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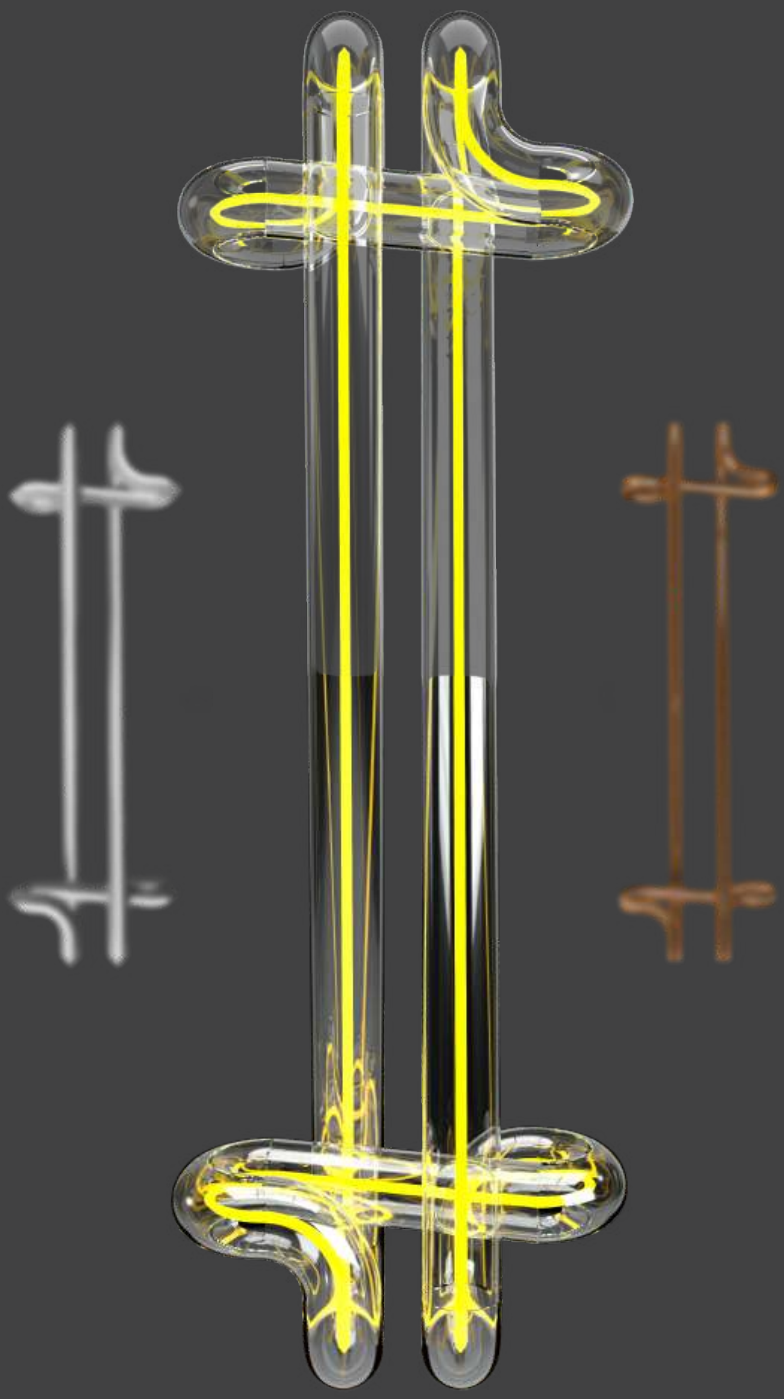
The 11th International
Arts and Design Symposium 2023



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by Council of Arts and Design Deans of Thailand (CADDT) and The Association of Siamese Architects under the Royal Patronage (ASA) together with the Faculty of Digital Arts, College of Design and the Faculty of Architecture Rangsit University.

