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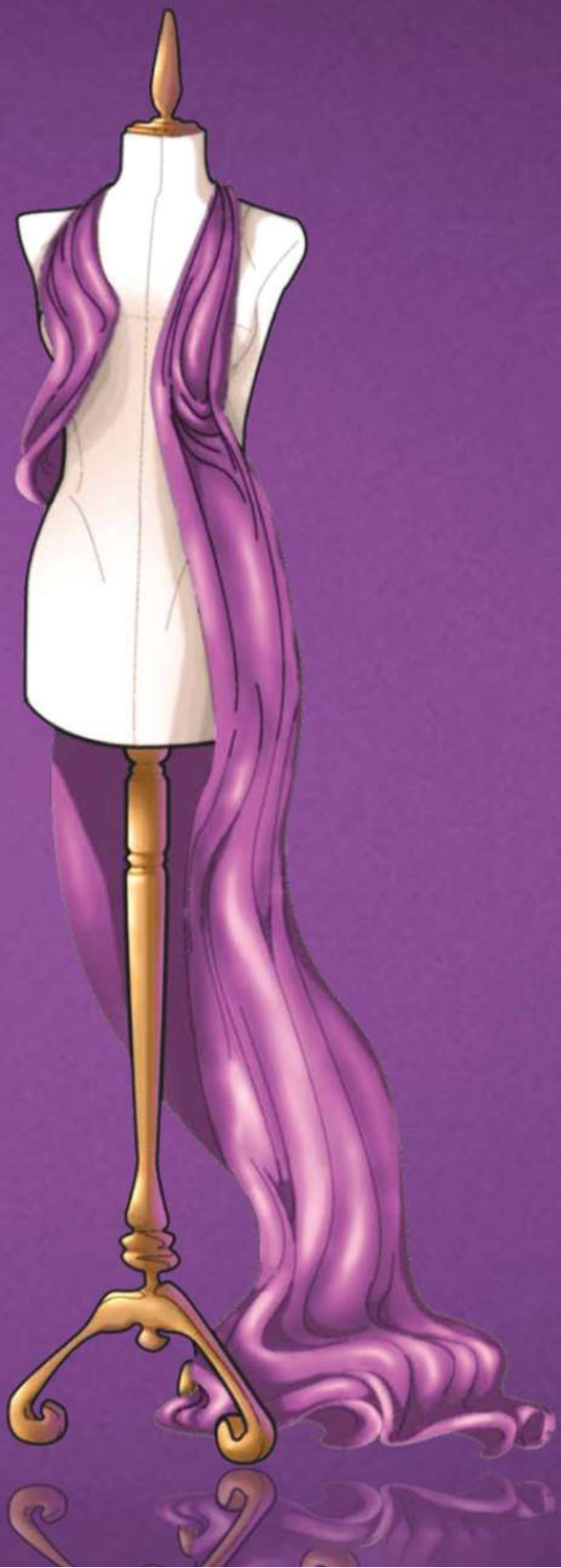
APPAREL TEXTILE AND FASHION DESIGN

26th MARCH - 2022

GREEN TEXTILE INDUSTRY 2022

DEPARTMENT OF COSTUME DESIGN AND FASHION



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LIST OF PAPERS

A STUDY ON PROBLEM OF HAND LOOM WEAVERS IN HANDLOOM WEAVING INDUSTRY

Elakkiya.D.K[1] ,Nithyashree.M[2] & Dr.K.M.Pachiyappan[3]
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ABSTRACT

In this paper, we have discussed about the problems faced by the handloom weavers. Hhandloom industry in India has being exceptionally known for the availability of different designs of fabrics and the manufacture of garments and dresses, which states as the job of millions of weavers utilizing in the handloom fragment in India. The result that reflects for handloom industry to be sustainable in the handloom weavers' market has to be eenlarged and categorized. In the state economy the handloom sector plays an vital role. The current study of the economy about the handloom sector is to find out the current hindrance faced by the weavers. The data we collected for this study is a secondary data. With the days passed, the face of this culture has vanished as a consequences due to the number of causes and worsen the conditions of handloom weavers in the economy. In this paper, we have weigh up the olden days to the present scenario and the schemes and initiatives taken by the government.

KEYWORDS: *Handloom, cottage industry, weavers, Marketing problems, Government initiatives & schemes.*

1. INTRODUCTION:

It is the ancient cottage industry of India. It becomes the employment source for millions of people. Handloom has a richest and vibrant aspect of Indian cultural heritage. Handloom requires less capital intensive, minimal use of power, eco-friendly.

2. PRESENT SCENARIO:

Is the 2nd largest employment activity performed after agricultural and it contributes around 14% share of the total production of textile industry. Over 125 countries are now buying handloom products from India. It is not only our past glory but also it plays a vital role in the context of present Indian economy. It has a deep root in the rich traditional, historical and cultural diversity of India. Products from these sectors are produced in different states of the country. EXAMPLES: munga silks of Assam, bedspreads and furnishing of Bihar, check shirting and bed sheets of Delhi, tie and dye cotton and silks saris of Odisha, etc.

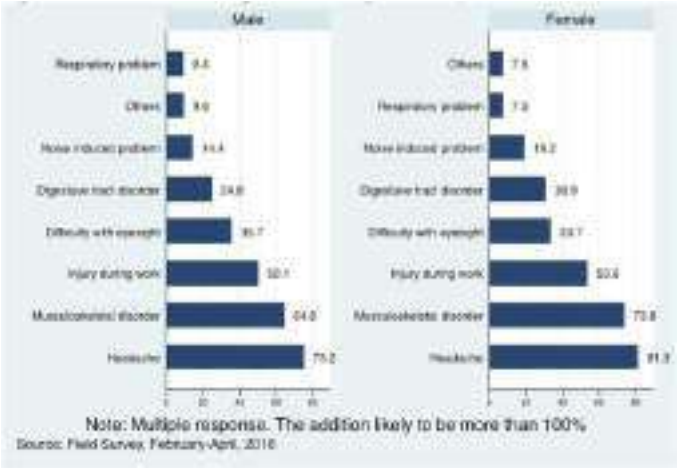
3. PROBLEMS FACED BY THE HANDLOOM INDUSTRY:

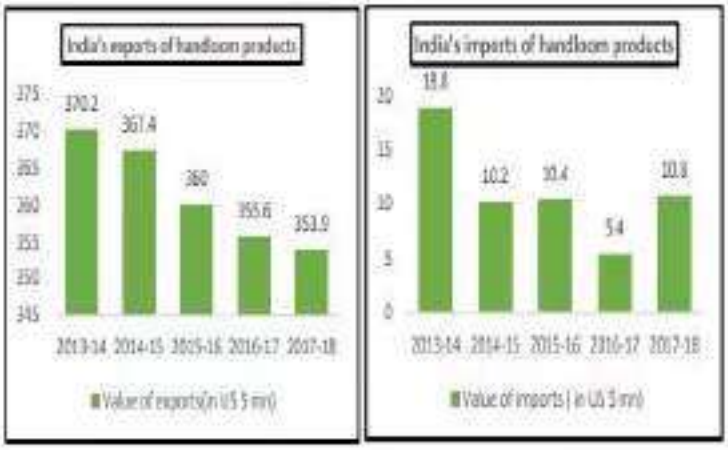
The current age of modernization and globalization has posed a number of challenges for the handloom industry in India. The issues of concern to this industry are: rising input costs, credit problem, marketing bottlenecks, lack of modernization, migration to other fields, poor infrastructure, inadequate research and development, lack of reliable data.

4. GOVERNMENT INITIATIVES:

To recognizing the socioeconomic importance of the handloom industry in the India's economy, policies should be formulated in such a manner that they benefit the disadvantaged sectors of the society on one hand and ensure the flourishing growth of the industry on the other

hand in and outside the country. Besides, states help and intervention, private participation, modern outlook and induction of younger generation is required too faster, sustainable and more inclusive growth of the handloom industry.





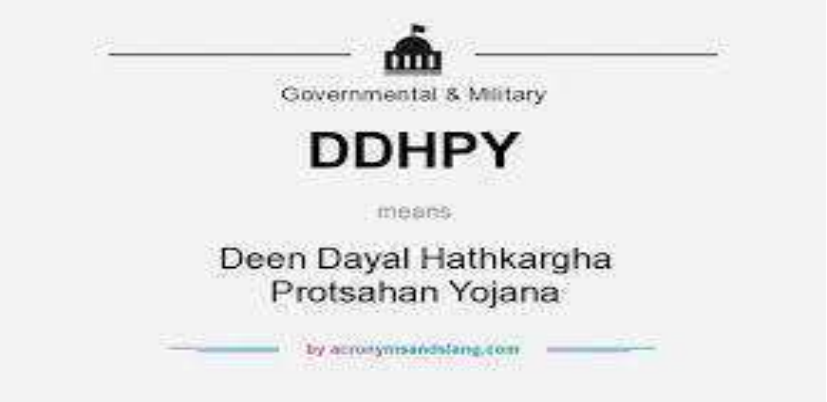
5. GOVERNMENT SCHEME:

DDHPY: DEEN DAYAL HATHKARGHA PROTSAHAN YOJNA

It was specially launched for the rich handloom sector of the country and undertakes things like development of products, supporting in the infrastructure and at the institutional level, training the weavers, supporting in technical and marketing terms, etc. Its takes care of this and many other things at both micro as well as macro levels and provides support to the weavers and their craft.

6. AIMS OF DDHPY:

Increasing the efficiency of these weavers so that they may meet the rising demands of their products in India and globally. To provide technical assistance and also support in several other aspects of their art which would channelize their creative energies into transforming their arts.



7 .CONCLUSION:

Handloom sector provides a innumerable amount of the employment opportunities to lakh and lakh of people who are recently started to face a lot of obstacles and has been thrust ahead the vanishing point of the product cycle. To put in power again, the above discussed problems as to be labeled well and sorted out.

8. REFERENCE:

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SUSTAINABLE FASHION IN OUR CURRENT WORLD TREND

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ABSTRACT

The fashion industry is one of today's most unsustainable global businesses. This thesis asks the question of how fashion designers can contribute to change the current paradigm. To answer this question I have studied the most recent research on sustainable fashion design and business. In addition, I have interviewed a broad range of successful sustainable fashion designers in order to get their perspectives on the trends that are occurring, their potential for contributing to radical change, and their views for the future. I first conclude that these small design-driven practices are insufficient for the radical change that the literature says must occur. I also conclude that the basis for a more extensive change to occur starts with fashion design education and consciousness. I add a proposal for a fashion design syllabus as an example of how education could become a pivotal marker for a paradigm shift. In sum, my research shows that society must change radically and collectively, with educators, fashion designers and business leaders working in unison to become part of the solution and not continue to be part of the problem.

Keywords: *Fashion, sustainability, future*

INTRODUCTION

The clothing and textile industry employs about 26.5 million people globally, mainly in Asia, while approximately 60 million workers are currently employed in the fashion industry (Organization, 2012). Clothing and textiles represent about 7% of world exports, with China in the lead (WBCSD, 2008). Consumers around the globe spend at least $1 trillion dollars yearly on clothes (Allwood et al., 2006). The use of energy and toxic chemicals in textile and clothing production contributes to climate change by burning fossil fuel for electricity used for heating water, air in laundering, and agricultural machinery. In addition to the environmental damage, many concerns involve job quality and their social consequences. Children and women have been reported to suffer from precarious working conditions, unjust salaries, and sexual harassment (Allwood et al., 2006). Thus, production processes have grown to mean harmful practices and unethical conditions for workers that make inexpensive throw away garments for the end consumer as suggested by Niinimäki (2011) as a throwaway society. This situation has been described Rao Raghunathan, and Vonderembse (1997) as the paradigm of a post-industrial environment characterized by global competition, rapid market change, and shorter product life-cycles. Oshry (2012) defined it as cheap manufacturing for a self-centered consumer. The fashion industry faces an enormous set of problems linked through design, education, business and social practices. This web of challenges could be described as a problématique, implying that a new paradigm can only be achieved by addressing the collective

Fig 1

Entanglement of problems.2 Or as Ken Bausch (1970, p.12) has stated: "It is the nature of our languages, hence our manner of perceiving reality, that we see and call the dissonant elements in a situation". To approach this daunting situation I have studied the literature on sustainable fashion design and looked at the trends coming from small, positive, conscientious developments because the research suggests that great improvements are being seeded through these small, collective technological and social innovations. Fletcher (2008) proposed that fashion sustainability problems are best addressed at the local level and that a 'something different' paradigm originates from local resourceful techniques and skills developed for incremental change in fashion and textiles. In agreement with this position, I present some of the trends at the local level that the fashion industry may look towards in order for radical changes to occur. These problems and their inter connectedness have generally been addressed linearly and separately, but a sustainable approach seeks to apply a more systematic way of thinking (Fletcher and Grose, 2012). I agree with the researchers who view sustainable fashion as a whole. Niinimäki (2011) adds that in this holistic view, a systemic transformation must happen in both production and consumption in order for there to be an impact on the environment, society, and business practices. Consequently, it is the position of this thesis that the whole fashion cycle --or "fashion system"-- must be understood and addressed as a problématique.

RESEARCH METHOD

Research Method The research supporting this thesis was based on a thorough literature review based on sustainable fashion. In addition, I complemented the literature analysis with information based on a variety of experiences from successful fashion designers who are consciously promoting sustainable fashion practices. Though these interviews are only a small, perhaps unrepresentative sample of alternative fashion design practices occurring in the world today, the purpose was to engage in a form of a collective examination into how people understand and sort out their experiences in the world in which they live (Holloway, 1997). I used a simple, efficient, semi-structured interview approach for collecting data by using open-ended questions that allowed others to arise naturally (Marshall and Rossman, 2010). The interviewees were able to speak in detail and complex issues were talked over and discussed. I then used the interview findings as a way to understand or challenge the existing literature and the contextual review, case studies, and 'trends'. However, I am conscious of the fact that further research needs to be done, perhaps at the doctoral level, for these sample interviews to be conclusive. But for the purpose of this initial inquiry at the master's level I found the information resulting from the practice of these independent designers to be an important comparison and contrast to what I learned from the academic literature.

Trend

The word "trend" originally meant to "roll about, turn, and revolve" but has evolved into what the American Heritage Dictionary (2003) defines "a general direction in which something moves; as a current style or vogue". Closer to the purpose of this thesis, sociologist Vejlgaard (2008, p.8) has identified "trend" as: a process of change that starts by product development and results in new products or as a prediction of something that will happen in a specific way, with its first signals meaning a change may be about to occur. Trends are also characterized by what Blumer (1969, p.284) refers to as a "collective taste." In fashion, he identifies it as a collective behavior where: 1) People within the social sphere should be receptive to change 2) Models of new social form must be available for repetitive presentation 3) People should have the freedom to select among competing new models of social form 4) Prestige figures should be available, which in turn would make others follow. King (2007) defines a trend as a process of collective selection within social groups, where influential consumers exist at all social levels, calling it the "trickle across" effect. In today's world, a trend within fashion is something that passes and disappears from the consumer's vision and mindset. Moreover Martin (2010, p.14), defines trend as "…the direction in which something (and that something can be anything) tends to move and which has a consequential impact on the culture, society or business sector through which it moves." Nonetheless, sustainable practices as per Manzini (1994, p. 37) have "progressed from the agitated argumentation of a few scientists and environmentally conscious groups to become a theme, which permeates the entire society, influencing the orientation of both generalized trends and everyday decisions."

Fig 2

Sustainability

Sustainability as a term had surfaced during the 1970's but sustainable fashion as a trend came much later. Sparked by the environmental crisis there was a surged of anti-establishment companies in the late 1980's as Patagonia (1985) and Komodo (1988) that promoted ethical fashion, where it could be called as a beginning of a trend. But it was only until 2008 that sustainable fashion began appearing more consistently in news stories.8 Helen Job, editor of a leading trend forecasting service WGSN9 US, held a Rethinking Fashion series on sustainable fashion at Parsons New School for Design in 2007. She indicated she had been tracking the trend since 1999. Her trend forecast analysis included looking at eco-cities, home products, technology, and architecture. Now it became the classification of a trend working its way into a collective awareness of issues such as climate change, food, architecture, and home, with individuals seeking a healthier lifestyle (School, T.N., 2007). The sustainable fashion trends observed as the most significant are those, which reflect the need for a paradigm change. WGSN

reported on a variety of sustainable fashion trends from the consumer, to the production processes, to the material. Some of these trends were classified as: 1) Sustainable design in sportswear: Sustainable practices across the entire life cycle of a product have become more important to the sportswear industry 2) Responsible prosperity in luxury marketing: A new breed of consumer is demanding brands that are both luxurious and sustainable in order to justify their post-recession spend. For luxury marketers, responsible prosperity is becoming a powerful tool. 3) Denim sustainable finishing: Denim producers working hard to reduce their impact on the environment and to improve working conditions for those at the manufacturing front line, as the latest denim finishing developments show (Prahl, 2012)

Sustainable Design

Presently design must incorporate sustainable principles in order to work with in the natural world and not deplete even more the resources that we have left. As said by authors McDonough and Braungart in their manifesto (2002) "…when designers employ the intelligence of natural systems—the effectiveness of nutrient cycling, the abundance of the sun's energy—they can create products, industrial systems, buildings, even regional plans that allow nature and commerce to fruitfully co-exist." Sustainable design is often given other denominations, such as: "green," "environmentally friendly," "eco-conscious," "innovatively green," to name a few, where the meaning depends upon the context, situation, and social setting, as well as cultural, environmental, and financial impacts. On first instance, sustainable design aims at creating value by meeting the triple bottom line: economical, environmental and social-ethical benefits (Charter and Tischner, 2001). Sustainability (WCED 1987, p.41) defined as "…development that meets the needs of the present without compromising the ability of future generations to meet their own needs." When added to design, Manzini and Vezzoli (2008) agree that environmental requirements should be considered from the first stage of the design process, as well as cost, performance, legal, cultural and aesthetic requirements. The designer should work with preventive terms rather than end of pipe solutions (ibid.). Niinimäki and Hassi (2011) point out that the fashion industry has focused on technical and cost related aspects such as low price of a garment and increase efficiency in production, and not on sustainable issues. The concept of a 'sustainable product' is misguided because the impact any product has on the social and ecological environment 21 depends not only on the manufacturing, but also on its use (Stegall, 2006). Before design was based on producing more, each individual part was independent of the other affecting the whole ecosystem. Sustainable design considers a holistic, interdependent and interrelated process. Sustainability focuses on efficient and effective solutions that are better for society, the environment, and business (Shedroff and Lovins, 2009). Shedroff and Lovins (2009) argue design disciplines focuses on making meaningless, disposable, trend-laden fashion items, their attention diverted often by trends. A successful sustainable design follows careful criteria and considers responding to customers, users, participants, people, market, company, brand, environment, channel, culture, and materials (Shedroff and Lovins, 2009). A sustainable design is created for and about customers as people, not only as consumers. Consequently, the design has a healthy outcome for the whole ecosystem. It is imperative for designers to understand the bigger picture first before the creative process begins. Therefore, I see sustainable design as a process, which addresses a specific need and problem, combining different forefronts, not only through research but also by focusing on detailed questions. Problems of sustainability are complex and require collaboration from numerous experts in diverse fields working within a

trans-disciplinary approach. Designers have a responsibility to be involved in the whole process from creation to product, by adopting life-cycle solutions, which diminishes the environmental impact. Conscious decisions on where, how, when, and who will produce the product adhere to sustainable design principles. A challenge is not to fall into the pattern of creating another "green, eco-friendly" product.

