminum, the results for stamped batik were not optimal. Aluminum was chosen as a substitute for copper with the consideration that the price of the material is cheaper than copper and is widely available in the market. The second reason is that with the same size the volume weight of aluminum is smaller than copper. This step still encounters problems. The binder solder melts and comes off during firing so that the stamp *canting* do not stick together.

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3.2. Batik Stamp *Canting* as An Interior Material

Architecture is made to accommodate activities. Therefore there are three important aspects as requirements that must be met, namely function, aesthetics and strength. These three aspects are physically embodied in the building through various space-forming elements, systems and arrangements that become a unified order (Ching 2000). Space forming consists of walls, floors and ceilings that can be recognized because they have visual characteristics which are built by dimensions, color, texture and shape. In addition to fulfilling the psychic needs that are enjoyed through visual appearance, space also conveys an atmosphere message conveyed by its constituent elements through interior materials.

The interior and layout of the building cannot be separated from the materials that make up its elements. The selection of interior elements is based on analysis to support functions with ergonomics and anthropometric considerations. The decisions must take into account the needs of the user, type of activity and location. In addition to ergonomics and anthropometric considerations, one of the bases for choosing interior material is the decoration aspect according to the theme or style which is also based on the needs and demands of the activity.

When creating decorative elements, designers will give attention to color, texture and shape. Finishing is also an important in the production and design process (Sumarno and Prasetyo 2021). The atmosphere that is interpreted will depend on the combination of the three aspects mentioned above. The task facing the designer is to explore materials in all component parts. A successful interior element is a reflection of a concept and can convey an atmosphere from the combination of textures, shapes and colors of the materials used.

Copper as the main material for stamp *canting* has advantages and disadvantages related to its chemical and physical properties. From these conditions, the character of copper must be considered if it has to be combined with other materials. The easiest is the exploration of materials commonly used by the community. Materials from natural source such as stone, wood and soil have proven to be timeless. Many efforts have been made by humans to be able to use a natural materials. However, there are several obstacles, namely limited resources. The high cost of maintenance is the cause and push people to look for other alternatives to be used as interior materials. Metal materials are often used to support the style which applied in the interior design. Metal has characteristic and advantages over other materials in terms of strength. The interior designers can exploit these advantages. Metal can support a modern or vintage vibe and exemplify the strength of a structure. Even though the basic properties of metal are massive, with special treatment, metal materials can be processed into decorative elements.

The method that can be used to produce the desired atmosphere is the exploration of interior expression through processing and combining materials. However, consideration of function, technical requirements and material efficiency and fabrication modules must also be considered. One way that is commonly used to create interior materials is old materials meet new. Henderson and Clark (1990) divide innovation into four models, namely radical innovation, incremental innovation, architectural innovation, and modular innovation. 'Radical innovation is establishing a new dominant design i.e. a new set of core design concepts embodied in components linked together in a new architecture. Additional innovations are refining and extending established designs. Improvements occur with individual components, but the underlying core design concepts, and the relationships between components, remain the same. The third is architectural innovation, namely innovation that only changes the relationship between components. Modular innovations are innovations that only change the core design concept of a technology (Henderson et al. 2020).'

3.3. Design Strategy

Selected motifs that have the potential to be developed are motifs that can highlight or expose the uniqueness of copper material. One thing to note is that motifs cannot only be outlines or dots. From the results of observations and data classification, it was found that the proportion and composition of the motif will produce a strong copper character if it has thickness and filling. As a consequence of these demands, the required volume of copper and the final weight of the batik stamp became a burden.

Visual appearance is the most tangible element and can be seen, held and touched by humans. Patterns from the typology of shapes and decorations on the batik stamp *canting* are explored to be developed.

Motives and decorations are divided into three groups, namely *ceplok* and *nitik*, *parang* and *lereng*, and *lung-lungan*. The reddish yellow copper material and color are the unique characteristics of batik stamps *canting*. The design considers visual appropriateness to generate clarity and provide emotional connection. The basic patterns used to design wall materials, windows, doors, ceilings, and furniture are taken from the mapping of shapes and ornaments (Figs. 3 &.4). The basic consideration is, there is a pattern continuity on batik motifs. Following are the basic shapes that have a special characteristics and uniqueness which was use in the stamp *canting* in the study area.