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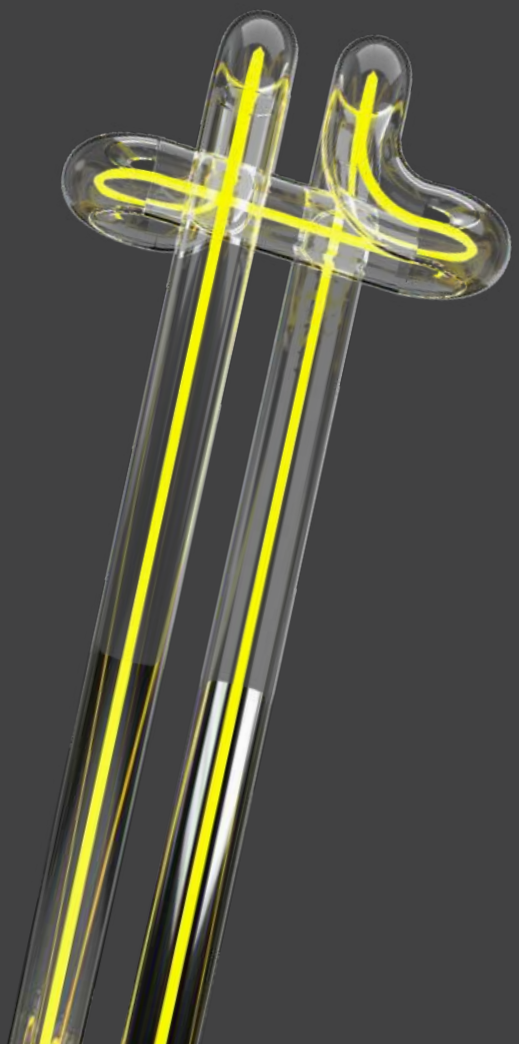

Factory Waste Polyester : Study and analysis into Home Decorative Item Design

Mr. Patipat Chaiwitesh

Introduction :

Plastic be the cause of environmental problems.

As often we heard and seen the most of this plastic waste impact to the nature in many ways even to on ground and in water animals or to human as the producers, users and also people who make the good plastic to be the useless waste in the shorter time as it shouldn't be due to their lacking off the reality knowledge of using the extravagant resources be the significant cause that bringing the waste problems in plastic environment leading to the cause of environmental problems to Thai people who use plastic as the most of 7,000 millions pieces per year and taking plastic producing per year about 1.03 millions ton by the half of its become the end of its cycling life by being the waste in sea hence causing Thailand be the producing plastic waste as the most in top of the 6th country rank in the world.

Above problem leading Industrial factories start realization in these points also nowadays trendy to start focusing the important of environmentally friendly products as the most hence getting the new technologies to support in upcycling these plastic wastes for return back using especially polyester plastic bottles or used drinking bottles that can take into recycle process through the classification setting and pass cleaning for the upcycling process. Polyester can be melted by heat until become the liquid polymer after that injected with a spinner rate machine for getting various types of fiber to woven the cloth of strong, soft and durable qualities as getting the new polyester production. These qualities making PET plastic bottles become the role play in trend of sustainability business handling of all organizations and be the new starting of creating products from plastic bottles of various brands.

However, taking recycle polyester cloth to the processing we can't avoid it's bringing a lot of wastes after processing by the case study in using every roll of cloth producing, getting the rages of size 70 x 200 centimeters by in Industrial manufacturing will get the huge of these rages which the producers don't want to litter these rages by the other way they want to seek the solution by taking the design to handle for getting value adding on these waste rages as the most. In this studying be finding the way and possibility to taking technology in recycle polyester rages processing that be left over from the normal producing in order to be the home products through designing process for reducing the quantity of wastes from production and to value adding rages by upcycling after that taking the marketing test by placing as the new products position relating to the recently trend that giving the important of sustainability under the creative economy concept. These be the leading model in household development products and the future of home decorative item design that be the most valuable material usage.

Objectives:

1. To study Factory Waste Polyester.
2. To created Home Decorative Item from Factory Waste Polyester.
3. To present New Decorative Item and market test.

Process or Concept / Methodology:

In this present, environmental problems be the importance problem occurring to our nowadays world including the climatic and topographic changes. Researcher must more search for the solution that takes more into account sustainability in designing residence, consumables and Home Decorative Item under the trend of using recycle materials and or taking reuse again that become the more popularity in nowadays. By in this studying aim to extend the life cycle of the sector in fiber Recycle Polyester the rest from production can be recycled using in order to design the creativity products that be suitable for a rapidly changing world.

From the studying the quantity of fiber rages of Recycle Polyester that be rest from production in Industrial factories found that would get the huge of left rages from each production that almost of its be not the big pieces causing limitations in design which breaks this limitation, designer will take technology in helping the processing.

By this design, researcher want to take material to design in the type of Home Decorative Item due to designer has worked about object designing and found the marketing gap that never have anyone take this type of material to design like designer will design in this time coupled with factory that use these materials almost be the factories that produce utensils and home decorations which will make this design can be tested the directly market through factory storefront shop.