Fashion

The origins of term fashion can be traced to the 14th century where it was noted by the introduction of innovations in hairstyles, footwear and especially dress styles (Newton, 1980). A distinction between the sexes was established and clothing transformed from being loose draped to form fitted (Newton, 1980). The insertion to these innovations by adoption of fastening secured with buttons evolved to cyclical changes in taste in clothing in Europe (Belfanti, 2010). "The coming of fashion created a new world, in which a passion for novelty combined with rapid changes in taste, interrupted a tradition of wellestablished habits in ways of dressing and the significance attributed to clothing" (Belfanti, 2010, p. 1). Several observers differentiate between clothing and fashion, where the first represents the functional, technical, and protective traits, where the second is perceived as symbolic, signifying and communicative (Bourdieu, 1984, Barthes, 1983, Busch, 2008, Kawamura, 2005). Otto Von Busch (2008) defines fashion design and the fashion industry as always having been a sign of exclusivity; but over the years in the developed world it has become more "democratic," with luxury as a necessary evil in people's lives (ibid). Rapid shifts in high number of collections create a racing pulse within the fashion industry, which exerts a greater influence on design disciplines than ever before. "Fashion is the process of becoming, of producing intensities of difference" (Busch 2008, p.34). As cited from Bourdieu (1984, p.133) "fashion is the latest fashion, the latest difference." This view has been supported in the work of Busch (2008). Fashion design as a discipline is one where clothing and accessories are designed either work as self-employed, or with individual clients, established brands catering to mass markets or higher end collections. A majority of fashion designers work for apparel manufacturers creating women's, men's, and/or children's fashion for a mainstream market. "Fashion often begins among those who are perceived to be trendsetters and these trends later spread to other groups" (Aspers 2005, p.16). A vision-oriented designer has the tools to bring radical solutions to fashion's negative impacts and fashion, a forward-looking discipline based on creativity, traditional practices, and artistic expression, has found solutions based on this principle in the past. Since the word fashion implies rapid change and (Belfanti 2009, p.261) "… represents a turning point in the history of human societies," in that it introduced to the social structure a new system of values, able to condition the behavior of the actors, both as regards individual choice, and strategies adopted by economic organizations (Lipovetsky, 1994) is adopted for the thesis. 2.6 Sustainable Fashion Sustainable fashion can enhance the physical, emotional, and psychological well-being of people (Welters, 2008). It is one of the main arguments of the practice, a unique opportunity to integrate a holistic approach towards work and life. The position is not new: since before, the industrial revolution consumers had to be thrifty, economical, and resourceful for their clothing and everyday needs (Welters, 2008). Clothes back then, kept as a dowry and inherited from generation to generation, created a sense of ownership and love for each piece.

"Sustainable fashion offers"a unique opportunity to integrate a holistic approach towards work and life." 23 People were sustainable without knowing, from a sense of need and

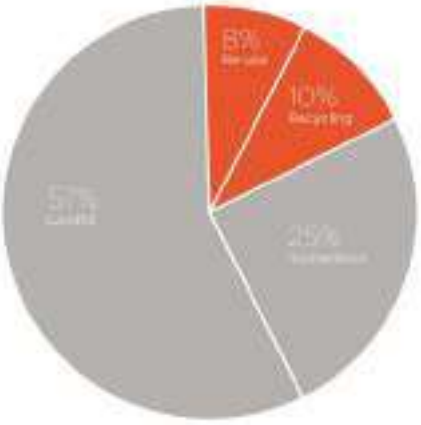
relation to things, people, and the environment (Welters, 2008). Sustainability is understood as harnessing resources ethically and responsibly without destroying social and ecological balance. Sustainable fashion has translated that understanding into choice and provenance of materials, fairer employment models, efficient processing techniques, empowering community projects, and greener design concepts (UNCTAD, 2008). According to Fletcher (2008) sustainable fashion means more efficient processes and adding 'something different' involving ethical change within a personal, social and institutional scope, comprising the following steps, which have an impact on the environment, society, and business practices: 1) Choice of fibers from their origins: vegetal, animal, mineral or synthetic 2) Manufacturing of yarns and fabrics 3) Dyeing and finishing fabrics 4) Cutting, sewing and finishing garments 5) Marketing and distribution of finished products 6) Consumer use and final disposal. Sustainable fashion looks at the whole cycle from the earth, to the final product, to the user and the behavioral pattern the clothes might create. The system's variables are proven sustainable or unsustainable. Experimentation is costly, but its absence can have enormous environmental and financial implications. When creating sustainable fashion, coming into collaboration is key, due to the involvedness of the practice. Therefore, clarity and transparency may shape and perpetuate ethical fashion. Producing healthier and more applicable solutions has many human and financial advantages A definition for ethical fashion is by Burak Cakmak, director of the CSR Gucci Group: "Creating desirable products, evoking an emotional connection with the customer and taking into consideration their impact, while being transparent about the process" (Ravasio, 2012). Sustainable fashion embraces three revolutionary ideas: to green the industrial machine processes; to repair social and business practices; and to create a new way of viewing and living fashion.

REVIEW OF LITERATURE

Further analysis was based on a literature review to understand and set the background of the thesis. The research was inclusive of many connected arguments, ideas and discourses. 136 references (books, journal articles, magazine and newspaper articles, reports, web pages, audiovisual material, and blogs) were classified by subject matter. The results suggest that although sustainable fashion and design is researched, studied and written about, designers and end consumers lack clarity and accessibility to the concept of sustainable fashion. Findings also indicate that designers rely on their own knowledge and act accordingly to their personal ethical belief system, where they are learning and creating along the process. Most research and advances have been done within other areas of design, and fashion is only now catching up with other disciplines. The outcomes suggest that the effect of sustainable fashion is yet to be seen. Further knowledge and information for designers, educators and consumers should be widely diffused. This review focuses on the most useful literature in terms of paradigm change. I will also show arguments related to sustainability and refer to the literature in education, best practices and business. Additionally I will express the ideas linked to concepts and definitions of sustainable design and fashion. I identified key aspects from impacts of the fashion industry through recent data. The literature reviewed addresses the concept of paradigm applied by sustainable fashion thinkers. Reflecting on society's mindset Meadows (2008) states paradigm as a set of beliefs about how the world functions. Meadows paradigm echoes her beliefs of a sustainable society. Fletcher (2008) supports the view set on sustainability as requiring something different, reflects upon Meadows beliefs.

Statistics report for past 5 years in Fashion Industry

Table 1



CONCLUSION

The order of the themes were done in reference to their importance and compiled and organized by elimination of unnecessary data. Nevertheless, it represents a small segment of sustainable fashion practices, therefore it is fair to say that it is a work in progress and has been addressed as such. Subsequently the topic's complexity and vastness makes it presumptuous to assume significant answers within this thesis. According to the majority of the interviewees, when rethinking fashion and moving towards working sustainably the evidence provided demonstrates that in order for a change of paradigm to happen global consensus must be reached. Consequently the interviewees are working towards this change within their communities. They agreed that sustainable fashion was a trend and that it was not sufficient to cause a mayor paradigm shift because sustainable fashion is yet to reach the mainstream. Nonetheless, the designers, educators, business entrepreneurs I interviewed have a passion for sustainability and it affects their lifestyles not only within their work but also in their daily lives. The results of the interviews are presented in the order of the six themes identified in the data analysis. The answers were placed together and are discussed in this section by presenting the findings in quotes.

Sustainable designers "The next industrial revolution has not been about returning to some idealized, preindustrial state in which, for example, all textiles are made from natural fibers" as per Jonathan Ive. As one of the many sustainable ways to meet the needs of consumers today, using only organic materials would not be possible.29 The demand would be too high, and resources would be depleted. For this reason, sustainable designers look at other possibilities to find and utilize ready-made materials and textiles. They believe in upcycling30 instead of using new materials, "closing the loop," thus everything is recycled endlessly into new products and packaging or making sense of creating unnecessary collections for an overstocked industry

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SUSTAINABLE DYES IN TEXTILES WITH NATURAL SOURCE OF CASSAVA LEAVES AND RESIDUAL FILTER COFFEE WASTE

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ABSTRACT

Environmental protection and awareness have become imperative for individuals and states everywhere, particularly in non-industrial nations. The United Nations Development Program (UNDP) has outlined Sustainable Development Goals (SDGs) to end neediness, safeguard the planet and guarantee that all individuals appreciate harmony and success. Among the seventeen objectives SDGs, Goal 12 is about Responsible utilization and creation which demand ventures, organizations and shoppers to reuse and decrease squander as a proportion of manageable turn of events. Further spotlight is on monetary development and maintainable improvement that diminish the human biological impression by altering the method of creation and utilization of merchandise and assets.

The Textiles wet processing handling industry is the second biggest polluter close to the oil business. It consumes large amounts of water and dangerous synthetics that dirty the climate intensely. The machineries utilized for wet processing are energy concentrated. Taking into account this large number of elements, reasonable and eco-friendly wet processing is the need of great importance.

This research work centers on sustainable dyes of materials with regular dye colors and mordants. The normal dye colors have been extracted from various sources, particularly unutilized plant parts and food waste, and their application on textiles material like cotton, silk, and nylon. Low material to liquor proportion of 1:10 has been taken for the review.

A comparative study on ordinary dyeing and ultrasonic dyeing, an energy productive strategy, was done. The dyed samples have been examined for different parameters. Dyes the used dye bath shower contains unfixed dyes at higher fixation; however it may not be utilized to dye again since it shows the uneven results in dyeing with streaks and patches. Henceforth the equivalent has been utilized a tie and dye technique for dyeing and the outcomes were viewed as great. Additionally, the cassava leaves, an agro-waste, is utilized as regular dyes in screen printing of cotton fabric.

Keywords: *Natural dyes, cassava leaves, Residual Filter Coffee Waste, ultrasonic dye, sustainable, eco friendly, wet processing.*

Introduction:

India is an honored country with regards to nature and biodiversity. India has four biodiversity areas of interest with numerous endemic species. Numerous parts of the antiquated human advancement and culture of individuals were gotten from nature and normal peculiarities. The life was supportable and eco-accommodating. The materials were delivered from regular filaments with handspun yarn, woven in handloom, dyeing or printed with normal colors or shades. Regular filaments, for example, cotton, cloth, silk and wool were generally utilized. It

very well might be claimed that industrialization was the beginning of environmental pollution and other related issues that the mankind is looking across the world. The material and design industry has changed from old structures and practices to present day innovation arranged quick style. With the appearance of engineered colors, it is exceptionally intriguing to observe the utilization of normal colors and materials which have been utilized richly previously Eiland (1999)

Textile dyeing both a workmanship and science that has been rehearsed since human progress. The dyes and shades utilized in antiquated times were gotten from natural substances. Different plans and procedures were trailed by the craftsmans and skilled workers who were well versed in explicit strategies believe Vankar (2016).

However natural colors are protected and eco-accommodating the mordants utilized may not be great. In any case, numerous natural dyers all over the planet utilize hurtful metal salts like chromium, copper, tin, zinc as mordants for dyeing. Consequently it very well may be sensible to contend that all natural dyeing and materials are not sustainable. For a sustainable natural dyeing simply 5 natural materials must be utilized which don't hurt the climate, the process should be energy effective and the squanders should be reused or appropriately treated and disposed of securely. In the event that synthetic substances are not utilized in the dyeing process then the gushing would be bio-degradable and could be even utilized for water system. After color extraction the leftover materials could be utilized in the creation of bio-excrement or manure consequently making the whole process round about

Residual Filter Coffee Waste Leftover Filter Coffee Waste Arabica and Robusta are the two principle coffee bean assortments utilized in numerous nations all over the planet. Raw coffee beans, really seeds, are light green in shading. Coffee beans gain tone, aroma, surface and taste during the broiling system; the temperature and the level of simmering yields different result of the above properties. Among numerous strategies followed for coffee beans broiling hot air cooking packs numerous aromatic mixtures in the beans. Cooking likewise further develops the cell reinforcement limit and caffeine content of the coffee beans. Newly blended coffee is liked by shoppers all around the world because of the invigorating impact, solid and waiting aroma, and particular taste portrayed by sharpness and harshness, thinks Blumberg et al. (2010).

The coffee industry creating soluble coffee winds up with immense lingering coffee grounds which contain organic materials that request an enormous amount of oxygen for degradation Silva et al. (1998)

Cassava (Manihot esculenta) is a tuberous perennial plant of Euphorbiaceae family. It began in Latin America and was taken to Africa by European brokers after the revelation of America. Afterward, the crop was taken to Asia. It is a significant food crop with extraordinary monetary significance around the world. Cassava is a dry season safe and waterefficient crop and subsequently suitable for tropical locales. The world cassava creation in the year 2016 was 279 million tons. The leaves are side-effect subsequent to gathering the cassava tubers (root). Cassava leaves contain around 21% of rough protein in this manner making it reasonable for creature feed. Be that as it may, the leaves likewise contain cyanide, from 20 to 80 HCN per 100 gram of new leaves, which is toxic. It is not difficult to dry the cassava leaves and cassava leaf supper (CLM) could be ready and taken care of to poultry (Courtesy: www.fao.org).

Extracted natural dye from coffee, Cassava and dyed cotton, silk and wool fabrics with mordants such as ferrous sulphate, copper sulphate, aluminium sulphate, manganous sulphate,

stannous sulphate and zinc sulphate. The dyed samples exhibited average to good colour fastness and good deodorizing property Ogbuji et al. (2016)

Myrobalan this dyestuff comprises of ground nuts of the Terminalia chebula tree. This tree fills in Nepal, India, Sri Lanka, Burma, Thailand, Indochina and south China. Myrobalan might be utilized in the mordant methodology or as a dye, giving a light rich yellow. It is a significant tannin for use on cotton in India and southeast Asia because of the light warm shading it grants to the fabric. Myrobalan is a solid groundwork for overdyeing. It is additionally the ideal tone to set down under a solitary indigo plunge for greenish blue. At the point when utilized in the tannin strategy, myrobalan requires 15-20% WOF. Assuming utilizing to make a delicate margarine yellow utilize 20-30% WOF. (Courtesy: www.fao.org).

Alum mordant for use to shading protein strands (wool, hair and silks) with normal dyes, and in mix with tannin for cellulose filaments. Alum mordant connections artificially with the fiber and makes connection focuses which bond with the colorant from normal dyes making light and wash quick tones. It secures the shading got from dye plants (contingent upon the plant utilized) and can be utilized for yellows, orange, red, and purple. We energize trial and error and suggest cautious record tones in future dye meetings.

Ultrasonic dyeing method-Ultrasonically helped dyeing of fibers and fabrics works on the penetration of the color into the fiber pores and increments shading strength and shading fastness fundamentally. Ultrasonic dyeing is a quick interaction, which can be run under gentle circumstances and low temperatures. The fiber design of materials, for example, fabrics and materials isn't harmed by sonication and stays in salvageable shape. Ultrasonication heightens the dyeing treatment accomplishing better shading results and a quick interaction.

The current study aims at extraction of natural dyes from novel sources, especially from waste materials, and their applications on textiles in a sustainable manner with Cassava Leaves and Residual Filter Coffee Waste Blumberg et al. (2010).

Methods and materials

Materials

- Sources of Natural -Dyes selected Cassava and dyed cotton
- Selection of Fabrics -cotton, silk and wool
- Selection of Mordants – Myrobalan and alum

Methods

Dyeing should be possible at any phase of textiles production, for example, fiber, yarn, fabric or garment.In the current review the dyeing of textiles have been endeavored utilizing regular dyes through sustainable approach. According to a sustainable perspective the dyes are extracted through aqueous medium and ultrasonic both

Extraction of Natural Dyes

- The dye extraction from selected sources is carried out using water bath (conventional) at 60°C .
- The material to liquor ratio (MLR) used is 1:10. The solvent used for dye extraction is water

Mordanting:

Mordanting of Fabrics Mordants are working with substances that fix the color to the filaments.

The severe concentration utilized is 10% on weight of fabric (owf). If there should be an occurrence of myrobalan, the stringent is first taken and added to water (1:10) and bubbled for one hour and separated. Then the fabric is treated in the filtrate for one hour at boiling temperature. If there should arise an occurrence of alum and ferrous sulfate mordants, the severe is first disintegrated in water and brought to bubble, then fabric is placed in the stringent shower and treated for one hour at boiling temperature. Then the fabric is dried and saved prepared for coloring

Result and discussion:

Colour fasting to washing:

Mordant	**Myrobalan**		**alum**	
	Water both	**ultrasonic**	**Water both**	**ultrasonic**
Cotton	3	3	2	4/5
Silk	3/4	4/5	3/4	3/4
wool	2	3	2	2

The above table shows the results of colour fastness to washing of silk, cotton and wool fabrics dyed with, alum and myrobalan .the cotton fabric rating 3 to 4/5, silk rating 3/4 and wool rating 3 so the sample exhibited good result in ultrasonic method

Colour fasting to rubbing:

Mordant		**Myrobalan**		**alum**	
		Water both	**ultrasonic**	**Water both**	**ultrasonic**
Cotton	**Dry**	4	5	4	5
	Wet	3/4	4	4/5	5
Silk	**Dry**	5	5	3	4/5
	Wet	3/4	4	4/5	5

The above table shows the results of colour fastness to rubbing of selected fabric are cotton and silk dyed with, alum and myrobalan .the cotton fabric rating 4 to 5 and silk rating 4/5 to 5 so the sample exhibited good result in ultrasonic method

Colour fastness to light:

Mordant	**Myrobalan**		**alum**	
	Water both	**ultrasonic**	**Water both**	**ultrasonic**
Cotton	1-2	2	1-2	2
Silk	2	2	2	2

The above table shows the results of colour fastness to rubbing of selected fabric are cotton and silk dyed with, alum and myrobalan .the cotton fabric rating 1- 2 and silk rating 2 so the sample exhibited same result in both method

Conclusion:

However natural dyes are safe and eco-friendly the mordants utilized may not be great. All things considered, numerous natural dyers all over the planet utilize harmful metal salts like chromium, copper, tin, zinc as mordants for dyeing. Consequently it very well may be sensible to contend that all natural dyeing and materials are not sustainable. For a sustainable natural dyeing simply 5 natural materials must be utilized which don't hurt the climate, the cycle should be energy effective and the squanders should be reused or appropriately treated and disposed of safely. The natural dyes extracted from the cassava leaves, Residual Filter Coffee Waste is a novel dye for textile applications. The dye extraction, dyeing behavior and end results are concluded as the colour fastness are good in ultrasonic method dyeing. Ultrasonic dyeing is a rapid process, which can be run under mild conditions and low temperatures

TEXTILE CARE DEVELOPMENT INVESTIGATION ON OIL SORPTION CAPACITY OF BLENDED FABRIC

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ABSTRACT

Oil is transported from petroleum exporting countries to consuming countries via sea, ocean and land. During transportation, there are chances of oil spill on the water body which gives negative effect on natural flora and fauna and on human health. So, it is necessary to clean the water immediately after the oil spill. Physical, chemical and biological methods are used for oil spill clean-up. Among these techniques, physical method of removing oil from water using sorbents is one of the most efficient techniques. Different types of sorbents such as organic, inorganic and synthetic materials have been successfully developed for oil spill sorption. The aim of this study is to develop biodegradable sorption fabric. The oil sorption capacity of natural fibrous needle- punched nonwoven structures of nettle, areca, kapok and cattail were investigated. It has been observed that an increase in the proportion of kapok fibers in the blended nonwoven structure increased the oil sorption capacity and reduced water sorption than that of other nonwoven fabric. This is because of the inherent hydrophobic property of kapok. However, 100% kapok could not be made into needle-punched nonwoven and hence it has been blended with cattail fiber and cotton with fewer ratios.

KEYWORDS: Oil spill ,sorbents, organic, inorganic,kapok and cattail were investigated,develop biodegradable sorption fabric, needle-punched nonwoven.

INTRODUCTION

Oil is principally one of the most important energy sources in the world. However, as long as oil is explored and transported for being used, there will be the risk of the spillage into the marine environment. In recent years, the problem of dealing with oil on water, for example as the result of spillage from tankers or of the blow-out of an offshore oil well, has become of increasing concern. Various approaches have been adopted to combat the problem, including the use of detergents and of skimmer devices to pick up the oil from the surface of the water. However detergents are costly and present pollution hazards themselves. Skimmer devices are usually complex, require considerable capital investment to manufacture and engineering and maintenance to keep fully operational, and in general only operate fully satisfactorily in calm conditions as cited in Alfred F.Crotti (1980).

Nonwoven materials used in automobiles : The role of textile is evident when one looks at the seats, carpets and other interior fabric, but the textile & #39;s involvement is more than what meets the eye. Apart from conventional uses as headliners, etc., textiles are also being used as tyre cord, fuel filters, safety belts, air bags and as a reinforcement material for composites.

Automotive textile includes textile components like fibres, filaments, yarns and fabrics used in automobiles. Some of these components are easily visible in the automobile, while others are masked. Upholstery, carpets seat belts, roof liners, etc. are easy to point out and tyre cords, composites including bumpers, side panels etc. and rubber reinforced components like hose and filters, airbags,etc. are concealed.

The fabric used in upholstery can be polyester, wool, nylon or acrylic. The main performance is abrasion and UV resistance, attractive design and texture. For tyre cords and fabrics, tensile strength, adhesion to rubber and fatigue resistance are important factors. Fabric used for the tyre cords can be polyester, nylon, rayon, steel or aramid. In case of composite, factors such as stiffness, strength, light weight and energy absorbing are to be considered, so the fabric used polyester or thermal stability polyethylene. Fibre composites have replaced heavier metal components that have significantly reduced the weight of the vehicle.

Another factor to remember is that the hoses, belts and air springs must have heat resistance, tensile strength, dimensional stability, adhesion to rubber and chemical resistance, so polyester or aramid are a suitable choice. Airbags must have the ability to withstand high temperature inflation gases, durability to storage in compacted state over many years so nylon is a great option. The carpets must have light fastness and mould ability that can be achieved with nylon, polyester or polypropylene.

