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Design and Development of Women Winter Wear by Recycling Polyethylene Cover

[1] Kajal Jaize, [2] Ms. Nagaveni K
[1] Student,[2] Supervisor
[1] Department of Fashion Design,
[1] M.S. Ramaiah University of Applied Science, Bangalore, India

Abstract : This project presents a comprehensive analysis of the design and development of winter wear for women by recycling polyethylene covers. Polyethylene covers, commonly used in packaging, pose significant environmental challenges due to their non-biodegradable nature, contributing to pollution and harming wildlife. Recycling polyethylene covers into garments offers a promising solution to mitigate environmental impact and promote sustainability in the fashion industry. Transforming polyethylene covers through fusing into garments exemplifies a creative approach to sustainable fashion.

This research contributes to the existing body of knowledge on winter wear for women by recycling polyethylene covers and serves as a foundation for future studies in this area. Additionally, this project highlights the importance of public awareness to address the identified issues. It signifies a collective effort to delve deep into the complexities of designing winter wear by recycling polyethylene covers and offers meaningful contributions to the academic and practical understanding of this field. The project hopes that its findings will inspire further exploration and initiatives aimed at effectively managing polyethylene cover waste.

IndexTerms **- Fusing, Recycling, Sustainable fashion, polyethylene waste, Waste management, Winter wear**

I. INTRODUCTION

Efforts to incorporate polyethylene cover recycling into waste management strategies within the fashion industry are gaining momentum. By actively engaging in polyethylene cover recycling initiatives, stakeholders can significantly diminish the sector's ecological footprint and advance towards a more sustainable and circular economy model.

The proactive integration of polyethylene cover recycling initiatives into waste management practices within the fashion industry represents a pivotal step towards mitigating environmental impacts and fostering a more sustainable production paradigm.

Incorporating comprehensive polyethylene cover recycling strategies into the fabric waste management framework of the fashion industry is imperative for minimizing environmental harm and advancing toward a more eco-conscious manufacturing ethos.

II. REVIEW OF LITERATURE

Plastic, in its numerous forms, is deeply ingrained in modern society, serving a multitude of purposes from everyday items like grocery bags to high-tech industrial applications. While plastic offers undeniable conveniences and innovations, its durability and resistance to biodegradation present significant environmental challenges due to the staggering amount of plastic waste generated worldwide.

Polyethylene, the most prevalent type of plastic, exemplifies this issue, with a production of approximately 60 million tons annually. However, efforts to address plastic waste, particularly polyethylene, have gained momentum, with a focus on recycling to mitigate its environmental impact. Before delving into recycling, it's essential to understand polyethylene and its common applications.

Polyethylene comes in various forms, with low-density polyethylene (LDPE) and high-density polyethylene (HDPE) being the most widespread.

III. METHODOLOGY

A. Ethnography study

During the survey on waste in shops and households, meticulously planned each step for comprehensive data collection. Identified 15 shops and residential areas for a diverse sample. Initiated conversations with shop owners and homeowners, explaining the survey's purpose.

Collected detailed data on waste types, quantities, and disposal methods from shops and households. Surveyed residents on polyethylene cover usage, disposal habits, and recycling attitudes.

Maintained meticulous records throughout the survey process for accuracy. Analyzed findings to identify patterns and trends in waste generation and recycling.

Engaged with the community to raise awareness and discuss solutions. Compiled survey results into a report for stakeholders, informing policy and driving positive change toward polyethylene cover recycling.

B. Design Generation

Brainstorming is a valuable method for brainstorming innovative ideas and solutions for polyethylene cover recycling. It fosters open discussion and free thinking, enabling a group to explore various approaches without the fear of criticism. Is a key strategy in developing innovative methods for polyethylene cover recycling. It promotes open dialogue and creative thinking among participants, fostering the exploration of diverse ideas without fear of critique.

Brainstorming is an essential approach utilized in the endeavor of polyethylene cover recycling. It serves as a pivotal method for encouraging open dialogue and fostering creative ideation among participants, thereby facilitating the exploration of a broad spectrum of ideas without the inhibition of criticism or judgment.

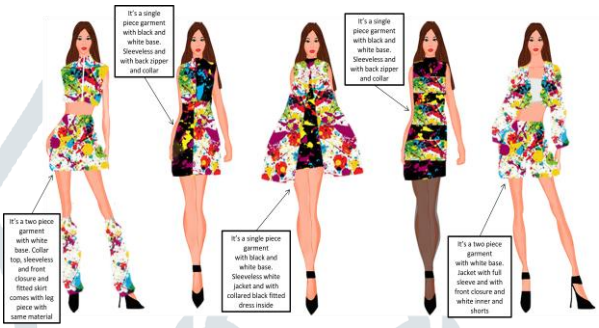

Fig No: 1- Design Concept

C. Sourcing

During the sourcing phase of waste polyethylene covers, extensive research was undertaken to comprehensively understand the intricate patterns of waste generation. This involved delving into various sources to glean insights into the dynamics of waste accumulation, ensuring a thorough grasp of the challenges at hand.