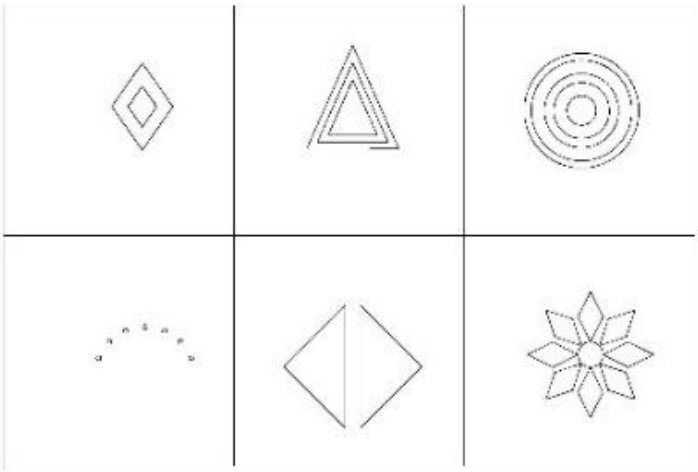

Fig. 3. Geometris motif
Sulistyani & Putri Laksmi, 2013

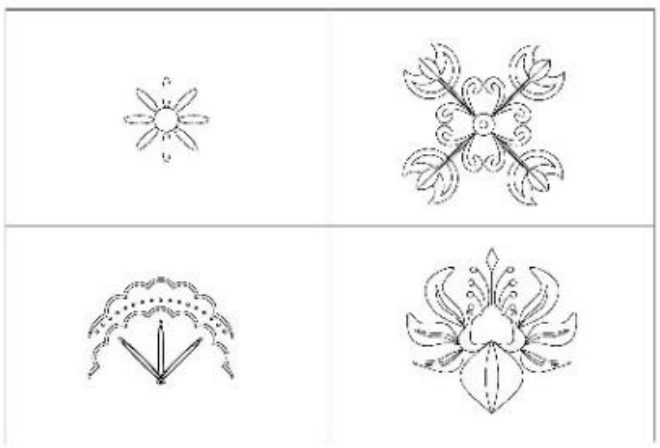

Fig. 4. Non geometris motif (flora)
Sulistyani & Putri Laksmi, 2013

The main thing that must be considered in making interior materials with the basic material of stamp *canting* is the construction aspect. Connections or joining systems of different materials must receive attention. The target is not only the strength but also the safety. To make an interior materials, standard sizes or commonly called modules are needed. The basic considerations used to determine the module are the efficiency of fabricated materials, ease of installation, maintenance and construction strength. The use of space standards and assumptions to meet space requirements is an important aspect which need attention. From the existing conditions, the fabrication material sizes are 1200mm, 2400mm, 6000mm. The size of the elements is obtained by calculating the needs of the existing conditions, so the modules used are (0.30x0.60) m^2, (0.40x0.80) and (0.60x1.20) m^2 (Fig. 5).

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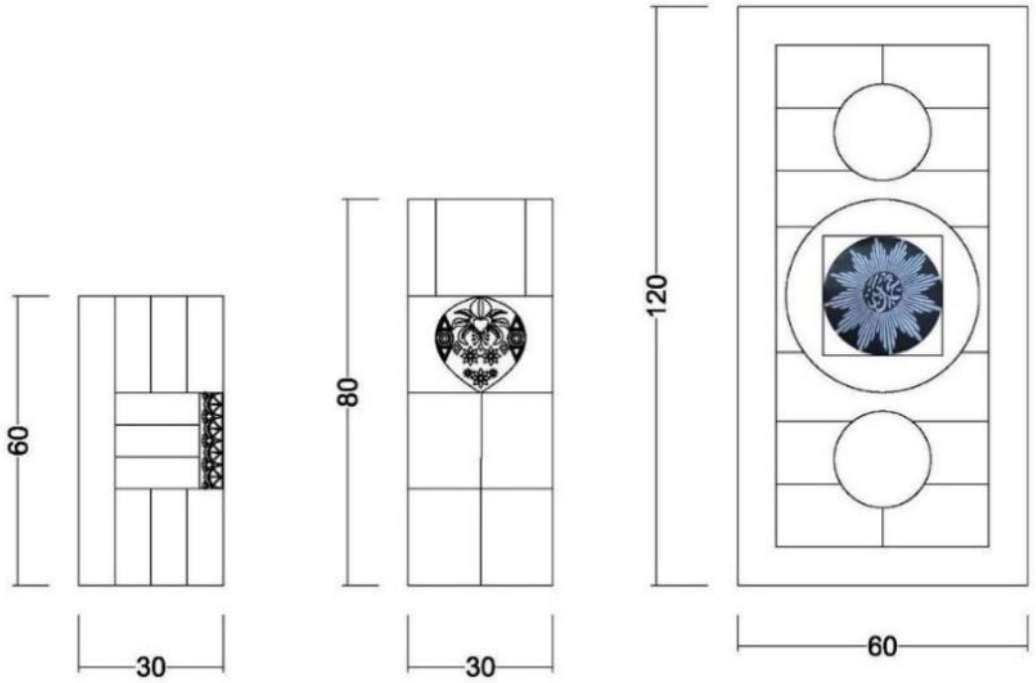