Based on the above literature , the investigator has selected the topic "THE EFFECT OF PHYSICAL PROPERTIES ON OIL SORPTION PROPERTIES OF MIXED FIBER NONWOVEN MATERIAL" , to carry out the research work.

OBJECTIVE

1. To select the natural fibres for study.
2. To study the characteristics of selected natural fibres – cattail, nettle, areca
3. To blend the fibre with cotton and cattail using a needle punching with different blending ratio.
4. To develop the needle punch non-woven mat for oil filtration application.
5. To evaluate the non-woven material for oil sorption application.
6. To study the non woven material for oil sorption with crude oil.

METHODOLOGY

SELECTION OF NATURAL FIBER

The first step towards carrying out the project is to select the required natural fiber – cattail, areca, nettle, kapok, Cotton. Cattail fiber sourced from Tiruppur, Noyyal river. Areca fiber collected from Thondamuthur. Cotton fiber sourced from Avinasilingam. Kapok fiber sourced from Mettupalayam. Nettle fiber sourced from Uttarkhand.

EXTRACTION OF NATURAL FIBER ARECA:

The dried areca empty fruits were soaked in de-ionized water for five days. This process is called retting; allowing the fiber to be removed from the fruit easily. The fibers were removed from the fruit an d separated with a comb. Fibers are dried in room temperature.

CATTAIL:

Seeds are small, dry and wind dispersed. One plant can produce between 20,000 -700,000 fruits per years.

First step was removed the seeds then cattail fiber their extracted from epidermis(outer surface) layer on the plant.

KAPOK:

Kapok is a fiber extracted from the seedpod of the kapok tree. Sometimes called Silk Cotton or Java Cotton, the kapok can grow up to 4meters (13 feet) per year, eventually reaching a height of 50 meters (164 feet).

NETTLE:

The nettle, Girardinia Diversifolia, rows profusely in the Himalayan valleys of Uttarkhand and Sikkim. The villagers of these area extract nettle fiber by traditional techniques and spin and weave them manually on hand operated systems.

COTTON:

Inside are the cotton fibers and seeds. The boll gradually turns brown, and the cotton fibers inside grow and expand until they burst open the pod to expose the fluffy, white cotton. Different types of picking or stripping machines can be used to twist the cotton from the plants.

SUMMARY AND CONCLUSION

Kapok fiber as an absorbent material for oils, sounds and dyes with special to its use as an oil- absorping material. Accoding to the work Areca, Nettle & Kapok these three fibes with composite fibers combined with cotton & cattail are taken. These fibers have been classified into two different ratios 35:35:30, 50:20:30 for study. In summary kapok can be a better alternative to the widely used materials. Economically kapok is relatively cheap compared to cotton.Based on the above literature , the investigator has selected the topic "THE EFFECT OF PHYSICAL PROPERTIES ON OIL SORPTION PROPERTIES OF MIXED FIBER NONWOVEN MATERIAL" , tocarry out the research work.

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SUSTAINABILITY IN FASHION DESIGN

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ABSTRACT

Sustainability is not a onetime process it is a philosophy has to be followed life time. Fashion industry is second largest in Ngenerating pollution as well as economy Sustainability in fashion industry works in various areas like design, fiber, processing, production etc... Fashion design is trendy, stylish, addictive, smart. and fast moving. On the other hand sustainability is slow, responsibility and care.

Now a day's some consumers taking care about what they are wearing, where and how it has been manufacture. They are also shifting their purchasing decisions to create a cleaner environment through the clothes they wear. As designers are the middle person of the fashion industry, they connect manufacturers and consumers. They are the trend setters, creators, who lead the fashion industry always they move it forward. Fashion design is a process includes selecting of fiber, fabric quality, color, additional finishes need, structure, printing, area of sale, customers to be reached. A fashion designer alone cannot do sustainable fashion design; she has to educate suppliers in each and every area of process it requires also she need to educate the consumers too. As it includes a vast area of process it may take a long time for a designer to achieve the desired aim. In this paper we are going to discuss about why and how designers can contribute for sustainable fashion design. For this paper I have gone through latest researchers on sustainable fashion design.

Keywords: *Sustainability in Fashion Design, Fiber, Dyeing Finishing.*

INTRODUCTION

Sustainable fashion is a philosophy and movem ent that promotes environment and social responsibility. Sustainable fashion refers to clothing that is designed, manufactured, distributed, and used in ways that are possible, taking into accounts both environmental and socio-economic. The word sustainable is defined as "capable of being sustained." Therefore, a sustainable fashion industry is one that must operate in ways that can continue working for years and years. Unfortunately, this is not easy in today's dominant 'fast fashion,' which refers to clothing that's intentionally designed to be consumed quickly , at cheap prices, leading shoppers to view clothes as being disposable wearing them just a few times before throwing them out or moving on to newer and trendier cheap clothes. The fast fashion cycle is far from sustainable, because it depletes the Earth's natural resources at exponential rates, exploits workers around the world, and results in an overwhelming amount of waste.

2. SUSTAINABLE FIBER

Fabric choice directly affects the raw material sourcing, fiber processing, and end-of-life prospects. The fiber used to make fabrics directly impacts and contributes to consumption of water, micro plastic pollution, greenhouse gas emissions, soi l degradation, rainforest destruction and lastly land fill waste of epic proportions. Today we are getting verity of eco- friendly fibers, and more research is going on with verity of base.

2.1. ORGANIC COTTON

Organic cotton is one of the most natural fiber. It's grown without pesticides and synthetic fertilizers and processed with no chemicals. From an ecological standpoint, organic cotton farming uses 62% less energy and 88% less water than conventional cotton (which is, to the surprise of many, one of the single dirtiest crops around). There are several certifications used with sustainable and ethical cotton to tell us that the cotton was grown without any chemicals and processed without any chemicals, leaving the final garment chemical-free. Organic clothing brands use this fibers in just about every type of garment, organic bras , organic mattress protectors, organic maternity clothes, organic baby clothes and much more.

2.2. RECYCLED COTTON

Recycled cotton is produced using either post-industrial or post-consumer waste. Many fashion brands use this for good reason. This means that your favorite ethical cotton underwear or sustainable blue jeans could be made from industry fabric scrap or other recycled cotton garments. Recycled cotton helps to prevent fashion waste from ending up in landfill.

3.2.OXYGEN BASED BLEACHING METHOD

"Chlorine bleach" contains toxic to customers and the environment but it is still used to bleach material. The alternative option of that could be oxygen-based (hydrogen peroxide). Some of the factories already have started to use ozone. "This technology relies on cool water rather than having to maintain the fabric in a hot water bath for many hours. The ozone breaks down into water and oxygen in waste water" Antimicrobial materials are widely used in surgical gowns, undergarments, and baby wear, among other applications. Traditional apparel and home fabrics are now being treated with antimicrobial finishes. Pathog ens are killed or inhibited from growing, and their effects are controlled by antimicrobial agents. Cotton and other natural fibers are easily damaged by bacteria due to the presence of carbohydrates in the fibers. Antimicrobial-finished fabrics are used in a wide range of products, including athletic gear, footwear, medical textiles, furniture, automotive textiles, intimate apparel, and more. The presence of microbes in fabrics generates a foul odor and discoloration, as well as health issues. Microbial infections cause inflammation, allergies, and skin illnesses; hence clothing worn adjacent to the skin should have an antibacterial finishEco-friendly antimicrobial textiles based on natural antibacterial compounds are becoming increasingly popular. Many plants have chemicals that have antibacterial effect when applied, such as tannin, flavonoid ds, and terpenoids. They have the ability to function as both a bactericide (killing the microorganism) and a bacteriostatic (preventing the microorganism from growing).

The following are some examples of natural antibacterial agents

- Papaya (Seed and Leaf)
- Aloe Vera
- Neem

Banana (Leaf and Peel)

- Mango
- Pomegranate
- Sericin
- Chitosan

Combinations of various sources:

• Pomegranate + Onion
• Neem+ Aloe Vera
• Tulsi + Turmeric + Neem

4.2. IMPLEMENTATION OF NANOTECHNOLOGY

In the dyeing and finishing industry, nanote chnology is one of the most sustainable technologies. Textile fibers with diameters ranging from 1 to 100nm are used in this technology. Nanotechnology has already shown to improve the surface area of individual fibers when used in textiles. The sustainable implementation of nanotechnology in the textile industry can reduce the usage of harmful and toxic chemicals which damage the environment.

Following finishes can be obtained by implementation of nanotechnology:

 Antimicrobial finish
 Water repellent finish
 Self-cleaning finish
 UV Protective finish
 Antibacterial finish
 Antistatic finish
Wrinkle resistance finish
 Anti- pollen finish
 Flame retardant finish

5.CONCLUSION

As designers' and companies' today is that they have to make their choices from the limited possibilities and offerings that exist on the current market, the end design result is not always the ideal or perfect one. Yet we need strong and brave designers and companies who question today's practices and examine how to do things differently. Moreover these change-makers can demand sustainable change from their suppliers, subcontractors or manufacturers and through this pressure create change in the fashion industry. Bit by bit the change is happening. These designers' own value base is a strong driver for fashion change. The design examples presented in this chapter show that good and aesthetical design is a crucial aspect also in sustainable and ethical fashion. The values behind the product and company create the foundation upon which good design is built: design that is also easy to fall in love with. This – we strongly argue is the way to do sustainable fashion in practice in future.

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NARRATIVES OF A FASHION PRACTITIONERS

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ABSTRACT

When fashion weeks are of significant importance since in addition to new designs to present when collections are completed fashion designers introduce them through the fashion show, a field used to present their collection ideas in an impressive and striking manners. Fashion shows have a strong impact due to the atmosphere created which is surrounded by music, video art, performance and stage. Thus an artistic approach is key when designing a show in order to reveal the collections ideas in its most relevant form.

A Fashion designer creates clothing, including dresses, suits, pants and skirts and accessories like shoes and handbags for consumers. Frederick worth who was the first designer to have his label sewn into the garments that he created, Worth's success was such that he able dictate to his customers what they should wear, instead just following their lead. Designers in Fashion Houses are no longer working with two collections per year, Fall/ Winter and Spring/Summer. They are constantly searching for fresh idea and creating new products in order to meet their customer's aspirations.

Fashion and Branding have become powerful forces in the contemporary world, Fashion models, central Players in these developments, are Lighting rods for controversy and objects of desire.

This Paper is attempted to identity Research opportunities for the future, offer Recommendations for Fashion Practitioners.

Keywords: Fashion show, artistic approach, designer, creating new products, fashion model, central players.

INTRODUCTION:

Fashion weeks are of significant importance since in addition to new designs to present, within those weeks a fashion shows' effect sometimes moves ahead of the designs. When collections are completed, fashion designers introduce them through the "fashion show," a field used to present their collection ideas in an impressive and striking manner. Through this form, the designer employs performative presentation to help put across the intellectual message, the allure of a fashionable creation, or to mediate diverse creations in a visual way as a collection.

Fashion shows have a strong impact due to the atmosphere created which is surrounded by music, video art, performance and stage design. These 20-25 minute shows represent the whole collection through the background idea of the collection and designer's inner world, by using colors, textures, stories, forms and visuals.

Thus, an artistic approach is key when designing a show in order to reveal the collection's idea in its most relevant form. The aim of this paper is to examine how fashion shows are curated by artistic applications and to reveal the ways of narrating stories which are not written but are conveyed to communities through performative presentations. In this respect, an interpretative approach was adopted and related artistic applications from contemporary examples held between 2013 and 2018 were analyzed as part of narrating a collection.

Definition for Fashion Show:

The definition of a fashion show has been described as "a biannual presentation of a new clothing collection on moving bodies for an audience" (Skov et al., 2009: 2).

Didier Grumbach, the former president of Chambre Syndicale de Haute Couture also stated that the fashion show is a tool that means to narrate a designer's ideas (Tungate, 2006: 161).

Over one-hundred years since inception, today's fashion show is more abundant and the means more varied.

From the "manikin doll" type to the professional catwalk performance seen in the commercial world, to the international costume design and modeling competitions as well as the artistic program which aims to satisfy an audience's appreciation of beauty, the fashion show has formed into a rich and colorful performance type.

FASHION SHOWS

The most artistic aspect of fashion is normally linked to its display the idea of dressing models, parading them down a catwalk, and premiering a new collection to the press. By the mid-1930's, the shows were produced on a grand scale, and in the 1960's, sound and light were integrated into runway productions.

In Europe, based on the works of Charles Frederick Worth, Paul Poiret, and Lucile (known as Lucy Christiana, Lady Duff-Gordon), the concept of the fashion designer was pioneered in the early 20th century, with designers such as Lucile and Worth starting to organize fashion shows that employed professional models in order to promote their fashion houses. These designers scarcely have imagined how fashion shows would develop towards the end of the century.

Fashion shows have progressed immeasurably since, an today they significantly utilize performance arts and digital technologies in order to create different effects.

With the widespread art of the fashion show and the developments of public catwalks, fashion show have become more and more part of public recreation.

Thus, to reflect the sentiment of a collection as accurately as possible, organizing a fashion show requires a significant degree of artistic approach. At this point it can be argued that throughout history, the interaction between fashion and art was not limited to creative processes, but also in its presentation and the relay of created products and designs. Of equal importance is that through fashion shows, designers or brands can fully control the aesthetic vision or concept.

It is now the fashion show that makes a designer an artist, and not merely a dressmaker. It can be argued that through performance, fashion designers have adopted a role of "designer-as-artist" (Duggan, 2001: 268).

Artistic perspective is not limited to the creation of fashion trends and designs, but is now asrequirement of fashion shows as well. Thus, the fashion and art world is now close to being an "art of Fashion Shows"

One of the most significant stage designers has been Alexandre de Betak. This chief designer in the French design house of Bureau Betak has become one of the most powerful names in the field through his stage designs over more than 25 years. The designer has worked with John Galliano, Hussein Chalayan, Christian Dior, Victoria's

Secret, and Viktor and Rolf. The designers pulled the collection pieces from the models and hung them on the stage walls in Viktor and Rolf's fall-winter 2015 show, and realized a performance that reflected the central theme of the collection inspired from picture frames. Designers also collaborate with the art of cinema. An example took place with Kenzo and David Lynch.

Recently, some fashion shows have used digital images and omitted traditional elements of the fashion show such as models, stages, garments, music and even audiences. Kenzo's Spring-Summer 2013 show at Paris Fashion Week was a 22×8 meter-high cube onto which projections from eight synchronized 22,000-lumen projectors created busy and colorful scenography in order to create a digital jungle environment. In another example, Bureau Betak, in the Peter Pilotto for Target

launch at Gotham Hall, placed modular screens and mirrors on the stage and reflected both the designs of Peter Pilotto's collection and Target's logo on the screen using mapping and video graphics.

Es Devlin is also known as a stage designer which designed Louis Vuitton's Spring-Summer 2015 show by using gigantic mirrors and LED screens for an audience communication tool from the inside of the stage itself.

For Marc Jacobs' fall-winter 2014 collection, 500 grey and violet foam clouds were mounted on the catwalk ceiling. The "Happy Days Are Here Again" song, sung by actor Jessica Lange, reflected a dark and powerful period instead of happy and good times. The stage designer for the show, Stefan Beckman, said "We wanted the clouds to be grey, not happy and white," and the designer Marc Jacobs said "It is necessary to transmit a little discomfort in the emotion of comfort," and these comments reflected their views on the types of emotions communicated to the audience according to the intended atmosphere created by the show.

The eye catching fashion show stage

According to Elizabeth Currid, New York City is often an inspiration for artists and designers because of its modern, social, dynamic, active and vibrant

structure.New York is a global city that determines and influences various movements worldwide (Warf, 2000). The neon colors used for the collection reminded the audience of city lights.

Kepes explained the effects and inspiration of city lights on the audience as rich aesthetic potentials for creating color palettes of the new urban art that would help to connect to the urban character. Based on this assessment by Kepes, it could be argued that city lights are a very effective element in the creative process for artists and designers; it is possible to perceive city lights as one of the opportunities of inspiration offered to an audience. For this show, DKNY also used the different colors and textures of the city as a display for the catwalk; with constructions of Brooklyn Bridge, wall bricks, and pinkish colors of the streets. The various components of the shows -model choice, music, visuals, stage design and location- are further enhanced by the introduction of a theme. Often called from a source of nspiration for the season, themes can be specific or very abstract. Because these themes are used for many purposes, including the show's invitation, the production, and the clothing line itself, they must be easily identifiable and memorable.

Designer and Product

Due to technological advancement, fierce competition, and the fluctuations of changing consumer tastes and market demand, fashion designers must response much quicker to the evolving global market, and to create products with 'newness' and 'uniqueness' that differentiate them from their rivals. In order to understand what determines the success and failure of a product, it is essential to understand the design mechanism.

A conceptual model was proposed for this study based on literature review include Don Norman's three aspects of design. As indicated in the Table, visual design, behavioural design, and reflective design are aspects that should be considered when designing and developing a new product for today's consumer market.

Visual Design with Aesthetic Values :

The appearance of a product can stimulate an aesthetic response that creates a sensory experience (especially through vision). Fashion designers are viewed as an encoder of information sources, the product is regarded as a transmitter of idea and image, and the consumer is considered to be the receiver or decoder. In order to create an aesthetic product that will attract the attention of their consumers, designers constructively and intentionally use various design elements and principles such as line, space, shape/form, light, colour, texture, pattern, repetition, parallelism, sequence, alternation, gradation, transition, radiation, rhythm, concentricity, contrast, emphasis, proportion, scale, balance, harmony and unity in their designs to shape the appearance and quality of their work.

Behavioral Design with Utilitarian Values and Experiential Values :

Behavioral design is comprised of two primary components: utilitarian values and experiential values. Utilitarian values refer to functional benefits (e.g. fabric, quality, performance, fit, comfort) and economic values (e.g. price). Experiential values consist of sensory pleasure, affective pleasure and cognitive pleasure. Sensory pleasure relates to five human senses of sight, touch, taste, smell and hearing engaged when using a product.

Affective pleasure concerns consumer's psychological response and often refers to emotions, moods, and feelings towards an object (Crilly et al., 2004). Cognitive pleasure associates with consumer's experiential history, and his/her current experiences and knowledge of the product.

Reflective Design with Symbolic Meaning :

Reflection design signifies the private, social, cultural and symbolic meanings and messages that are imbued in a product during its use. Some consumers may choose a product more for the social image evoked or symbolic meaning attached rather than for its functional performance or sensory benefits.

These three aspects are interrelated with each other. Therefore, they should not be viewed as separate entities. In many cases, the visual form or appearance of a consumer product can enhance the performance properties of a consumer product and offer sensory pleasure all at the same time (Smets and Overbeeke, 1995). As an example, a pair of zip-off nylon pants can offers multiple attributes to the wearers. Self-identity can be constructed, developed or expressed through the product. A layer can be removed to create new style (appearance) and avoid overheating (performance), and the 'rustling' sound created by the movement of nylon fabric may be soothing and evoke a sensory pleasure.

Design and its Functions

Design plays a critical role in shaping and forming a new product; the translation, integration and communication of new ideas throughout the process of design and product development are continually being employed. Based on Trueman's (1998) design attributes, there are some ideas that adapt and extend the role of design: communicator, differentiator, integrator, and generator. First, design used as a communication tool conveys messages and ideas to the public. Likewise, it can be used as a means of constructing, developing and communicating the identity of the consumer (Elliott, 1999; Sinha, 2002). Second, the use of design can differentiate a product of one brand from other brands. Third, design can integrate new ideas and concepts into the product. Last, good design can generate more business and synergies for a company.

Fashion Models :

Fashion models as gender myths and cultural icons through a cultural history of modelling. It reveals the construction of models' personas by the successive addition of meaningful signs: physique, manner, attitude, nationality, class, race, salary, chamaleonism, slenderness, and so on. The models' glamour expresses economic and social power and promotes the values of consumerism, while exporting cultural ideals through visual neo-colonialism. On the basis of empirical material on models' experiences gathered from interviews, second oral sources and autobiographical material, bodies, identities and public personas as artefacts performed through the reiteration of collectively defined gender standards and practices. This approach overcomes the contrast cast in fashion discourse between visibility/invisibility, private/public, real/unreal while disclosing the hegemonic beauty standards as fiction

Conclusion:

Today, fashion shows require significant artistic and technological equipment. It is insufficient that just a fashion shows is being held; they have now entered into the expectations of how to present the story being told to the audience. As fashion sense is changing, we must think that fashion shows are also. Considering the relationship between fashion and art, "what is the fashion sense of the 21st century?" and "what is the art of 21st century?" should also be asked. Given the answer to these two questions in the context of fashion shows, the subject of "technology" is undoubtedly under consideration. With the inclusion of technology in the fields of art and fashion, fashion shows now have a great potential to present almost all kinds of possibilities to the audience with its stimulating qualities and technical aspects. With the advancements in digital arts and technology and the nourishment of fashion through all aspects of art, designers are discovering new ways of reflecting the stories of their collections in more effective and surprising ways.