By designing thought aims to design as the modular design that will create the designing in unit of the same pieces which will be the easier in production and can break the limitation of the material sizes, which designing this product, designer want the consumers can take in part of designing also. Then designer plans to place the position in market as the small pieces in order that they can assemble the parts to be their Home Decorative Item which be properly suitable for their individual houses by themselves without any limitations and designer will go on studying about the shapes of each unit in the next process.

Material and tool:

The first point, designing Home Decorative Item with fabric constituents or also known as textile housing Which is related to the physical properties of the suitable fabric in production in accordance with human needs, for the fabric that can be reality using in most designs would be Synthetic fabric that is resistant to touch by this studying we would take the experiment of Synthetic fabric from PET bottle recycle that was using in textile housing Industry as increasing and causing the problem of getting the most of Residual waste from mass production.

The second point, designer want to design Home Decorative Item that be different from others products available in the market by analyze suitable shape and function in processing and combining materials with technology for presenting the new innovation products to the market of these types of products.

The Last point, the quality of Synthetic fabric from PET bottle recycle have the different quality from the others general fabric that could use heat to cut for creating the new innovation products by without any sewing.

1. Material

1.1. Fabric left over from curtain production as the type of roller blind . By most of the fabric left over from the production of the curtain as the type of roller blind would be wide of 70 cm and have length 1 m.-1.50 m. which is too small to be used in the Industrial Factory production.

2. Tools

2.1. Cloth cutting knife.

2.2. Laser cut machine.

2.3. Computer

3. Experiment

3.1. The experiment and practice: The experiment and practice show cloth cutting trial comparing the cuts between using cloth cutting knife and using laser cut machine due to fabrics to be used in curtain production as the type of roller blind rather, it has a hardness similar to paper, hence make designer must

It can be seen that the use of the blade if the area to be cut is too small will cause the fabric to fade and torn apart due to the contact area of the twine is less causing the fabric fibers not to adhere.

It can be seen that cutting with a laser cut machine with heat will make the fiber getting from PET bottle recycle melts and connects with other twine into the body this makes it possible to cut smaller shapes without breaking apart.

Design:

Researcher want to test the limitation of fabric by designing the cutting shapes from natural by designing into the Partition that use to decorate the house, which is usually according to most of the market will be Partition that look simple, there is a structure to help you set up or hang but due to the limitation of the fabric that is small , researcher solve problems by designing natural shapes as the type of unit by taking the interconnection system through the principle of Auto lock in designing.

By researcher choose the using of Auto Lock in shape of n and u with opposite characteristics in designing. That researcher has been experimented with placing them into natural shapes designing as in the pictures.

After the ready line layout placing, researcher will take the cutting experiment by laser cut machine, that from the above cutting experiment expected to be able to cut the fabric as the type of roller blind which is small shape without making the workpiece fall apart.

Cutting by Laser cut machine make the edge of fabric that was produced from PET bottle recycle can melt and connect to be the small workpiece then researcher start the designing partition with the idea of modular design in designing for the easier in the reality production to sell in the future and can work with the small rages without the need for a After getting the desire pattern, then taking the reality trial production by using laser cut machine in the later to take installing as per the already designing.

Techniques and Materials:

This research aimed to create a model of making Home Decorative Item from rag of Recycle Polyester left in manufacturing. The related literature and studies divided into 3 parts, the 1st part concerning to the innovation of recycle fiber from PET bottles for getting the quality and how to take processing waste materials in other material industry. The 2nd part focusing to case study in processing waste materials as Industrial fabrics from factories which would be helpful to others researchers who study the types and develop the concepts and process creating Home Decorative Item from waste materials. The last part concerning to designing thoughts data of Home Decorative Item for studying the suitability and beauty of Home Decorative Item and taking data to apply in the supporting the basic creation of Home Decorative Item with the most of suitability and effectiveness. In this studying be searching the ways and possibility in using technology to the processing fabrics rages from recycle polyester that be left from productions to be the Home Decorative products Item through the designing management in order to reduce the amount of waste from manufacturing and to add value of the waste materials.

1. Innovation of Recycle Fiber from PET Bottles.
2. Home Decorative Products Item from Recycle Material in the designing fields
3. Designing Thoughts of Home Decorative Item




Conclusion:

From the installing experiment, designer think that this piece can be developed to be the others products due to the using the principle of modular design making workpieces can change shape and can modify the shape as the desired target audiences that can make these workpieces be able to build on being the Home Decorative Product Items from fabric rages in variety functions

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