Fig. 5. Modul of interior material
Sulistyani & Putri Laksmi, 2013

Interior material innovation is carried out with additional innovation strategies by increasing the value of new materials but the core design concept remains the same (Henderson and Clark 2015). The frame must be selected with consideration of the construction and the visual aspect. The character of the frame must be considered because there is a possibility that the material cannot be combined with copper as the main source of stamp *canting*. To achieved the modular aspect, the design process should consider and pay attention to the frame size. Material efficiency is the main priority and will be obtained by following the size of fabricated materials. The merging failures can be caused by chemical and physical of the material character, but failures can also occur if patterns, colors and textures do not support each other. Additional innovation simulations are carried out by modeling using CAD hence the targeted design is achieved (Fig. 6).

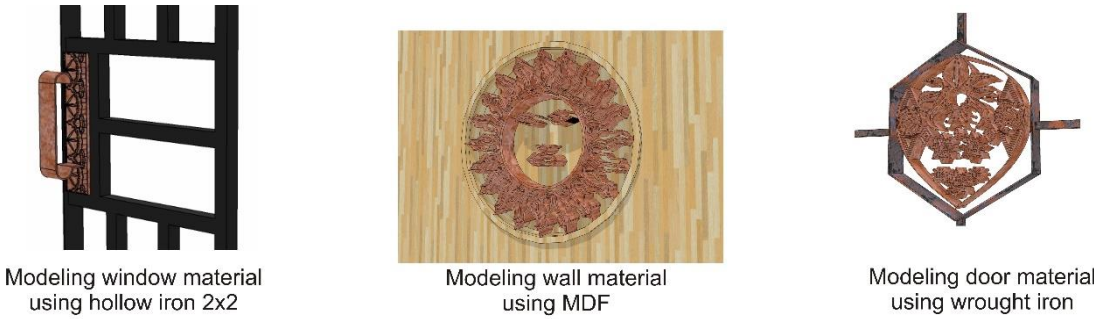

Fig. 6. Model 3D interior material using stamp *canting*
Sulistyani & Putri Laksmi, 2013

3.4. The Interior Material Prototype made from Batik Stamp *Canting*

The final target of this research is developing a prototype (Fig. 7). In accordance with the meaning of the word pro.to.ti.pe from KBBI, namely [n] the original model which serves as an example; standard sample; typical example (Badan Pengembangan dan Pembinaan Bahasa 2016). The prototype is made based on the modeling that has been designed. The resulting prototype module has high flexibility so that it can be applied to several kinds of elements.

Prototype interior material using stamp *canting* and hollow iron

Prototype interior material using stamp *canting* and mdf

Prototype interior material using stamp *canting* wrough iron

Fig. 7. Prototype interior material using stamp *canting*
Sulistyani & Putri Laksmi, 2013

The interior material which is made from combining batik stamp *canting* with hollow iron has a specialty in strength. Hollow iron is easy to shape and connect by welding. The finishing is using iron paint. The shiny or glossy character of the iron paint is in harmony with the rubbed copper of the batik stamp *canting*. Dark paint is the choice to contrast with the copper color.

Except hollow iron, other metal material is also used in the experiment to carried out the development opportunities. Wrought iron is an option because the visual of the object has a matching character when paired with copper material. The construction strength is equal to the strength of hollow iron.

MDF has advantages compared to other processed wood. The availability of various thickness variations greatly supports prototyping experiments. Due to the MDF is not strong enough to hold nails, the materials are joined using screws and glue.

4. Conclusion

The interior has a function as a container for human activities and can be enjoyed visually. Interior elements are used and processed to improve the quality of life by empowering the surrounding resources. The use of technology and materials for interiors still has great opportunities to be developed. Humans have the knowledge and opportunity to manage natural and synthetic materials to be directed to protect human existence and the environment and its resources. Selection of shape and optimization of materials can provide alternative material choices for interiors.

The efforts to get the function diversify of batik stamp *canting* into interior materials can be realized using experimental research to produce a prototype. The economic value will increase when the interior material from the stamp *canting* is used by the community. The demand for batik stamp *canting* will increase to meet the needs for interior materials. With the increasing demand for stamp *canting*, the quantity production will increase. The increasing production will push the wages of craftsmen hence the job opportunities arise due to the demand.

The interior material prototype for stamp *canting* still has to be tested for its strength and economic value. Even so, from the prototype that was successfully made, it can be proven that there is potential for batik stamps canting to develop their functions. The prices and the time consume to make interior material need a further research. The development of the stamp *canting* industry requires cooperation from several parties. Stamp *canting* production activities involve a lot of labor as a consequence of activities that produce hand made products. This condition has consequences for the lack of precision aspects and difficulties for standardization because it relies on expertise and manual skills. However, this condition is good for encouraging competition.

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