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ECO-FRIENDLY TEXTILES

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ABSTRACT

The evolution of clothing from its fibre stage to fabric requires a lot of processes which are harmful to our environment. So it is very important to make textile industry more sustainable. Now- a- days a wide range of techniques and innovations related to textile production have been developed to save the world from being affected by the hazardous effects of chemicals. Sustainable fashion, also called eco fashion, is a part of the growing design philosophy and trend of sustainability, the goal of which is to create a system which can be supported indefinitely in terms of human impact on the environment and social responsibility. This paper presents an overview of the textile industry highlighting eco-friendly fibres, techniques and innovations that are developed to make textile industry more sustainable.

Keywords: *Eco-Friendly Fibres, Sustainability, Textiles*

INTRODUCTION

The textile industry being a very good example for the most advancing and ecologically harmful industry in the world, various innovations are done in order to safeguard our mother earth. The production stages of textile include bleaching, dyeing etc...Contribute to a large extend of pollution thus making it important to make it more sustainable. Controlling pollution is as vital as making a product free from the toxic effect .So in order to safeguard our environment we must take some preventive measures and technologies that can maintain the balance of our eco system and makes the final product free from toxic effects. Generally there is really no such thing as a 100% eco friendly piece of clothing because all clothing takes water (for the fibres to grow) and energy (to make the fabric and the final garments).So „Eco" friendly clothing can be termed as a clothing made of natural fibres such as organic cotton and hemp, clothing that has been organically dyed with vegetables or any fabrics that use small amounts of water, energy and chemicals that affect the environment. Natural fibres have intrinsic properties such as mechanical strength, low weight and healthier to the wearer that has made them particularly attractive. Any textile product, which is produced in eco-friendly manner and processed under eco-friendly limits, is known as eco friendly textiles. It is also known as sustainable fashion, eco fashion and Ecotech. In recent times sustainability is a leading characteristic of textile fashion products. Textile fashion companies are focusing more on sustainable products these days, so that they can meet the environmental and social aspects. For getting competitive advantage in fashion business the companies have to take care of social, political and economical issues, and they must be aware of current trends of the market. Sustainable fibers provide solution for the companies facing issues regarding environmental problems; these fibers are also favorable to meet the market demands of quality products these days.

SOME SUSTAINABLE TEXTILES INCLUDE

Organic cotton: Conventional cotton is very environmentally unfriendly as the extensive use of pesticides and insecticides used when growing the cotton cause pollution and also ill health. Organic cotton however is grown without the use of chemicals, making it much more environmentally friendly.

Hemp: Pesticides or insecticides are not needed when growing hemp and hemp actually improves the condition of the soil that it is grown in. It is also drought resistant and can be grown in most climates. The fabric can be made from the hemp plant without using toxic chemicals and it can be processed locally, reducing the costs and pollution associated with transport.

Bamboo: As a plant, bamboo is very fast growing, helps to improve the quality of the soil, and can help to rebuild eroded soil. It is very sustainable. Bamboo fabrics can be made mechanically or chemically. Because strong solvents are used in the chemical method, it is not considered a sustainable way to create fabric. However, there are newer manufacturing methods that are environmentally friendly. Look for a label from an organic or sustainable certification body.

Soya: Soya cloth is made from a by-product that occurs during the food manufacturing of the Soya bean. The fabric is soft, drapes well, and is comfortable. Look for soya cloth that is certified organic.

SUSTAINABLE TECHNOLOGIES AND PRACTICES INCLUDES

- **Green dyes**: –Extraction from plants. –Extraction from arthropods and marine invertebrates (e.g., sea urchins and starfish). –Extraction from algae (e.g., blue-green algae). –Production from bacteria and fungi.
- **Processes**: – Cold Pad Batch preparation and dyeing. – Continuous processing of knits. – 1and 2 stage vs. 3-stage preparation of wovens. – Combined scour and bleach for knit and yarn. – Foam dyeing, finishing and coating. – Pad/dry vs. pad/dry/pad/steam.
- **Chemicals and dyes**: –Cat ionization for salt-free dyeing. –Stable chemistries for 1 or 2-stage vs. 3-stage prep. –High fixation dyeing with reduced salt. –Enzymatic desizing and scouring. – Size recovery and recycle. –Liquid indigo and sulfur dyes. –Pigment printing and dyeing.

HERBAL TEXTILE:

Herbal Textile is dyed entirely with herbal extractions, without using any sort of chemicals. The herbs used are different from vegetable dyes as they are not only natural but also have medicinal value. These herbs are applied directly to the fabric with the help of natural ingredients, so that the medicinal value of the herbs can be kept intact. No chemical process is adopted while dyeing. Even bleaching of cloth is done naturally by exposing it to sunlight. The herbs also do not pollute the environment through contamination of water resources in areas close to processing units. All kinds of shades of red, yellow, brown, orange and green etc. can be prepared with the help of these herbs. Healing effect of herbal textiles: Herbal textile is dyed with herbs having medicinal property, it is but natural that the end products made through it will definitely have some or the other health benefits. Herbal Textile can, in fact, fight diseases like hypertension, heart ailments, asthma and diabetes depending upon the herb used to make the dyes. Some of the examples will help to understand these healing effects of herbal textile. Indigo: This herbal dye helps fight skin disease. Cuscus grass: It helps fight asthma. Turmeric: It can cure pain and is also beneficial for enhancing skin qualities. Sandalwood: It's mild fragrance has a soothing effect that helps in fighting stress. Some of the other herbal dyes are catechu, pomegranate, tamarind, madder, castor oil, sweet basil, lime, wild turmeric, henna, curry leaf tree, aloe, certain herbal fruits etc. have their own healing effects.

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INNOVATIVE FABRICS AND TECHNOLOGIES CHANGING THE CLOTHES YOU WEAR

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Abstract

Innovative technologies in clothing education provide easier and more accessible learning of the study material, acquiring more knowledge in a short time, developing the creativity, creative and visual thinking and design skills, and generally their application can lead to an increase in the quality of education. The application of the innovative clothing science technologies offers quality improvement of higher education in fashion design by interactivity, flexibility and dynamics. Clothing characterized not only by its traditional protective and representational functions, but also by technological and digital features, have evolved as a promising opportunity for one of the world's largest economic sectors-the fashion industry. This paper explores the transformation and innovations of clothing science based on the digital technology platform, and puts forward that human's thinking is flexible and the designing style will change when the design thinking changes. Clothes and wearable technology is a unique and essential reference source for researchers, designers and engineers developing textiles and clothing products in this cross-disciplinary area. It is also beneficial for those in the industry and academics researching textiles, fashion and design. This paper also proposes that changes in clothing technologies promote the appearance of the new concept. The formation of new technology concept is mainly reflected in the fact that the designers' values are changed due to the changes of creation way, which leads to new creative concept, aesthetic concept and visual expectation. The produced qualitative knowledge implementations consider new production patterns, innovative technical and digital know-how, and new consumption scenarios, explore the potential for advancement in technologies for the future development of this area.

Keywords*: Color-changing clothes, Woven in touch sensors to control a phone, Socks with pressure sensors, Built-in sensors to collect medical data, Good vibrations for sportswear, Self-cleaning clothes, The shoes that help the environment.*

INTRODUCTION

Fabrics have been part of our habits and cultures since prehistoric times. So, it's natural that, in this new technological age, we start giving them new features and uses.

When it comes to fashion innovation, consumer adoption, and constant technological development are critical. As both industries are future-driven and consumer-focused, adoption happens naturally. Clothing technology involves the manufacturing, materials - innovations that have been developed and used. The timeline of clothing and textiles technology includes major changes in the manufacture and distribution of clothing. Innovative fabrics might be the future of the fashion industry, and startups play a key role in this landscape.

This clothing and textiles technology covers the events of fiber and flexible woven material worn on the body; including making, modification, usage, and knowledge of tools, machines, techniques, crafts, and manufacturing systems technology.

1. COLOUR-CHANGING CLOTHES

If you've ever turned up at an event only to find you've slightly misjudged the dress code, you might be glad of technology that helps you blend into your surroundings like a chameleon. Colour-changing clothes are on their way – and we don't mean those dodgy Hypercolor t-shirts from the 1990s.

Each thread woven into Chromorphous' fabric incorporates within it a thin metal micro-wire. An electric current flows through the micro-wires, slightly raising the thread's temperature. Special pigments embedded in the thread then respond to this change of temperature by changing its colour. Users can control both when the colour change happens and what pattern will appear on the fabric using an app. For example, a solid purple tote bag now has the ability to gradually add blue stripes when you press a "stripe" button on your smartphone or computer. This means we may own fewer clothes in the future but have more colour combinations than ever before.

When ChroMorphous is incorporated into a product, each thread can be activated, resulting in a variety of different colors and patterns.

2. WOVEN IN TOUCH SENSORS TO CONTROL A PHONE

Tiny electronics contained in a flexible snap tag connect the Jacquard Threads in the jacket's cuff to your phone. The snap tag on the inner cuff lets a user know about incoming information, such as a phone call, by flashing a light on the tag and by using haptic feedback to make it vibrate. The tag also houses the battery, which can last up to two weeks between USB charges. Users can tap the tag to perform certain functions, brush their cuff to drop a pin to mark a favorite coffee shop and get haptic feedback when their Uber is arriving. It's also possible to assign gestures in the accompanying app and change them easily.

The jacket is tailored with the urban cyclist in mind, perhaps tapping into the hipster image, and features articulated shoulders to provide extra room to manoeuvre, reflectors, and a dropped hem for modesty.

3. SOCKS WITH PRESSURE SENSORS

You might think that socks would escape getting a smart makeover, socks contain textile pressure sensors that pair with an anklet that magnetically snaps to the cuff of the sock and talks to a smartphone app.

Together, they can count the number of steps you take, your speed, calories burned, altitude, walking distance as well as cadence and foot landing technique, which is brilliant for serious runners. The idea is that the smart socks could help to identify injury-prone running styles such as heel striking and ball striking. Then the app can put them right with audio cues that act like a running coach.

4. BUILT-IN SENSORS TO COLLECT MEDICAL DATA

Have embraced wearing a fitness watch to collect data about your resting heart rate, fitness and sleep habits, but the same technology can also be built into clothes.

Signal has created active wear, work wear and sleepwear that collects a raft of medical-grade data without wearers noticing. Its bras, t-shirts and shirts are made using smart stretchy fabric with built-in strategically placed ECG, respiration and physical activity sensors.

The data collected by these sensors is sent to a recording module in the clothing, which then sends it to the Cloud. It can be accessed, analyzed and viewed using an app to help people work out ways of staying calmer under pressure at work, or how to sleep more soundly. The recording module can collect data for 50 hours without the need to be recharged and is splash and sweat-resistant.

5. GOOD VIBRATIONS FOR SPORTSWEAR

Many of us have planned on greeting the day with a spot of yoga so we're zen in time for work. But becoming bendier than a pretzel isn't easy, and it's hard to know how to get into the right positions and how long to hold them for (if you can).

Fitness clothing with built-in haptic feedback or vibrations could help. The Nadi X yoga pants from Wearable X have accelerometers and vibrating motors woven into the fabric around the hips, knees and ankles that gently vibrate to give you instruction on how to move.

When paired with the Nadi X mobile app, visual and audio cues break down yoga poses step-by-step with corresponding vibrations directly from the pants. Data is collected and analyzed and the app can track your goals, performance and progression much like an instructor might do.

6. SELF-CLEANING CLOTHES

If you do the laundry for your family, self-cleaning clothes are probably at the top of your futuristic fashion wish list. And it may not be too long before this dream becomes a reality (kind-of). Scientists claim tiny metal structures attached to cotton fibres can break down grime when exposed to sunlight. Researchers grew 3D copper and silver nanostructures on cotton thread, which was then woven into a piece of fabric.

When it was exposed to light, the nanostructures absorbed the energy, making the electronics in the metal atoms excited. This made grime on the surface of the fabric break down, cleaning itself in around six minutes.

Dr Rajesh Ramanathan, a materials engineer at the Royal Melbourne Institute of Technology in Australia, who led the research, said: 'There's more work to do before we can start throwing out our washing machines, but this advance lays a strong foundation for the future development of fully self-cleaning textiles.

7. THE SHOES THAT HELP THE ENVIRONMENT

Most of our clothes have a negative effect on the environment, especially those made from non-biodegradable fabrics. But Adidas is doing its bit to make greener trainers.

While the eco-friendly trainer isn't brand new, the design has a sleeker silhouette and has just been released in a 'Deep Ocean Blue' colourway that Adidas said is inspired by the Mariana Trench, the deepest part of the world's oceans and the site of the deepest-known piece of plastic pollution: a single-use plastic bag.

Adidas also uses recycled plastic for swimsuits and other products in its range with environmental organisation Parley for the oceans. Consumers seem keen to get their hands on the recycled material trainers, with more than one million pairs sold last year. With eight million metric tons of plastic waste washed into the oceans each year, there's a lot of scope for other companies to use waste plastic in their clothes, too, meaning more of our garments could be made from recycled materials in future.

While it's early days for haptic feedback sportswear, which is on the pricey side, we may one day have gym kit that could instruct us in everything from rugby to ballet, using gentle pulses.

CONCLUSION

Innovative fabrics and interactive textiles are a relatively new area of research with many potential applications in the field of biomedical engineering. The ability of smart textiles to interact with the body provides a novel means to sense the wearer's physiology and respond to the needs of the wearer. The advantage of this technology relies on the integration of sensors in clothes that are worn on a daily basis, providing the capacity to continuously monitor the wearer and his/her environment. To date, most of the research in the field of wearable sensing has focused on physical sensors that respond to changes in their immediate environmental proximity.

Here, technology is applied technology, and it means technology that users want and can change an existing way of life or thinking and form a completely new category. Innovative products can only succeed if there is a group of innovators who are enthusiastic about technology. This chapter has detailed a summary of the state of the art while also highlighting the current issues and challenges for the future of this exciting field of research.

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APPLICATION OF NATURAL FIBRES IN ACTIVE WEAR GARMENTS

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ABSTRACT:

India today is at par with wider global fitness trends. The booming economy and changing lifestyle preferences have compelled Indian consumers to be more health conscious and add new health and wellness routines to their hectic lifestyles. Active wear cloths have more flexibility and style along with functional comfort ability. Garments that falls under the category of active wear is of enduring quality, serves a specific function related to climate and season. Advancements in knitting technology have resulted in the rapid transformation of the industry. The elasticity of the knitted fabric gives a more form- fitting nature to it. In addition to being fun and creative, knitting has health benefits. It reduces stress, jumpstarts literacy, and reforms inmates as it gives skin friendly benefits. The present research is concerned with the review of natural fibre types, their properties and suitability of active wear of comfort properties in active wear applications.

Keywords: *Quality, nature, transformation*

INTRODUCTION

Wellness is the new status symbol, and increasing numbers of wellness-minded individuals are showcasing their healthy lifestyles on social media, posting photos of themselves wearing attractive fashionable apparel for all kinds of activities.

Garments that falls under the category of active wear is of enduring quality, serves a specific function related to climate and season. New generation consumers wants to associate themselves with new entrants if these new entrants make sense to the buying behaviour of new generation consumers.

Active wears are usually targeted to youth and people who feel young in their souls. They want freshness in their wardrobe and buying behaviour. This is the reason that in almost all major countries have seen and keep seeing new active wear brands popping up to the surface and doing well.

COMFORT CHARACTERISTICS REQUIRED FOR ACTIVE WEAR:

The requirements for an active wear can be as classified in two groups, namely

(i) Functional-

- Light weight,
- Low fluid resistance,
- High tenacity,
- Strechablility,

- Thermal regulation,
- Uv protection,
- Vapour permeability, and
- Sweat absorption and release, and

(ii) aesthetics-

- Softness,
- Surface texture,
- Handle,
- Lusture,
- Colour, and
- Comfort.

Apart from these general requirements, active wear has to perform other functions activity related to a specific sport

1. Thermo physiological comfort
2. Sensorial / Tactile comfort
3. Mobility
4. Psychological comfort

Different functional requirement shirts for tennis, volleyball, golf (+slacks), football, rugby, baseball uniform, athletic (+shorts), track suits Sweat absorbing, fast drying, cooling Skiwear, wind breakers, rain wear Moisture vapour permeability, water proofing, vapour permeability, water proofing Skiwear, wind breakers, track suits Sunlight absorbing and thermal retention Low fluid resistance Swimming race and skating costume, ski jump and downhill skiing suits, cycling costume Low fluid resistance for water and air Swimwear, leotards, skating costume Stretch ability, opacity Snowboard wear, baseball uniform, football uniform High tenacity, resistance to abrasion, stretch ability.

ACTIVE WEAR GARMENTS

- Sports and active wear are two types of attire for the people who leads healthy and active life style.

ACTIVE WEAR
Cloths designed for the purpose of transitioning from exercise to casual wear.
Provides style along with comfort and function.
Mixed with a social and casual life.
Specially designed to meet the necessities of a performer's body.
Ex: Parkas, Hoodies, Pants and Crew neck fleece sweaters.

Active wear cloths have more flexibility and style along with functional comfort ability.

FABRIC PROPERTIES OF ACTIVE WEARS

Indoor Activity	Out Door Activity
Moisture-wicking gym clothes work for all indoor activities	Breathable active wear with excellent insulating properties.
Good stretch ability and durability	Good stretch ability and durability

SUITABLE FIBRES FOR ACTIVE WEAR

Fibre	Advantages	Limitations
Cotton	Soft, Breathable, Absorbent, Good for skin, Durability,	Wrinkle, Holds moisture long, Expensive now
Micro fibres	Strong, Light weight, Flexibility, Shrinkage, Inexpensive	Breathability, Absorbency
Bamboo	Soft, Absorbent, Breathability, Strong, Better insulator	Shrinkage, Drying time, Durability
Modal	Soft, Absorbent, Shrinkage, Breathable	Allergy to skin, Change of colour when exposed to heat, Durability

1. **Cotton:** Earlier the belief that prevailed among the masses was that cotton is a material that does not absorb sweat, so it is not a good option for active wear. However, off late, cotton sportswear is being made available as it has better odor management compared to other materials as it is breathable and does not hold on to the stench. However, when it comes to quick sweat absorbing, cotton still lags behind.
2. **Bamboo:** Talking more about natural materials for sportswear, bamboo fiber is another choice that is an environment-friendly material as it is naturally made. Bamboo fiber is very light in weight and is moisture wicking, making it an odorless sportswear. Bamboo fiber also provides amazing protection from UV rays when you indulge in outdoor sports.
3. **Viscose Rayon:** The viscose rayon is not preferred next to skin as it holds water in active wear. The outer layer of knitted hydrophilic portion of the twin layer can be of viscose rayon, which absorbs 2-3 times more moisture than cotton.
4. **Modal:** Modal is 2nd generation fibre in regenerated cellulosic fibres. Modal as defined by The International Bureau for the Standardization of Man-made Fibres (BISFA) is a distinct viscose fibre genre, which has a higher Wet Modulus (HWM) and satisfies a minimum value of tenacity in the wet stage at 5% elongation. This fibre is extremely well suited for blending with other fibres.

5. **Tencel:** Tencel is a wood-based fiber which is made from wood pulp. Since this material is made out of wooden fibers, it has a good texture with perspiration wicking properties. Tencel is a material which is completely biodegradable making it an environment-friendly choice. This material stays cool and is wrinkle-free.
6. **Wool:** Tencel is a wood-based fiber which is made from wood pulp. Since this material is made out of wooden fibers, it has a good texture with perspiration wicking properties. Tencel is a material which is completely biodegradable making it an environment-friendly choice. This material stays cool and is wrinkle-free.

MOST FIBRES USED FOR ACTIVE WEAR

Fabric Property	**Cotton**	**Polyester**	**Nylon**	**Lycra**	**Polyamide**
Breathable	✓	✓	✓	Medium	✓
Moisture Wicking	✓	✓	✓	Medium	✓
Comfortable	✓	Medium	Medium	✓	Medium
Lightweight	✓	✓	✓	✓	✓
Shows Sweat	✓	✗	✗	✗	✗
Fast Drying	✗	✓	✓	✓	✓
Stretchability	Medium	Medium	✓	✓	✓
Odour Resistant	✓	✗	✗	✓	✗
Durable	✓	✓	✓	✓	✓
Shrinks	✓	✗	✓	✗	✓
Waterproof	✗	✓	✓	✓	✓
UV Protection	✗	✓	Medium	Medium	Medium

CONCLUSION

- Active wear cloths have more flexibility and style along with functional comfort ability.
- Garments that falls under the category of active wear is of enduring quality, serves a specific function related to climate and season. Wellness is the new status symbol, and increasing numbers of wellness-minded individuals are showcasing their healthy lifestyles on social media, posting photos of themselves wearing attractive fashionable apparel for all kinds of activities.
- New and innovative fabric technologies are being used to help the wearer improve his performance. Fibers that are light weight, soft, easy to maintain, do not shrink, and dry quickly are normally used.