Following the research phase, a strategic approach was adopted to establish strategically positioned collection points, ensuring optimal accessibility and convenience for both residents and businesses. These collection points served as pivotal hubs for gathering discarded polyethylene covers, laying the foundation for subsequent processing and recycling efforts.

Once the covers were collected, meticulous sorting and processing procedures were implemented to prepare them for recycling. Each cover was carefully inspected, sorted, and cleaned as necessary to ensure the highest quality output in the recycling process. This attention to detail was crucial in maximizing the efficiency and effectiveness of the recycling initiatives.

D. Garment Construction

The method entails meticulously cutting polyethylene covers and recycled fabric into small, precise pieces. These pieces are then meticulously arranged, with polyethylene covers layered atop carbon paper, followed by carefully positioning square fabric pieces on each layer. After each layer, carbon paper is placed on top before ironing, ensuring proper adhesion. Once all layers are complete, vibrant polyethylene pieces are added to the final layer before repeating the ironing process.

Following this, intricate patterns are meticulously crafted over the sheet, ensuring precision and attention to detail. Subsequently, fabric lining is expertly stitched onto each pattern, providing structure and cohesion to the design. The recycled fabric is then carefully sandwiched into the sheet, seamlessly integrating it into the overall composition.

The quilting process is then meticulously undertaken, ensuring that each stitch is precise and secure, adding texture and dimension to the final product. Finally, the garment stitching phase commences, where the assembled materials are expertly crafted into wearable, functional pieces, completing the intricate and detailed process of transforming polyethylene covers and recycled fabric into finished garments.

E. Data Analysis

The rising significance of polyethylene recycling parallels a growing societal consciousness regarding the ecological repercussions of plastic waste. This heightened awareness is catalyzing a notable surge in enthusiasm for recycling initiatives tailored specifically to polyethylene, emblematic of a broader cultural transition towards sustainability. Through proactive engagement in polyethylene recycling endeavors, individuals are not only playing a role in mitigating plastic pollution but also cultivating a deeper sense of environmental stewardship. This collective effort holds the potential to instigate a fundamental shift in attitudes towards consumption and waste management, laying the groundwork for a more environmentally conscious and sustainable future for both current and forthcoming generations.

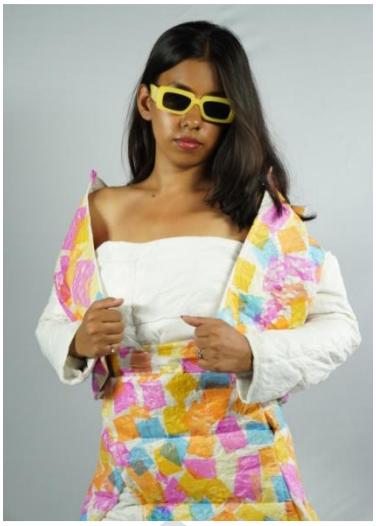

Fig No: 2- Jacket and Sleeve

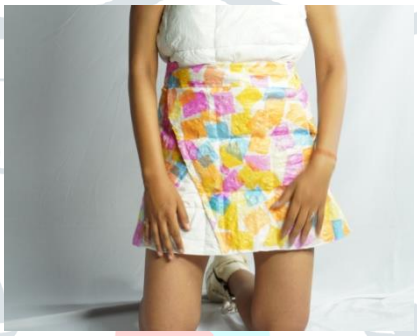

Fig No: 3- Skirt

IV. CONCLUSION

This project presents a comprehensive analysis of the design and development of winter wear for women through the recycling of polyethylene covers. By addressing the environmental impacts of these materials and proposing innovative methods for their reuse in fashion, this research contributes to the broader discourse on sustainable practices in the industry. The fusion of polyethylene covers into garments offers a creative solution to waste management and embodies a commitment to environmental stewardship.

Furthermore, this study underscores the importance of public awareness in addressing the challenges of plastic pollution and waste management. By raising awareness of the environmental implications of fashion consumption and promoting sustainable alternatives, we can foster a more conscious and responsible approach to clothing production and consumption.

Overall, this project represents a collaborative effort to explore the complexities of recycling polyethylene covers in the context of winter wear for women. Through its findings and recommendations, this paper aims to inspire further research and initiatives aimed at effectively reducing waste in the fashion industry while promoting environmental sustainability.

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