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DEVELOPMENT OF CU-MULTI FUNCTIONAL HIGH-TECHNOLOGY GARMENTS

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ABSTRACT:

Nano technology is an upcoming branch where lot of research work is being done with the intention of improving/changing properties of the materials. In this study cotton blended fabrics were coated with copper particles by pad-dry-cure technique. The project was conducted in a aim to prove the resistance copper has against the bacteria and viruses. The intention is to make use of the power of copper through wearing it as a dress, a mask, etc. This helps us to stay protected from the external viruses. This study proves that the copper dress can actually be useful and be made available to the consumers through nano technologies by mixing it to the cotton, thus helping the users to experience the same comfort as of cotton and have more safety and protection against the environmental forces.

Keywords: *Environment, comfort, coating, nano technology*

INTRODUCTION

When early people realized they needed more than their own hair and skin to protect them from the weather, they looked around to see what was available. People lived in a cold climate, saw animals with skins that kept them warm. They hunted these animals for food and used the fur to cover their body, the main purpose of this study has completely taken a new direction when this pandemic hits across the world. The importance of copper was seeked by many researchers and scholars across the world as it is proved that the copper is the only material that has high resistance rate against coronavirus.

Copper fabrics are known to be antimicrobial and could be used in everyday products to destroy any bacteria and viruses as there have been recent tests to show it destroys, Coronavirus. Today, because of its long use as a disinfectant and because it's required for good health, many claims are being made about using copper in various products - including fabric. Copper impregnated fibers have been introduced, which enables the production of anti-bacterial and self-sterilizing fabrics. These copper infused fabrics are marketed to be used in hospital settings to reduce infections, as an aid to help those suffering from asthma and allergies provoked by dust mites, and in socks to prevent athlete's foot.

These copper impregnated fabrics are said to be safe, pointing to the low sensitivity of human tissue to copper, and because the copper is in a non-soluble form. Yet, that copper is safe because it is in a non-soluble form was disproven by at least one study which tried to determine whether total copper or soluble copper was associated with gastrointestinal symptoms. It was found that both copper sulfate (a soluble compound) and copper oxide (insoluble) had comparable effects on these symptoms.

Wearing copper bracelets has been considered to have therapeutic effects on the human body. There are inscriptions and several recorded versions of the usage of copper in this regard from as early as the Egyptian civilization. A pure copper bracelet has for long been considered to have invisible properties that ease inflammation and pain. Unless there is no allergy to the metal, wearing a pure copper bracelet or ring can work wonders to the energy levels and immunity of the body.

IMPORTANCE OF COPPER IN TEXTILE INDUSTRY:

Copper is an essential trace element that is vital to life. The human body normally contains copper at a level of about 1.4 to 2.1 mg for each kg of body weight; and since the body can't synthesize copper, the human diet must supply regular amounts for absorption. The World Health Organization suggests that 10-12 mg/day may be the upper safe limit consumption.

Copper is a necessary nutrient and is naturally occurring in the environment in rocks, soil, air, and water. We come into contact with copper from these sources every day but the quantity is usually tiny. Some of that copper, particularly in water, may be absorbed and used by the body. But much of the copper we come into contact with is tightly bound to other compounds rendering it neither useful nor toxic. It is important to remember that the toxicity of a substance is based on how much an organism is exposed to and the duration and route of exposure. Copper is bioaccumulative - there are many studies of copper biosorption by soils, plants and animals. But copper in the environment, (such as that in agricultural runoff, in air and soil near copper processing facilities such as smelters and at hazardous waste sites) binds easily to compounds in soil and water, reducing its bioavailability to humans. On the other hand, many children are born with excessive tissue copper (reason unknown), and one of the ways we are told to balance a copper imbalance is to reduce your exposure to sources of copper.

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Natural or man-made textiles act predominantly as insulators. Conductive textiles are created by either coating a nonconductive substrate with electrically conductive elements or by embedding the conductive material within the substrate. These textiles are then used in antistatic applications, for electromagnetic interference shielding and infrared absorption, or in protective clothing for people working with explosives, among other applications. Wearable electronics bring a new application for conductive textiles, which can be found in sports and healthcare sectors where body conditions are monitored to provide health information.

CHARACTERISTICS OF COPPER

Copper is a reddish orange, soft metal that takes on a bright metallic luster. It is malleable, ductile, and an excellent conductor of heat and electricity-only silver has a higher electrical conductivity than copper. Copper surfaces exposed to air gradually tarnish to a dull, brownish color. If water and air are present, copper will slowly corrode to form the carbonate verdigris often seen on roofs and statues.

PLATING

Chemical plating is a metal deposition method that does not involve the use of external electric energy. It involves a chemical reduction oxidation reaction in an aqueous solution for metal deposition on a non-conductive substrate. A high-performance polymer filament such as PET was used as the substrate for copper coating, which results in an electroconductive, yet flexible polymer/metal hybrid yarn. In this case, the yarn is activated by introduction of a palladium seed, followed by the copper deposition by using a commercial copper salt solution. For commercialization, the amount of palladium should be as low as possible using a cost-effective application method.

BENEFITS OF COPPER COATED FACE MASK

According to the Centers for Disease Control and Prevention, the coronavirus is usually transmitted through respiratory droplets (from an infected person sneezing or coughing) rather than through fomites, objects and materials that when contaminated can transfer disease. However, the CDC notes that evidence suggests that the novel coronavirus may remain viable for hours to days on surfaces made from a variety of materials, which includes clothing.

FINDINGS

The test samples showed 87.3 bacterial reduction against staphylococcus aureus ATCC 6538 and 57.8 bacterial reduction against klebsiella pneumoniae ATCC 4352 when tested according to AATCC 100- 2012 test method. It is proven that the project I undertook has a capacity to resist against the bacteria and proved that it has 87.3 bacterial reduction compared to other materials and garments.

TEST CONDITION:

Inclumum size : Staphylococcus aureus(ATCC 6538) = 1.8*10^5 CFU/Ml, Klebsiella pneumoniae(ATCC 4352) = 1.8*10^5 CFU/Ml
Sample size/volume : Swatches of 4.8 cm for each bacterium
Method of sterilization : Steam sterilization (Autoclave)
Media used : Nutrient agar
Dilution medium used : Dey engley neutralizing broth
Method of plating : Spread plate method
Inoculum/ plate : 0.1 mlincubation
Conditions : 37°

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SUSTAINABLE FASHION AND ENVIRONMENT

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ABSTRACT:

Sustainable fashion is a movement and a process that promotes changes in fashion goods and the fashion system from the perspective of better ecological integrity and social justice. Fashion textiles and goods are only one aspect of sustainable fashion. It looks at the full process of garment production, including who makes them and how long a product lasts before it ends up in a landfill. By reducing greenhouse gas emissions, this sustainable movement combats the fashion industry's and fast fashion's significant carbon footprint. Reduced fashion's environmental impact can help combat air pollution, water pollution, and general climate change, perhaps saving millions of lives over the next century. This paper focuses on sustainable clothing, ethical fashion and fashion impact on environment.

Keywords: *Sustainability, ethical fashion, clothing, green textile*

INTRODUCTION

With yearly earnings of almost £1 trillion, fashion plays a significant role in the global economy. It is, nevertheless, one of the most resource-intensive businesses on the planet. Meeting today's requirements while also ensuring that the methods used to satisfy those needs meet future needs is what sustainable fashion is all about. Sustainable fashion also benefits the individuals who work in the fashion supply chain, from farmers to customers to those who work at end-of-life facilities like recycling plants. It's as straightforward as life or death when it comes to sustainability. Fashion has a huge influence on communities all around the world. It also has a huge climate change footprint, and if we're going to tackle the existential threat of climate change, the fashion industry needs to urgently address its unsustainable practices.

Sustainable fashion is a part of the slow fashion movement, which has evolved over several decades and is associated with eco, green, and ethical fashion. Sustainable fashion began in the 1960s, when customers became conscious of the environmental effect of garment manufacture and requested that the industry improve its methods. Although eco-fashion was first seen unfavourably, this changed with the emergence of anti-fur campaigns in the 1980s and 1990s, followed by a surge in interest in ethical clothes in the late 1990s. Fair labour conditions, a sustainable company strategy, organic and ecologically friendly materials, certifications, and traceability are all connected with ethical fashion.

ENVIRONMENTAL IMPACT OF FASHION

The fashion business is one of the world's most polluting sectors. Because it is a major contributor to climate change, the fashion industry must become more sustainable. Less than 1% of clothing is recycled to manufacture new garments, while greenhouse gas emissions continue to rise on a daily basis. To be more sustainable, the fashion industry must develop innovative ways to reuse materials and reduce pollution in order to mitigate the harm already done. The industry is responsible for around 10% of all greenhouse gas emissions. The production and distribution of fashion crops, fibres, and clothing all contribute to many types of environmental pollution, such as water, air, and soil contamination. The textile industry is the second greatest polluter of local

freshwater in the world, and is culpable for roughly one-fifth of all industrial water pollution. Some of the main factors that contribute to this industrial caused pollution are the vast overproduction of fashion items, the use of synthetic fibers, and the agriculture pollution of fashion crops.

FAST FASHION

Since the 1960s, the number of new clothing purchased by Americans has increased. The volume of clothing manufactured rose as a result of the significant fashion epidemic. As a result, we now have what is known as quick fashion. The rapid rise of the fast fashion business has been aided by globalisation. Global garment retail sales hit a record high of 1.9 trillion dollars in 2019; this figure is predicted to quadruple to three trillion dollars by 2030. Fast fashion may also be defined as the overproduction of clothing, footwear, accessories, and other items. This exponential growth necessitates the acquisition of additional resources as well as a faster manufacturing process.

The quick creation of garments as a result of the rapid consumption of consumers is one of the key contributors to the rapid production of pollution. Many of these fast fashion goods are purchased by individuals who, owing to inflation, are unable to buy name labels. These people, however, do not have that luxury, as inflation is leading even fast fashion costs to rise. The globe as a whole consumes more than 80 billion pieces of apparel each year. Because the majority of these products will be discarded at some point, they contribute to resource and trash pollution. People are consuming more than ever before, and they want it at lower prices. And the profit-driven corporations who manufacture these low-cost things want the outfits as soon as possible, resulting in a trend known as fast fashion. "An strategy to the design, development, and marketing of clothing designs that stresses making fashion trends rapidly and inexpensively available to customers,". The theory is that quick mass manufacturing paired with low labour costs will lower the cost of clothing for consumers, allowing fast fashion trends to continue to thrive economically.

The biggest issue with fast fashion is the amount of clothing trash it generates. Textile apparel waste amounted to 15.1 million tonnes in 2013, according to the Environmental Protection Agency. When textile clothing is discarded in landfills, the chemicals on the garments, such as dye, can harm the ecosystem by leaking into the earth. [requires citation] The additional trash adds to the problem of having to use so many locations only to store waste and rubbish. Unsold clothing produces CO2 into the environment when it is burnt. According to a World Resources Institute estimate, the fast fashion business emits 1.2 billion tonnes of CO2 into the sky each year.

SYNTHETIC FIBRES AND NATURAL FIBRES

Another issue that has arisen as a result of the ongoing increase in the amount of clothes consumed is that the clothing is no longer created from natural materials/crops. Clothing used to be made primarily of "natural fibres" like wool, cotton, and silk. Natural fibres are being phased out in favour of less expensive synthetic textile fibres like polyester and nylon. Polyester is one of the most widely used fibres in the fashion industry today, accounting for approximately 60% of all clothing sold in retail stores, or 21.3 million tonnes of polyester..

Polyester's popularity continues to grow, with a 157 percent increase in polyester clothing consumption between 2000 and 2015. Coal, petroleum, air, and water, two of which are fossil

fuels, are used to make synthetic polyester. When coal is burned, it emits large amounts of carbon dioxide into the atmosphere. Particulate matter, nitrogen oxides, carbon monoxide, hydrogen sulphide, and sulphur dioxide are all produced when petroleum is burned.

The production of polyester, as well as the finished product, pollutes the environment. Polyester is "non-biodegradable," which means it will never degrade into a state that can be found in nature. Polyester can be deemed energy intensive with no net gain due to all of the time and resources it takes to create it and its inability to revert to a state where it can contribute to any natural nutrition cycles.

Micro plastics shed and enter the water system when polyester clothing is laundered, causing micro contamination in waterways, especially the oceans. Because of the small size of micro contaminants, they are easily absorbed by fish in streams. Humans can then ingest the fish, and in a process known as biomagnification, these humans will absorb the polyester micro contaminants in the fish.

Water eutrophication is an environmental phenomena that results in the depletion of oxygen when pesticides cause an increase in plant growth and death. Wool and leather, which are made from animals, have a significant environmental impact, accounting for 14.5 percent of world greenhouse gas emissions in 2005. Cattle's digestive tracts use a process known as foregut fermentation, which produces methane as a by-product.

CO2 and N2O are emitted into the atmosphere as by-products of growing the animals, in addition to the CH4 generated by the ruminants. In total, enteric fermentation accounts for 44% of livestock emissions, while feed accounts for 41%, manure accounts for 10%, and energy consumption accounts for 5%. Linen (made from flax) is regarded a superior option for temperate climates. Hemp appears to be a nice option as well. [33] The use of seaweed in textiles is on the horizon. Bio fabricated leather would be an excellent replacement to leather.

SLOW FASHION MOVEMENT AND SUSTAINABLE FASHION

The slow fashion movement emerged as a response to fast fashion cycles and ‘unsustainable’ business growth. It encourages ethical behaviour, reduced fashion manufacturing, and the purchase of quality goods over quantity. Slow fashion, and more especially sustainable fashion, aims to empower workers across the supply chain by utilising renewable and organic raw materials, as well as upcycling, recycling, and traditional production processes.

Slow fashion, as a result, departs from existing industry methods of growth-based fashion, necessitating a shift in system thinking, infrastructure, and goods throughput. A balanced approach to fashion manufacturing, which develops long-term connections, builds local production, and focuses on transparency, is critical to the slow fashion movement and sustainable fashion. Since the Rana Plaza catastrophe, which prompted improved supply chain checks and openness across the production process, the latter part has gotten more attention. Slow fashion's original meaning emphasises sustainability values and ethical behaviour, but the media only seems to promote sustainable fashion as garments that are 'less fast,' which is exacerbated by the fact that slow fashion companies typically produce collections only twice a year for Spring/Summer and Autumn/Winter.

Although environmental changes have already occurred, such as the introduction of organic materials or the promotion of sustainable collections (e.g., the H&M conscious line), which should make it easier for organisations to promote sustainable fashion, "mobilisation of a sustainable fashion system is both complex and difficult," according to the report. There are

several obstacles to mobilising sustainable fashion: first, transparency in a globalised supply chain is not always possible. Manufacturers are under pressure to decrease their prices and cut shortcuts in order to stay competitive. Second, greater garment manufacturing and availability fuels a 'fashion hunger,' bridging the gap between customers who want to buy sustainable fashion but don't always do so. This could be due to a lack of knowledge and awareness, which may hinder further development of sustainable fashion. Third, in a competitive environment such as the fashion industry, it is vital to distinguish oneself from others, which can be achieved through 'greenization'

SUSTAINABLE CLOTHING

Fabrics created from environmentally friendly resources, such as sustainably cultivated fibre crops or recycled materials, are referred to as sustainable apparel. It also refers to the process of creating these fabrics. Historically, being environmentally conscious about clothing meant caring for, repairing, and patching clothes, inheriting and using hand-me-downs within one's extended family and community, purchasing clothing from thrift stores or other shops that sell second-hand clothing, or donating used clothing to the shops mentioned previously for reuse or resale.

With the current emphasis on sustainability and being "green," sustainable clothing has evolved to include reducing the amount of clothing that is overproduced, incinerated, or discarded to landfills, as well as lowering the environmental impact of agro-chemicals used in the production of conventional fibre crops (e.g. cotton).

The environment defines the "three pillars" of sustainability (earth, life).Recycled clothes adheres to the "Three R's of the Environment": Reduce, Reuse, and Recycle, as well as the "Three Legs of Sustainability": Economics, Ecology, and Social Equity, in terms of sustainability.

The use of recycled materials in clothes manufacture adds to the economic world's profit potential. Sustainable Clothing will open up a new market for more job opportunities, a steady flow of money in the global economy, and a reduction in raw material and virgin resource usage. Reduced use of raw materials and virgin resources, as well as the resources and carbon emissions associated with transportation, can minimise carbon emissions during the manufacturing process. This also avoids unsustainable resource extraction from the Earth by repurposing what has already been used (i.e. recycling).

There are numerous advantages to wearing sustainable clothing. Some of the benefits include the use of less water; the reduction of toxic waste, the reduction of pesticides released into the environment, and improved quality. There are many more advantages to wearing sustainable clothing, but these are the most visible and beneficial to both us and the environment.

RECYCLED CLOTHING

Fibers that have been recycled or reclaimed come from either pre- or post-consumer sources. Unworn/unused textile wastes from all phases of production fall into the 'pre-consumer' category. Any product that has been worn/used and has (usually) been discarded or donated to charities is considered post-consumer textile waste. They can be shredded (pulled in the UK, or picked in the US) into a fibrous form after being sorted for quality and colour. These fibres can be blended together or with 'new' fibre depending on the specification and end-use.

While most textiles can be recycled, they are typically reduced into low-quality end-uses, such as filler materials, practically immediately. The limited range of recycled materials accessible

reflects the dominance of low-cost virgin fibres on the market and the recycling industry's lack of technological innovation. For almost 200 years, recycling technology has remained the same: fibres are removed from used fabric using carding machines, which mechanically break the fabric apart. The technique causes the fibres to break, resulting in significantly shorter lengths and a low-quality yarn. Textiles composed of synthetic fibres can also be chemically recycled by a process that requires molecularly breaking down the fibre and then depolymerizing the feedstock. While chemical recycling consumes more energy than mechanical pulling, the quality of the fibre produced is more consistent. Polyester derived from plastic bottles is the most common recycled synthetic fibre, but recycled nylon is also available.

Clothes can be donated to charities, sold in consignment shops, or recycled into other materials, in addition to helping a healthier environment by manufacturing newer clothing produced with sustainable, innovative materials. These strategies help to limit the amount of space that discarded clothing takes up in landfills. Clothing is defined as non-durable – textiles that endure less than three years – by the United States Environmental Protection Agency's 2008 Report on Municipal Solid Waste (MSW) Generation, Recycling, and Disposal in the United States. In 2008, 8.78 million tonnes of textiles were produced; 1.45 million tonnes were recovered and rescued from landfills, resulting in an almost 17 percent recovery rate.

According to the EPA report, 54 percent of MSW is "discarded," 33 percent is "recovered," and 13 percent is "combusted with energy recovery." Garment is the fastest-growing component of garbage in the domestic waste stream, accounting for over two-thirds of all clothing materials shipped to landfills. In the five years leading up to 2009, the percentage of textiles disposed of in landfills had risen from 7% to 30%.

UPCYCLING FASHION

In the fashion industry, up cycling refers to the technique of repurposing unwanted and discarded materials (such as fabric scraps or clothing) into new materials or goods while maintaining the value and quality of the original item. It is necessary to have an overview of the available textile waste in order to perform the up cycling method because this determines the type of garment that may be made. The necessity of a local approach is highlighted by the use of up cycling in fashion design. As a result, both the input material (waste) and the output material (manufacturing) should ideally be local. Because levels of trash production and volumes vary by region, conducting a local textile waste research is the first stage in gathering materials for up cycling. The definition of textile waste can be production waste, pre-consumer waste, and post-consumer waste.

Upcycling usually results in the creation of something new and better from old, worn, or discarded items. Upcycling necessitates a combination of qualities such as environmental awareness, creativity, ingenuity, and hard labour, and resulting in a one-of-a-kind, long-lasting product. The goal of upcycling is to create things that are truly sustainable, economical, innovative, and creative. Down cycling, for example, develops cleaning rags from old T-shirts, but up cycling transforms the shirts into a value-added item such as a one-of-a-kind handmade braided rug.

One of the waste management solutions that can be used is upcycling. There are numerous strategies to choose from. The strategies are product reuse, product repair and reconditioning to maintain products as long as feasible, and raw material recycling, in order of least to most resource-intensive. The 'as is' reuse of textile products saves the environment significantly. In the case of clothing, the energy required gathering, sort, and resale worn apparel is 10 to 20 times lower than that required to manufacture a new piece.

It is intended to be inventive by repurposing and improving specific materials, giving businesses and manufacturers a higher value for their products. Because recycling is such an important part of sustainability, developing new materials to avoid mass pollution can aid the economy. Ecoalf is an example of a company that accomplishes this. All of the apparel is constructed from recycled materials such as old tyres and plastic bottles. Their things are also made wherever recyclable materials are available, lowering their carbon footprint.

Circular fashion has several advantages, including less reliance on imported raw materials, the establishment of environmentally friendly enterprises and jobs, a better public image for environmentally friendly brands, and a reduction in environmental damage caused by resource exploitation. On the other side, disadvantages include reliance on consumer behaviour, the difficulty of developing a new business model based on recycled materials, and the need to integrate the complete product life cycle from raw material to disposal.

CONCLUSION

The advantages of circular fashion include: reduced dependency on imported raw materials, creation of eco- friendly industries and jobs, eco-friendly brands benefit from a better public image, and reduction in environmental damage caused by resource extraction. On the other hand, disadvantages include dependency on the consumer's actions, creating a new business model on the basis of recycled is tough, and the entire cycle requires integrating product life cycle from raw material to disposal.

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INVESTIGATING THE EFFECT OF ANTIMICROBIAL AND BLOOD REPELLENT FINISH APPLIED ON COTTON AND POLYESTER/COTTON BLENDS.

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ABSTRACT

Background: Antimicrobial and blood repellent finish has been applied to 100% cotton and 70/30 polyester/cotton fabrics, which is used for surgical gowns and hospital wear.

Methods: The antimicrobial finish applied on cotton and PET/Cotton blend by using silver and blood repellency finish were given by the Fluorocarbon by the application of Pad-Dry-Cure technique. The finished fabrics were analyzed with the following properties like a tensile, tear, drapeability, air permeability, spray test, antimicrobial property and blood repellency.

Results: The antimicrobial activity on cotton fabric was good compared with the PET/Cotton blends. The fabric finished with silver particles shows a better zone of inhibition against both E. coli and S. aureus, the zone of inhibition 12 mm is for cotton and 6 mm is for polyester/cotton blend.

Keywords: *Antimicrobial, Blood Repellency, Fluorocarbon, Repellent Finish, Silver.*

INTRODUCTION

Mostly in hospitals, sterilized gowns are used during the surgery for protection purposes. But it is not a permanent solution, every time the sterilization process must carry out otherwise the micro-organisms will affect the doctors. So the functional finishes may be the permanent or alternate solution to overcome the problem that now exists. The important factor is the comfort properties of the surgical gowns so the properties of the fabrics are very important. So the selection of the fabric type is very important. Textile products can provide all such requirements for bacterial growth, which result in a range of undesirable side effects. The presence of microorganisms can cause health problems, odour and finally fabric de orientation. As microbes often attack the additives applied to the textiles, discolouration and loss of its functional properties such as elasticity. Among the side effects for the fabric also exists the side effect for the human in contact with the textile which is with the presence of microorganisms. So the functional finishes such as antimicrobial finishes and blood repellent finishes on the surgical fabrics will help to protect the patients and doctors.

Surgical gowns & surgical face masks are important components of surgical apparel. They are expected to perform as barriers and provide increased protection to the health care workers. In the textile sector, nanotechnology is expected to hold considerable potential for the development of new materials. Cotton, polyester and their blended fabrics are used as the surgical gown and they are coated with hydrophobic agents by impregnating the fabrics to protect against bacteria.

In textile, nanotechnology is expected to hold considerable potential for the development of new materials. Apart from improving their functionality, the use of Nanoengineering could lead to the production of textiles with completely novel properties or the combination of various functions in one fabric. These "multifunctional" textiles could open the way for the use of textile products in applications fields outside of the traditional industries for example in the construction or medical sector.

The various textile materials for hospital wear like surgical gown, drapes, masks and pillow covers needs protection from bacterial infection like Pseudomonas, Caudida, S.aureus and E.coli. The wash and reuse are some of the methods but it has some difficulties. So the coated materials will act as a barrier against the growth of microorganisms.

Hospital wears which is made up of cotton materials will readily accept the various type's microorganisms and it's not safe for the wearer's. The antimicrobial agents like natural herbs and silver will inhibit the growth of bacteria on hospital wear (which is made up of cotton and natural fiber materials).

By the application of low-temperature plasma with the oxygen gas with the onion extract on cotton fabrics was showing good inhibition against microorganisms.

The antibacterial activity by the application of triclosan on cotton materials was analyzed, in that best inhibition against the S. aureus was observed.

Extract from aloe vera gel for the antibacterial finish is applied on cotton fabrics, to analyze inhibition against the bacteria. It's excellent antibacterial inhibition against pseudo and E coli and good results against B.subtilis and B.pumilus bacteria.

Silver-based antimicrobial finishes show more inhibition against S. aureus and E. coli in cotton fabrics in various concentrations compare to chitosan-based finishes, this one does not create any major changes in the physical properties of cotton materials.

Silver treated cellulosic materials will have more durability than cotton materials compare to other types of antimicrobial agents.

The antimicrobial effectiveness and blood repellent effect in neem extract-treated fluoropolymer treated fabric increases the blood repellency on cotton fabrics. Cotton fabric blood repellency was increased when we increase the concentration level of fluoropolymer.

MATERIALS AND METHODS

Fabric preparation

100% Cotton and Polyester-Cotton (70:30) woven fabric, made up of 40 Ne yarn with 38 warp ends per cm and 34 picks per cm were dyed with vat dye (Jade Green 2G) and disperse dye (Cotton - Blue MR, Polyester - Sky blue colour) before the application of antimicrobial and blood repellent finish.

Application of antimicrobial and blood repellent finish

Pad-dry cure method

The fabrics were finished with antimicrobial and blood repellent finishes by using silver (Sanitized TH 2227) and Fluorocarbon (Nuva N 2155) respectively. The fabric was padded with those chemicals to attain a wet pick-up of 85%, dried then cured at 140^{o}C for 1 min.

Tensile and tearing strength

Tensile strength of finished and unfinished fabric sample was tested by grab method according to ASTM D 5035-95. The tearing strength of the fabric sample was assessed according to the standard test method of ASTM D 2261.

Drapeability

The samples were conditioned in a standard atmosphere and the fabric drape coefficient was measured according to the method of testing specified in BS 1051.

Air permeability

Air permeability of the finished and unfinished fabric was tested as per the standard procedure ASTM D 737 using a Premier air permeability tester.

Spray Test

Water sprayed against the surface of a test specimen under control conditions produces a wetted pattern whose size depends on the relative repellency of the fabric. Specimen of 18 × 18 cm size was conditioned at 65 ± 2% RH and 21° ± 1°C. Evaluation is accomplished by comparing the wetted pattern with the observations as mentioned in the following standard rating. The spray rating is determined by comparing the appearance of the tested specimen with descriptive standards and photographs. The AATCC Spray Test Rating Chart is available for reference.

Table 1. Standard observation rating

100 (ISO-5)	No Sticking or wetting of the specimen face
90 (ISO-4)	Slight random sticking or wetting of the specimen face
80 (ISO-3)	Wetting of specimen face at spray points
70 (ISO-2)	Partial wetting of the specimen face beyond the spray points
50 (ISO-1)	Complete wetting of the entire specimen face beyond the spray points
0	Complete wetting of the entire face of the specimen

Characterization of dual finish

The surface morphology of plain-woven fabric was examined by Scanning Electron Microscope (SEM) with an accelerating voltage of 20Kv and current 10mA which is used to collect SEM images of the samples. The samples were analyzed through SEM to confirm the deposition of chemicals on the fabric.

Antimicrobial test

The antimicrobial properties of samples were evaluated quantitatively by measuring the reduction rate in the number of colonies (AATCC 100) and qualitatively by showing a clear zone of inhibition around the samples by the disk diffusion method. To evaluate the antimicrobial properties of the samples, three common pathogen bacteria were used including Staphylococcus Aureus (Gram-Positive), Escherichia Coli (Gram Negative).

Blood repellency test

The blood repellency of the sample was assessed according to ASTM F 1670 for testing the resistance of protective clothing material to synthetic blood.

RESULTS AND DISCUSSION

Tensile and tearing strength

The tensile behaviour of finished and unfinished fabrics was tested and results are shown in Figure 1. From Figure 1, it is clear that the tensile strength of finished fabrics is less than that of normal fabrics in the case of cotton. In the case of P/C fabrics, finished specimens show less tensile strength as compared to untreated fabrics. Hence the strength reduction that is normally associated with the finishing of fabrics is relatively less in the case of finishing. The reduction of tensile strength in both 100% cotton and polyester/cotton blend (70:30) is not that much compared with the unfinished sample.

Tear strength of finished Cotton and Polyester / Cotton fabrics are given in Figure 2. The tearing strength of finished cotton and P/C blend fabric shows less reduction. It is indicated in Figure no.2 [8].

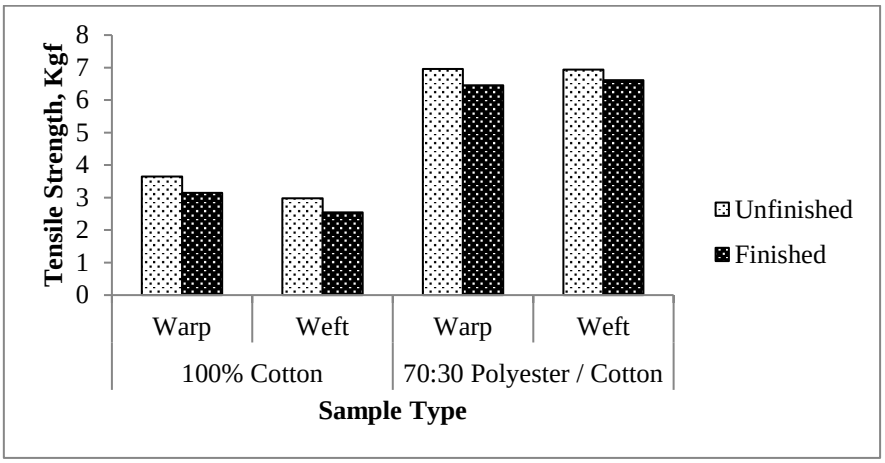

Fig.1.Tensile strength

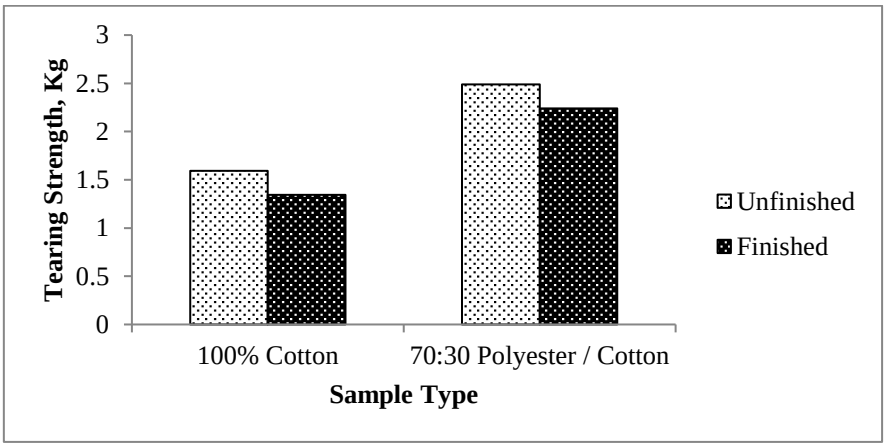

Fig.2.Tearing strength

Drape characteristics

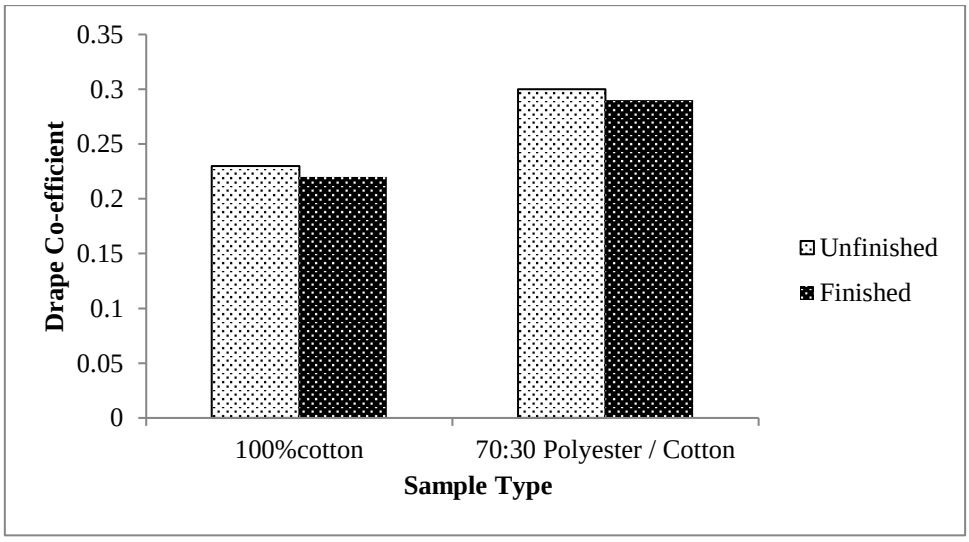

Fig.3.Drape co-efficient

The draping behaviour of finished Cotton and P/C fabrics are given in Figure 3. Finished fabrics show lesser drape co-efficient than untreated by 1 %, hence the drapeability of finished fabrics is better.

Air permeability

Air permeability tests were conducted for both unfinished and finished samples of 100% Cotton and 70:30 Polyester/ Cotton blends as per the ASTM D 737 test method. Air permeability resistance value is low for an unfinished sample since the pores are more and it is not blocked. Air permeability resistance is good for finished fabrics because here the pores are blocked by the finishes. In 100% Cotton no such change because this will have better absorbency compared to the polyester blend.

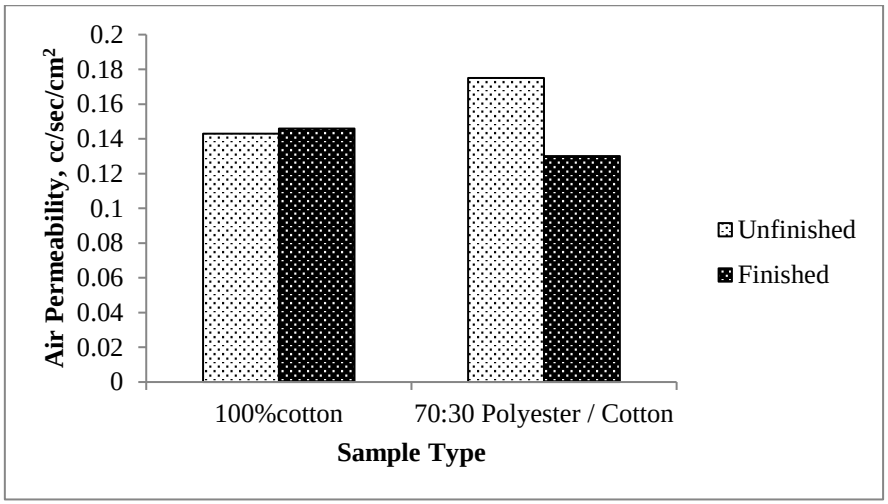

Fig.4.Air permeability

Spray test

Table 2 depicts the results of the spray test. It confirms that the deposition of fluorocarbon on both fabrics imparts blood repellency.

Table 2. Grading of spray test

Sample Type	Spray rating - Unfinished	Spray rating - Finished
100% Cotton	50	100
70:30- Polyester / Cotton	50	90

From the above Table No 2, both the cotton and Polyester/Cotton blend treated with fluorocarbon shows good repellency against the synthetic blood penetration test. Spray test results were compared with the grade chart and the results are sticking 100(ISO-5) or slight sticking 90(ISO-4) on the upper surface of the materials.

SEM analysis

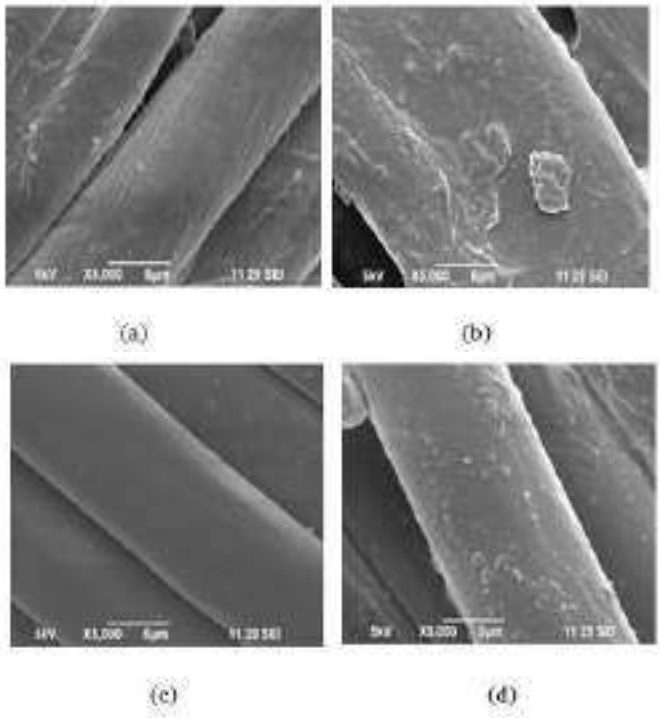

Fig.5. SEM Images, unfinished cotton (a), finished cotton (b), unfinished P/C (c), and finished P/C (d)

SEM analysis was carried out to ensure the uniform distribution of finished chemicals on the surface of the fabric. Figure 5 shows SEM micrographs of both unfinished and finished cotton and polyester/cotton fabric samples. It has been observed from Fig. 5 (b) and Fig. 5 (d) that the distribution of silver and fluorocarbon on fabric is uniform on the fiber surface.

Blood repellent

The synthetic blood repellency was evaluated using standard procedure ASTM F 1670. The blood was poured onto the samples according to the procedures for the impact penetration test. The amount of human blood sprayed on the specimens was about 10 ml. The results reveal that very little blood was absorbed on the surface of fabrics. An increase in the concentration of fluoropolymer will reduce the synthetic blood penetration in textile materials. Fluoropolymer shows better repellency against synthetic blood penetration [10].

Antimicrobial properties

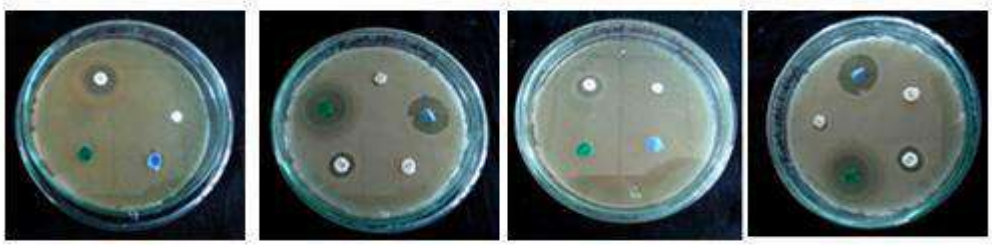

Fig.6. Photographic images of the zone of inhibition of unfinished fabric (a), and finished fabrics (b) against *E. coli* and *S.aureus.*

The antimicrobial activity of unfinished and finished fabric was tested against the bacterial strain E. coli, S. aureus and the results are shown in Fig. 6. The unfinished cotton fabric clearly shows zero antibacterial activity. The fabric finished with silver particles Fig. 6 (b) shows the better zone of inhibition against both E. coli and S. aureus, zone of inhibition 12 mm for cotton and 6 mm for polyester/cotton. This may be due to the presence of more silver particles on the fabric surface. Hence the antimicrobial efficiency of both cotton and viscose fabrics shows well with the silver coating. Increased concentration and temperature will make a better zone of inhibition.

CONCLUSION

In this study, surgical fabric with antimicrobial and blood repellent (liquid barrier) characteristics has been developed by finishing it with silver and fluorocarbon without considerable change in the air permeability and drapeability of the finished fabric. The fabric finished with silver particles shows a better zone of inhibition against both E. coli and S. aureus, the zone of inhibition 12 mm is for cotton and 6 mm is for polyester/cotton blend.

When we look out the spray test results, it's confirmed that the deposition of fluorocarbon on both fabrics imparts blood repellency. SEM image analysis was ensuring the even spreading of silver coatings. Because of the silver particles present on the surface of the fabrics, the antimicrobial activity has improved better compared to untreated fabrics. Compare to PET/Cotton blend the 100% Cotton fabric shows good results in antimicrobial and blood repellency tests, the reason is the better deposition of fluorocarbon on 100% cotton fabrics.

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STUDIES ON THE SUSTAINBLE AND ECO-FRIENDLY TEXTILE BY SEA AND OCEAN

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ABSTRACT

The seas accommodate numerous species of plants and animals that provide vast amounts of chemical and biological compounds unknown on land. These chemical and biological materials obtained from marine are used as raw materials in many industries from medicine to textile. These materials can be used as fiber and/or auxiliary products in various steps of the textile processing. Some marine algae contain large pigments such as chlorophyll, carotenoids, phycobili, beta-carotene, and lutein. Seaweed is rich in bioactive compounds, antioxidant and antimicrobial properties, and is not biodegradable and biocompatible with the skin. In this study the color was extracted from green seaweed which shows promising color for fabrics. Chitin biopolymer, chitosan, which is a derivative form of chitin, and alginate produced from seaweeds. They can be used in the fiber form and also alginate can be used in textile printing. Moreover, chitin and chitosan are used for surface modification applications. Natural dyes and also textile fiber can be obtained from some mussel species. Also novel high performance fibers with superior properties can be obtained from the sea such as hagfish slime. There are many ongoing studies for better understanding the sea sources for many different applications. In this review, textiles materials from seas and oceans are explored and reported.

INTRODUCTION

Seaweed is rich in bioactive compounds, antimicrobial and antioxidant properties and is not compatible with the skin and biodegradable. In the ulvaceae family, it is edible green algae. In the ulvaceae family, it is edible green algae. Some marine algae contain large pigments such as chlorophyll, carotenoids, phycobili, beta-carotene, and lutein. Seaweed is rich in bioactive compounds, antioxidant and antimicrobial properties, and is not biodegradable and biocompatible with the skin. The process of seaweed involves polysaccharides, polysaccharides, lipids, proteins, carotenoids, vitamins, sterols, enzymes and antibiotics. It is especially rich in polyphones, fucoidans and carotenoids. Alkaloids, terpenes, terpenoids, agar agar, algin, and phloro tannin are antimicrobial compounds known in seaweeds.32 cholrophyta, 64 phaeophyta and 125 rhodophyta total 250 species worldwide. It can remove toxic metals such as copper, zinc and cadmium ions, nickel, lead and can be used in the dyeing process depending on the seaweed.Using ulvans and oligo ulvans, natural dyes are extracted from the green seaweed and serve as color producing pigments. Ulvans are water soluble pigments that have been used to absorb green color and to transport it to the surface of the fibre. The primary pigment for Ulvans in seaweed. The dyes are extracted from sea weed. Ulvans main pigment in seaweed. The nutritional analyses of seaweed have shown high amount of carbohydrates as well as minerals, vitamins, iodine. It is used for dye effluent treatment.

Methodology

Chitin and Chitosan : Chitin, the second most naturally occurring polymer following cellulose, is a polysaccharide found in the outer skeleton of arthropods such as insects, crabs, shrimps, and lobsters as well as in the cell walls of some fungi and yeast. Chitosanis a modified carbohydrate polymer derived from Chitin. Both Chitin and Chitosan are natural resources which produced from waste products of the seafood industry such as crabing and shrimp canning. Chemical structures of chitin and chitosan are similar to cellulose.

The methods of chitin and chitosan production can be categorized into two groups as chemical and biological. However, all of them have four main production stages: deproteinization, demineralization, decolorization and deacetylation

Characteristics of Chitin and Chitosan

Chitin and Chitosan which has similar linear structure with cellulose, natural and renewable polymers. They have semi crystalline structures, good complex formation with metals and they are able to form films, fibers and gels. These polymers have also some excellent properties such as biodegradability, bio-compatibility, non-toxicity and adsorption. Chitin is highly hygroscopic and cannot be dissolved in water and in most organic solvents. Also chitosan cannot be dissolved in water however, it is soluble in acidic aqueous solution and in some selective Nalkylidinations Chitin can be processed in the form of films and fibers.

Wet spinning is commonly used for producing chitin and chitosan fibers because their high thermal degradation temperatures limit melt spinning process usage. Also dry spinning process is not so practical resulting from their high boiling temperatures. In wet spinning processes, firstly polymer solution is prepared by dissolving the polymer in a 14% NaOH solution. After the solution is filtered, it is degassed and finally it is extruded through fine holes, spinneret, in to a solvent-coagulant system. It is possible to change spin ability of the chitin solutions with increasing temperature of the coagulation bath and the addition of suitable plasticizer to the spinning solution.

A viscose method from chitin xanthate is used in the production of regenerated Chitosan fibers. Initially, chitin is transformed into chitin xanthate by treatment with 40% NaOH at room temperature. After the removal of caustic from the solution, chitin xanthate and crushed ice are mixed. As soon as the solution became ready for spinning processes, spinning solution is filtered, degassed and spun into a coagulation bath containing 8-10% sulphuric acid, 25% sodium sulphate and 1-3% zinc sulphate. Regenerated Chitosan fibers also can be mixed/blended other fibers from natural and/or synthetic polymers for their bio-function

Textile Applications of Chitin and Chitosan

Chitin and chitosan are widely used in various industries ranging from health and beauty aids to water purification, biomedical applications, agriculture, biotechnology, nutrition, textile fibers and treatments in the finishing process of textile production. Textile chemicals widely used in pretreatment and finishing processes of textiles are an inseparable part of textile industry. However, textile industry and these chemicals mostly cause environmental pollution. Therefore, the use of biodegradable, non-toxic, sustainable, eco friendly materials become very important. Also chitosan is able to remove dyes from the effluents. Furthermore, both chitin and chitosan are suitable to utilize in medical textiles such as textile sutures, wound dressings, artificial skin and medical diaphragms.

Conclusions

Today various chemical and biological materials, which are obtained from sea creatures, create huge resources for many different industries. Not only textile industry but also many other industries use these materials, exhibiting unique properties. Day by day, their importance is increasing to produce eco friendly materials for eco-friendly life style. Although, only chitin and chitosan have commercial production, it is believed that there are still more substances, which can be obtained from sea creatures with superior properties, out there in the sea.

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NARRATIVES OF A FASHION PRACTITIONERS

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ABSTRACT

When fashion weeks are of significant importance since in addition to new designs to present when collections are completed fashion designers introduce them through the fashion show, a field used to present their collection ideas in an impressive and striking manners. Fashion shows have a strong impact due to the atmosphere created which is surrounded by music, video art, performance and stage. Thus an artistic approach is key when designing a show in order to reveal the collections ideas in its most relevant form.

A Fashion designer creates clothing, including dresses, suits, pants and skirts and accessories like shoes and handbags for consumers. Frederick worth who was the first designer to have his label sewn into the garments that he created, Worth's success was such that he able dictate to his customers what they should wear, instead just following their lead. Designers in Fashion Houses are no longer working with two collections per year, Fall/ Winter and Spring/Summer. They are constantly searching for fresh idea and creating new products in order to meet their customer's aspirations.

Fashion and Branding have become powerful forces in the contemporary world, Fashion models, central Players in these developments, are Lighting rods for controversy and objects of desire.

This Paper is attempted to identity Research opportunities for the future, offer Recommendations for Fashion Practitioners.

Keywords: *Fashion show, artistic approach, designer, creating new products, fashion model, central players.*

INTRODUCTION:

Fashion weeks are of significant importance since in addition to new designs to present, within those weeks a fashion shows' effect sometimes moves ahead of the designs. When collections are completed, fashion designers introduce them through the "fashion show," a field used to present their collection ideas in an impressive and striking manner. Through this form, the designer employs performative presentation to help put across the intellectual message, the allure of a fashionable creation, or to mediate diverse creations in a visual way as a collection.

Fashion shows have a strong impact due to the atmosphere created which is surrounded by music, video art, performance and stage design. These 20-25 minute shows represent the whole collection through the background idea of the collection and designer's inner world, by using colors, textures, stories, forms and visuals.

Thus, an artistic approach is key when designing a show in order to reveal the collection's idea in its most relevant form. The aim of this paper is to examine how fashion shows are curated by artistic applications and to reveal the ways of narrating stories which are not written but are conveyed to communities through performative presentations. In this respect, an interpretative approach was adopted and related artistic applications from contemporary examples held between 2013 and 2018 were analyzed as part of narrating a collection.

Definition for Fashion Show:

The definition of a fashion show has been described as "a biannual presentation of a new clothing collection on moving bodies for an audience" (Skov et al., 2009: 2).

Didier Grumbach, the former president of Chambre Syndicale de Haute Couture also stated that the fashion show is a tool that means to narrate a designer's ideas (Tungate, 2006: 161).

Over one-hundred years since inception, today's fashion show is more abundant and the means more varied.

From the "manikin doll" type to the professional catwalk performance seen in the commercial world, to the international costume design and modeling competitions as well as the artistic program which aims to satisfy an audience's appreciation of beauty, the fashion show has formed into a rich and colorful performance type.

FASHION SHOWS

The most artistic aspect of fashion is normally linked to its display the idea of dressing models, parading them down a catwalk, and premiering a new collection to the press. By the mid-1930's, the shows were produced on a grand scale, and in the 1960's, sound and light were integrated into runway productions.

In Europe, based on the works of Charles Frederick Worth, Paul Poiret, and

Lucile (known as Lucy Christiana, Lady Duff-Gordon), the concept of the fashion designer was pioneered in the early 20th century, with designers such as Lucile and Worth starting to organize fashion shows that employed professional models in order to promote their fashion houses. These designers scarcely have imagined how fashion shows would develop towards the end of the century.

Fashion shows have progressed immeasurably since, an today they significantly utilize performance arts and digital technologies in order to create different effects.

With the widespread art of the fashion show and the developments of public catwalks, fashion show have become more and more part of public recreation.

Thus, to reflect the sentiment of a collection as accurately as possible, organizing a fashion show requires a significant degree of artistic approach. At this point it can be argued that throughout history, the interaction between fashion and art was not limited to creative processes, but also in its presentation and the relay of created products and designs. Of equal importance is that through fashion shows, designers or brands can fully control the aesthetic vision or concept.

It is now the fashion show that makes a designer an artist, and not merely a dressmaker. It can be argued that through performance, fashion designers have adopted a role of "designer-as-artist" (Duggan, 2001: 268).

Artistic perspective is not limited to the creation of fashion trends and designs, but is now asrequirement of fashion shows as well. Thus, the fashion and art world is now close to being an "art of Fashion Shows"

One of the most significant stage designers has been Alexandre de Betak. This chief designer in the French design house of Bureau Betak has become one of the most powerful names in the field through his stage designs over more than 25 years. The designer has worked with John Galliano, Hussein Chalayan, Christian Dior, Victoria's Secret, and Viktor and Rolf. The designers pulled the collection pieces from the models

and hung them on the stage walls in Viktor and Rolf's fall-winter 2015 show, and realized a performance that reflected the central theme of the collection inspired from picture frames. Designers also collaborate with the art of cinema. An example took place with Kenzo and David Lynch.

Recently, some fashion shows have used digital images and omitted traditional elements of the fashion show such as models, stages, garments, music and even audiences. Kenzo's Spring-Summer 2013 show at Paris Fashion Week was a 22×8 meter-high cube onto which projections from eight synchronized 22,000-lumen projectors created busy and colorful scenography in order to create a digital jungle environment. In another example, Bureau Betak, in the Peter Pilotto for Target

launch at Gotham Hall, placed modular screens and mirrors on the stage and reflected both the designs of Peter Pilotto's collection and Target's logo on the screen using mapping and video graphics.

Es Devlin is also known as a stage designer which designed Louis Vuitton's Spring-Summer 2015 show by using gigantic mirrors and LED screens for an audience communication tool from the inside of the stage itself.

For Marc Jacobs' fall-winter 2014 collection, 500 grey and violet foam clouds were mounted on the catwalk ceiling. The "Happy Days Are Here Again" song, sung by actor Jessica Lange, reflected a dark and powerful period instead of happy and good times. The stage designer for the show, Stefan Beckman, said "We wanted the clouds to be grey, not happy and white," and the designer Marc Jacobs said "It is necessary to transmit a little discomfort in the emotion of comfort," and these comments reflected their views on the types of emotions communicated to the audience according to the intended atmosphere created by the show.

The eye catching fashion show stage

According to Elizabeth Currid, New York City is often an inspiration for artists and designers because of its modern, social, dynamic, active and vibrant structure.New York is a global city that determines and influences various movements worldwide (Warf, 2000). The neon colors used for the collection reminded the audience of city lights.

Kepes explained the effects and inspiration of city lights on the audience as rich aesthetic potentials for creating color palettes of the new urban art that would help to connect to the urban character. Based on this assessment by Kepes, it could be argued that city lights are a very effective element in the creative process for artists and designers; it is possible to perceive city lights as one of the opportunities of inspiration offered to an audience. For this show, DKNY also used the different colors and textures of the city as a display for the catwalk; with constructions of Brooklyn Bridge, wall bricks, and pinkish colors of the streets. The various components of the shows -model choice, music, visuals, stage design and location- are further enhanced by the introduction of a theme. Often called from a source of nspiration for the season, themes can be specific or very abstract. Because these themes are used for many purposes, including the show's invitation, the production, and the clothing line itself, they must be easily identifiable and memorable.

Designer and Product

Due to technological advancement, fierce competition, and the fluctuations of changing consumer tastes and market demand, fashion designers must response much quicker to the evolving global market, and to create products with 'newness' and 'uniqueness' that differentiate them from their rivals. In order to understand what determines the success and failure of a product, it is essential to understand the design mechanism.

A conceptual model was proposed for this study based on literature review include Don Norman's three aspects of design. As indicated in the Table, visual design, behavioural design, and reflective design are aspects that should be considered when designing and developing a new product for today's consumer market.

Visual Design with Aesthetic Values :

The appearance of a product can stimulate an aesthetic response that creates a sensory experience (especially through vision). Fashion designers are viewed as an encoder of information sources, the product is regarded as a transmitter of idea and image, and the consumer is considered to be the receiver or decoder. In order to create an aesthetic product that will attract the attention of their consumers, designers constructively and intentionally use various design elements and principles such as line, space, shape/form, light, colour, texture, pattern, repetition, parallelism, sequence, alternation, gradation, transition, radiation, rhythm, concentricity, contrast, emphasis, proportion, scale, balance, harmony and unity in their designs to shape the appearance and quality of their work.

Behavioral Design with Utilitarian Values and Experiential Values :

Behavioral design is comprised of two primary components: utilitarian values and experiential values. Utilitarian values refer to functional benefits (e.g. fabric, quality, performance, fit, comfort) and economic values (e.g. price). Experiential values consist of sensory pleasure, affective pleasure and cognitive pleasure. Sensory pleasure relates to five human senses of sight, touch, taste, smell and hearing engaged when using a product.

Affective pleasure concerns consumer's psychological response and often refers to emotions, moods, and feelings towards an object (Crilly et al., 2004). Cognitive pleasure associates with consumer's experiential history, and his/her current experiences and knowledge of the product.

Reflective Design with Symbolic Meaning :

Reflection design signifies the private, social, cultural and symbolic meanings and messages that are imbued in a product during its use. Some consumers may choose a product more for the social image evoked or symbolic meaning attached rather than for its functional performance or sensory benefits.

These three aspects are interrelated with each other. Therefore, they should not be viewed as separate entities. In many cases, the visual form or appearance of a consumer product can enhance the performance properties of a consumer product and offer sensory pleasure all at the same time (Smets and Overbeeke, 1995). As an example, a pair of zip-off nylon pants can offers multiple attributes to the wearers. Self-identity can be constructed, developed or expressed through the product. A layer can be removed to create new style (appearance) and avoid overheating (performance), and the 'rustling' sound created by the movement of nylon fabric may be soothing and evoke a sensory pleasure.

Design and its Functions

Design plays a critical role in shaping and forming a new product; the translation, integration and communication of new ideas throughout the process of design and product development are continually being employed. Based on Trueman's (1998) design attributes, there are some ideas that adapt and extend the role of design: communicator, differentiator, integrator, and generator. First, design used as a communication tool conveys messages and ideas to the public. Likewise, it can be used as a means of constructing, developing and communicating the identity of the consumer (Elliott, 1999; Sinha, 2002). Second, the use of design can differentiate a product of one brand from other brands. Third, design can integrate new ideas and concepts into the product. Last, good design can generate more business and synergies for a company.

Fashion Models :

Fashion models as gender myths and cultural icons through a cultural history of modelling. It reveals the construction of models' personas by the successive addition of meaningful signs: physique, manner, attitude, nationality, class, race, salary, chamaleonism, slenderness, and so on. The models' glamour expresses economic and social power and promotes the values of consumerism, while exporting cultural ideals through visual neo-colonialism. On the basis of empirical material on models' experiences gathered from interviews, second oral sources and autobiographical material, bodies, identities and public personas as artefacts performed through the reiteration of collectively defined gender standards and practices. This approach overcomes the contrast cast in fashion discourse between visibility/invisibility, private/public, real/unreal while disclosing the hegemonic beauty standards as fiction

Conclusion:

Today, fashion shows require significant artistic and technological equipment. It is insufficient that just a fashion shows is being held; they have now entered into the expectations of how to present the story being told to the audience. As fashion sense is changing, we must think that fashion shows are also. Considering the relationship between fashion and art, "what is the fashion sense of the 21st century?" and "what is the art of 21st century?" should also be asked. Given the answer to these two questions in

the context of fashion shows, the subject of "technology" is undoubtedly under consideration. With the inclusion of technology in the fields of art and fashion, fashion shows now have a great potential to present almost all kinds of possibilities to the audience with its stimulating qualities and technical aspects. With the advancements in digital arts and technology and the nourishment of fashion through all aspects of art, designers are discovering new ways of reflecting the stories of their collections in more effective and surprising ways.

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REVIEW ON ANTIMICROBIAL TEXTILE FOR HEALTH CARE DEVELOPMENTS

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ABSTRACT

Growing awareness of health and hygiene product has increasing, particular products for bioactive or antimicrobial textile. Bio active finished product wearer from microorganism for aesthetic, hygiene and medical reason and protects textile fabric from bio deterioration caused by mold, mildew, and fungi. The current perspective key and challenges regarding and advanced on non-toxic and eco-friendly solution for health care. Different types of antimicrobial textiles including synthetic and eco friendly fiber including antibacterial and antifungal, antiviral also to be discussed. The different methods are used for the detection of textile antimicrobial properties agented the fungal and other infections. This variety of antimicrobial applications are used for different household cloths and commercial product for air filters, food packing, health care, hygiene medical and sport wear, water purification system also be used. Textile growth has been observed commercial products concentrate during past years. Not only textile fabric their same sides concentrate of durability along with color, print and designs are also important for fashionable clothing for antimicrobial agent along with current functional perspective and future opportunities. Overall, this article summarizes the scientific aspect dealing with different fabric aspect with different fabric including natural and synthetic antimicrobial agents along with their current functional perspective and future opportunities.

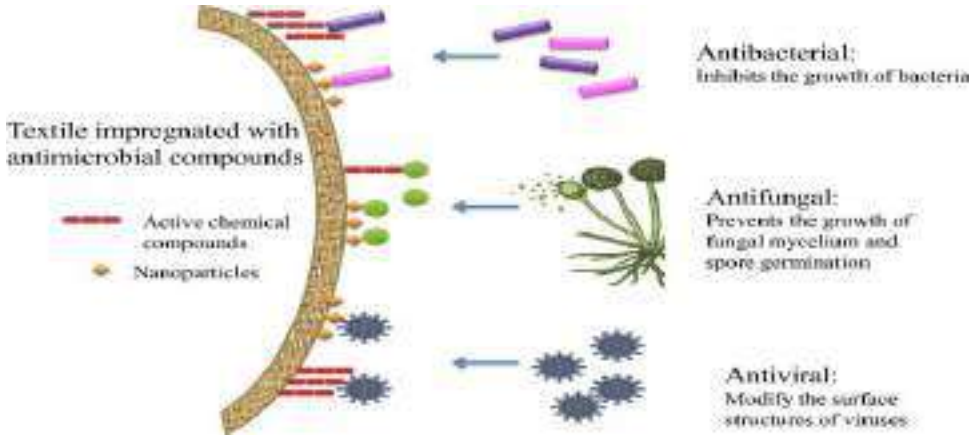
Keywords: *Antimicrobial agent, textile care, eco-friendly agent, textiles products and health impact*

1. INTRODUCTION

The textiles are on present and play an essential part in human society. Cloths may contain types of microbiology and the effect and interaction of cloths with human skin. The natural coating of antimicrobial agents on the textile's fabric used in ancient times. The development of anti-microbial textile has been one of the most important. Egyptians used herbal coating on cloths to prepare the mummy warp. Chinese traditionally used bamboo fibers, which contained an antimicrobial compound called bamboo Kun for housing structure fabric. The bamboo chemical those provided extraordinary fungal and bacterial properties and resistance. One of the responsible for bamboos antimicrobial properties is 2.6 dimethoxy-p-benzoquin one. Application of antibiotics development during the Second World War, and the same time use of antimicrobial to prevent rotting was also demand. Tents, tarpaulins and truck covers were required to be protected from microbial attack during heavy rain and snow that would destroy fibers and also increase the chances of infection. To protect the fabric from microbial colonization and increase their durability, several military fabrics were treated with antimony salts, copper and a mixture of chlorinated waxes, which not only stiffened the fabrics but also gave them a distinct odor. In antimicrobial textiles are useful in hospitals, environment and places that are prone to microbes, which are baleful. The clothes are used for medical purpose by the patients, healthcare workers and doctors may have a lot of microbes present on them, which can be transmitted easily from one person to another. Recently opportunities abound for antimicrobial fabrics whenever it is about controlling the spread of infectious microorganisms, Antimicrobial textiles can be termed based on their specificity against microbes, for antibacterial, antifungal, and antiviral. Several

antimicrobial textiles may also act against bacteria, fungi and viruses similar. Some chemicals may be used to target broad range of microbes and are generally termed as antimicrobial. Public area including hotels, restaurants, or trains such type of fabric is highly demanded, and the towel which is used to mop up fluids, curtain and carpet could be a source of infection. There is also unfulfilled requirementsfor odor control, which is another expanding research area in this field. The textile may contain several microorganisms that are anathema and may transfer from an infected person to others. The possible and effective way for reducing the microbial load from textile is by continuous laundering of clothes dry and reuse in hospitals where there are continuous shifts. Other hand, another way to reduce the chances of microbial infection from one person to others through the textile is by developing antimicrobial textiles. These antimicrobial textiles useful for the people involved in sanitary-related work and those who are working in sewage treatment, where there is a high risk of getting infected. Surface modification of the textile including electro spinning, nanotechnologies, plasma treatment, polymerization, and microencapsulation and sol–gel techniques has been done to impart some novel functional properties to textile, water-repellent, flame-retardant and antibacterial activity. Winter wear is gaining importance as these clothes are not washed frequently and rarely exposed to sunlight. These clothes are generally stored for a longer time, which may enable the growth of microbes and thus antimicrobial type fabric may be an appropriate option. Similarly, the antimicrobial textiles may also be useful in those places where non-plastic bags are used. Food packaging which generally involves degradable material is safer for the environments well as does not affect the food properties, however, the concept of antimicrobial coating in such wrappers is important to reduce the growth of pathogenic and food spoilage microbes. Primarily, the antimicrobial textile is required by the following sectors along with the appealing combination of color, print and design:

- Apparel: caps, jackets, sanitary pads, sportswear, undergarment, winter wear
- Commercial: carpets, covering for seats, window, vehicle, etc.; dusting cloths,
- military fabric, tent, uniform
- Health care: bandage, ear buds, scrub, mask, lab coats, protective kits
- Households: bedding, carpet, cover, curtains, mop, pillows, towel



Necessity of antimicrobial finishes:

Antimicrobial treatment for textile material following objectives:

- The control micro-organisms
- protect from of the fabric viral infection caused by pathogenic bacteria
- rate of optimized metabolism in microbes to reduce the generation of odor
- Quality of the textile materials from unexpected staining, fade out of color and quality deterioration to save the materials and products wastages.

Antimicrobial finishing for cotton

The natural fibers are more susceptible to microbial attack than synthetic fibers. The main component of the natural fiber is cellulose. Cellulose is not a direct source of nutrient to microbes, but some fungi secrete enzymes that break down cellulose in to glucose, which is a nutrient source for microorganisms. The other major nutrients for microorganisms are soil, dust, finishes etc. 'microbe' is generally used for in odor and stain in fabrics. The best example of bacterial growth in clothing is the familiar odor generated in the socks after few hours of wearing.

Onion-allium cepa

Onion consists of fiber, flavonoids and Sulphur compounds. When plant gets damaged or is stressed, it generates an antimicrobial agent called allicin. The antibacterial property of onion has been applied in textile industry by different researchers to improve the microbial resistance of fabric. Cotton fabric was pretreated with oxygen plasma and grafted with onion pulp extract at 70 °C for different dilution. The zone of inhibition values obtained was proportional to thegrafting time of pulp onion extraction, as suggested by Chen34. The Broad-spectrum activity of onion has been reported by Skergetet al,200935 after the antibacterial and antifungal activity of onion skin extract was tested against E. coli, P. fluorescence's, Cereus and A. Niger. The reports revealed that the antimicrobial activity of the edible part of onion was comparatively very less than the other parts.

Eucalyptus oil

Considering the cleansing property and antimicrobial property of eucalyptus oil, it is used for the development of functionalized textile to produce user friendly bacteria resistant fabric. It has been already reported for its antimicrobial activity against Mycobacterium tuberculosis, Candia alb cans and viruses. The main component is Eucalyptol (1,8-cineole) which has both antibacterial and antifungal activity. Antibacterial property of two different eucalyptus leaves such as E.cinera and E.odorata leaf extracts were applied on wool and cotton fabric by Ben Fadhelet al. Using acetone- water combination, the flavonoids extracted from leaves were treated on fabric and tested by AATCC 90 against E. coli and Aureus. Emorata was found to be more efficient on wool than cotton. Washing durability was reported: gradual decrease in antimicrobial activity was observed after a number of laundering cycles but wool exhibited better wash durability than cotton.

Turmeric oil

Turmeric oil extract was isolated as some modifice used two different concentrations of turmeric extracts/oil (6 and 12 μg in DMSO) were aseptically transferred to these discussions. The plant were incubated in an upright position at 37 °C for 24 h.for antifungal activity the select the fungi grown on czapeck dox agar medium and plates were incubated at 37 c.the mycelia diseases 5m diameter were cut a long with adhering from the 7 days old cultures and were used inoculums throught the present trust. Cur cumin nanoparticle with the size of 2–40 nm exhibits more significant antimicrobial activity against *S. aureus, E. coli, and P. aeruginosa*. Encapsulation of cur cumin in liposomes enhances its water disposability and increases its chemical stability, water dispensability and antioxidant and anti-inflammatory properties.

Applications of antimicrobial finishing activity:

The chemical used as an antimicrobial activity, its applied to the textile material applied by exhaust, pad-dry-cure, coating, spray and foam techniques. The substances can also be applied by directly adding into the fiber spinning dope. Various methods for improving the permanence of the finish such as:

- Solubilization of the capable substances in/on the fiber
- Apply the resin on the fiber, and improve the adhesion by cross linking agents;
- With the help of microbial agents protect the fiber matrix by micro covering;
- Application of finish on the fiber surface;
- Modifying the chemical structure of the fiber by forming the covalent bond; and
- Application of nano polymers, homo polymers and/or copolymer on to substrate.

Various tests to measure the antimicrobial activity of textiles

- This Method for testing white or light-colored goods
- To be used Method for testing dark colored goods
- Agar based on zone of inhibition test
- Bacteria counting testing
- Soil burial test.

Antimicrobial finishing with natural resources Recently,

Eco-friendliness has become very important for human beings and for those people who want to live in a world of hygiene and freshness. The major hindrance that comes in their way is coal-tar products, which are used in various operation of textile wet processing, some of which are criticized for environmental pollution and health hazards. So it becomes very important to replace those dyes and chemicals by more environmental friendly products obtained from natural resources. At present, natural antimicrobial agent finished articles fall in small niche markets fed by craft workers and small commercial firms, viz dyeing of fishing net. But today's small niche market can become a larger market tomorrow as has been shown for herbal teas and natural cosmetics. There has been little attempt to define and predict the market for natural products which possess coloristic as well as antimicrobial properties.

Conclusion

Antimicrobial finishing has become essential on each of the textiles, we use in our day-to-day life, so we can live in a fresher and more hygienic atmosphere. Treatment should also be given to all those textiles, which do not come in contact to the human body but need to be given the finish to increase the life of the product. It has been seen that the microbial attack of the textile materials can be tackled well with the application of antimicrobial finishes. Further research is required into ways of making eco-friendly antimicrobial finishes, since doubts have been raised about the toxicity and environmental persistence. The application of some natural colorants is satisfactory of such research.

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A STUDY ON SUSTAINABLE SANITARY NAPKIN

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ABSTRACT

In this review, Sanitary napkin is one of the basic necessities in a women's life. The basic properties of a fabric or fiber that can be used to make sanitary napkin. Layer of a commercial sanitary pad is discussed to get a clear knowledge about the structure of a sanitary napkin. The brands of sustainable sanitary pads, fibres used in it and the awareness among women about these products. A general comparison of all three sanitary pads is made for a better understanding. The commercial sanitary pads and reusable sanitary pads along with their advantages and disadvantages including health hazards. The commercial sanitary pads and reusable sanitary pads along with their advantages and disadvantages including health hazards.

Keywords: *Sanitary pads, Sustainable, Reusable pads.*

INTRODUCTION:

Women during their total 32 reproductive years are using pads. And the numbers of pads used by them during their estimated periods are shocking. Consider that for instance, if a women goes around 13 menstrual cycles for a given year and the napkin used by them for per cycle is considered as 11 then the average women who uses napkin requires averagely 4500 napkins for the whole of her life. In present scenario, in many developing countries the women are using old rags that which spreads diseases and which are not leakage proof.

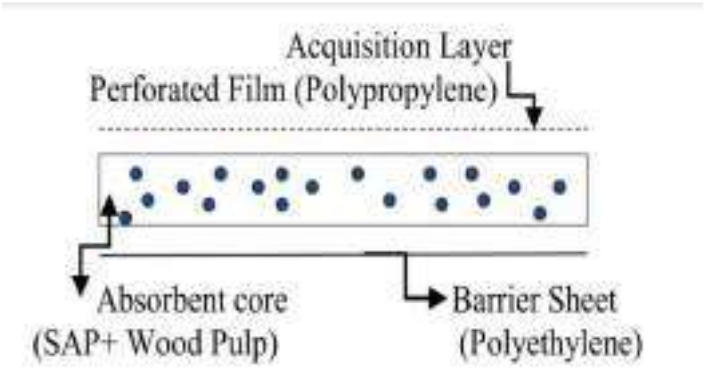
The solution for this to provide a reusable napkin is the most logical one for turn out the waste and that are affordable in the given problem of sustainability. Modern technologies now a days provides a tampons or menstrual cups in order to eliminate these requirements.

CHARACTERIZATION OF FABRIC

At their centre point, the fabrics are characterized in different zones. The material standards stands high with ranging from material performance, tolerance of leakage, identifying the fibers, heat resistant and many more.Weaves are defined according to their warp and weft their thread or yarn, and their ends per inch for tightness. Kawabata (1988) defines 16 standards to characterize the hand, or the "feel "of the fabric. The yarns are further measured according to a set of various units such as the denier (mass density), super S number (fineness of fiber), etc . the effective design requires the need for absorbing the discharge and retain them, be in touch with women without irritating their skin and with the waterproof outer part and fluid retaining in inside part of the napkin.In a reusable design for the developing world, this study adds to this list durability as well as rudimentary drying time. The problem of using a pad even if women use and wash pads, it is not acceptable to dry them out in the public places so for this problem the latter is included in the napkin. To study this, materials are tested in a specific manner to maximize the affordability, its absorbance,durability and re-usability of napkins, comfort to them and drying the napkins times are taken into the considerations.

CONVENTIONAL STRUCTURE AND MATERIALS USED IN A SANITARY NAPKIN

To know about the materials used for sanitary pads, first we have to understand the basic procedure how it works, their requirements and we have to select them accordingly. Thus the sanitary pads are classified in multi layer structure of pads, in which each layer perform a specific functions. It contains of three main layers : they are the top layer, absorbent core and a barrier sheet.



a) **Top core sheet**: It is designed in a way that the fluid is transferred from the top core to the second layer.The top core contains a fibre (thermoplastic) which prevents capillary collapse of the top layer and with the small amount of hydrophilic fibre absorbent to allow the layer to absorb the fluid. Polypropylene fibre is used in the commercially available in the top sheet.

b) Absorbent core:it is the mid sheet core between the top and the barrier sheet. Their function is to absorb and retain the fluid within them. This sheet is made as thin layer to make the user to feel comfort, soft and pliable. In olden days this sheet is made up of wood pulp but as of now, they are replaced by air laid wood pulp and SAP which is to improve its absorption. The absorbed liquid is turned into a jelly like substance by SAP so that it will not retreat back.

c) Barrier sheet or third layer:its main purpose is to seal the fluid and it prevents from staining or leakages. It is made up of polyethylene yet it is breathable. The some components in the napkins maybe disintegrate and there is a chance of bacterial attack in public or private sewage system of disposal. But the polymeric films or polyethylene used in the barrier sheet intact remains as this polymer which does not broken down bacteria and thus results in polluting of the environment.

HEALTH HZARDS OF SANITARY NAPKINS

Napkins are severelydangerous to user health. These napkins carries BPA and other harmful chemicals which are the cause for the cancer over the time and can damage the reproductive systems of the women. The chemicals like pesticides or herbicides in pads can enter their body directly to the bloodstream and affect the internal organs. These pads contains deodorants and fragrances to prevent the smell of the blood can cause infertility.

SUSTAINABLE SANITARY NAPKINS

The materials like bamboo fiber, banana fiber or cotton are used in producing new sustainable menstrual napkins which are biodegradable, compostable and reusable. Over the past few years in India, a new variety of new age started up which have been launched the most sustainable menstrual napkins. They are free from chemicals and plastics and are much comfortable and hygiene than the commercial napkins. They reduce the environmental pollution and also promotes the users health with some of the benefits like lesser skin rashes and infections.

The next process is to develop the awareness and adoption of GREEN menstrual things by following a new approach

Create a awareness through government lots of women are unaware of the impacts caused by the traditional pads in the environment.The awareness must be brought to them. And its starts from within the home. Cross campaigns with the collaborations between the pad industries and government can led people talking. Most of the women are not trusting the motivation to change to menstrual hygiene products over the ones they trust already. So the demonstration must be done with the benefits and ease to change to menstrual sustainable products.

Promote companies which manufacture sustainable products along with the arising awareness of these products, the availability of these pads are also be equally given importance. These companies can be encouraged by governments to manufacture the sustainable products by reducing taxes and giving the access to raw materials at low of economical level and loans with low interest. We need to form a community to ensure the need along with the making of napkins that are comfortable for women life. And we need to adopt the GREEN PRODUCTS awareness to start building the ecosystem of sustainable pads in India.

Eco Friendly Sanitary Napkins that are made in India

1. Sathi
2. Carmesi
3. Heyday
4. Everteen
5. Purganics
6. Vavanion
7. Anandi

Why it should be Bio-degradable Padsthe waste from the pads are not decomposed before 600-800 years, so the plastics are left behind remains These remaining which are left behind are the main reason for pollution and exploitation of water and lands resources. Not only they harm the nature but also the body of women's health it creates an great impact on them. These chemicals which are present in the napkins can cause allergic, irritations, rashes, and genital infections.at the end, it can lead to infertility too.

A few uses of using these Biodegradable Napkins are :

1. **Free from Rash& Irritation:** The skin in the intimate area are delicate which can react with plastics based napkins, hence these napkins from biodegradable are made up of extracts from plants which make them safe and more comfortable for them to use.
2. **Alternative for safer:** these sustainable pads are proven that they are alternative for safer use as plastic - bases napkins which can cause infections and reaction to harming the persons fertility.
3. **Free from Plastics:**As they are from from plastics, the health hazards risk are goes down to 0 and there is no side effects in the environment as well.
4. **Decomposes quickly:**As we know the plastic takes more than 600-800 years to decompose but these biodegradable pads can decomposes even more quickly compared to these plastics based pads.

5. **Dioxin:**Dioxin is caused by regular sanitary pads which contains polymers in it. It pollutes the air by the chemical dioxin, which is released during the contact with air .
6. **Doctor's choice**:The pads which doctors recommend are the most hygienic in nature and they are biodegradable pads which are alternative available in the market.

Reusable Cloth Pads

Generally the sanitary pads are produced using a most absorbent fabrics like cotton or hemp fiber. Because they can be reused and less expensive than the use and throw pads and the amount of waste produced during manufacturing can be reduced. They are washed after every use, dried and then reused. These are the demerits and the obstacles in using the cloth napkins.

Conclusion

The commercially available sanitary napkins are manufactured by moms or small industries are like work from home and which can be sourced through some food stores, specialty stores or by internet and in market places. They are available according to the length and thickness of range and are similar to disposable pads. For night use longer pads and for light use short and thinner pads are available.

Some of the producers allow the customers to choose the fabric, size and shape of the pads and number of pads that they are in need can also be customized to fit according to one's need. Some of the women's can make their own pads using cloths. Cloth pads can be washed in both by hand or by machine and dried in a sunny shade or in a clothes dryer , depending on the care requirements.

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ANALYSIS ON TEXTILE NATURAL FIBERS FOR TECHNICALTEXTILE APPLICATION

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Abstract

The textile and apparel industry encompasses a multifaceted network of interconnected segments that creates fibers, spin yarns, and fabricate cloth, and dye, finishes, print and also manufacturing apparel. Technical textiles are recycled in altered systems in numerous industries such as medical, construction, agriculture, transport, sports and hygiene. In industrial trade processes technical textiles are second-hand for machine clothing, filters, and abrasive substrates and in conveyer belts. At present, technical textile materials are greatest broadly recycled in medical, furniture, clothing, construction and hygiene. Moreover,the linkages between textile and apparel production and dispersal should be highlighted, and the enablement of these linkages is suggested as an important research attention. The process starts not only in garment developing and also has many originations in fibers also, one fine example is photosensitive fiber is the one associated with data transmission which involves the activity of light pulses travelling with largest fibres. Natural fibre has an outstanding role in in performance with technical textiles for the reason that of its properties, which might not substitute by man-made fibres.

Keywords: *Fabrication, Natural fibres, Eco-Friendly, Wearable Textiles*

Introduction

Fibers thrive in nature and time age-old; human beings have been more and more dependent on fibers and fibrous materials. It is required to place distinct weights on textile technology. The research and submissions of fiber materials are in a straight line linked to the daily life of social common people and the enlargement of manufacturing industry. Developed natural fibre fabrication through the prevention of fungal progress is discovered; beside with the practice of biotechnology and genetic engineering to develop required physical characteristics [3] In common, textiles are related with household applications, and clothing or any further medicinal products which are based on textile composites. In recent applications, the textiles materials have various applications because of its special properties such as strength, stiffness and so on.

Properties of Natural Fibres

***Asclepias Syriaca Fibre*:** Milkweed is considered as an adaptable substitutive fiber with abundant distinctive properties which are primarily accredited to their emptiness constructions. The existence of deep canal along the fiber length is accountable for their frivolous and fine wadding properties. Cotton fibre compartments develop at four consistent but different stages of start, elongation, minor cell wall condensing and development besides drying [1]. The

biological and biochemical aids of fibres have frequent technical application fields, so it can be reflected for the eco-friendly and non-allergenic textiles made of milkweed fibers specifically in manufacture of medical goods.

Fig: 1 Milkweed Plant

Fig: 2 Milkweed Fiber

Performing and elimination of traditional textile materials are now painstaking more disapprovingly because of collecting environmental realization and the demands. Hemp, Flax, Sisal, Coir and Ramie are mostly used for technical purposes. In recent times, the notice for renewable properties for fibers mostly of plant origin is growing. Fibers like milkweed floss, kapok is not successfully spun into yarns and those fibers can be utilized in stuffing purpose [5] Stuffing can be done in pillow, mattresses, car seats it can be considered as home textile products and also in mobile tech.

Ananos Comosus Fiber: Natural fibres composites are attention-grabbing to concern, for the reason that of its thickness and ecological nature over out-dated compounds, Further than plant fibres, several animal fibres also have unlike types such as products commencing the silk, feathers, animal fibres and avaian fibre which are major source

Fig: 3 Pineapple Plant

Fig: 4 Pineapple Fibre

For the reason that of the absence of tolerable familiarity of the physical and chemical properties of pineapple leaf fibre, it has not been correctly exploited technologically. It has lignin and cellulose and also utilized as a natural resource in paper, pulp and also for other

cellulose founded productions [8] Leaf fibres are end-to-end fibres that route through the leaves of maximum monocotyledonous plants such as pineapple leaf fibre, sisal, henequen, esparto and abaca. These fibres are also referred as hard fibres. This is due to the fact that they arise in bundles in aggregates of distinct cells with the ends overlying, to produce endures filaments through the length of the leaf.

These fibres are focused in large quantities near to the lower surface of the leaf. The leaves are commonly thick and fleshy often with hard surface. These fibres are held in locus by the cellular tissue of the leaf by feature of gummy and way substances. These substances are the most frequently employed as reinforcing agents [2]

HIBISCUS SABDARIFFA FIBER

Gongura is the common name of this plant which takes an important part in South Indian food, especially the leaves; the stem part produces an excellent fiber. The alignment of the fibers in the composite too acts a vital part in the purpose of the strength and the characteristics can also be developed by examining the strength to the angular arrangement of the fibers. This gongura fiber can be applicable while blending with the hard synthetic fibers. This fiber has virtually identical strength to the man-made or synthetic fibers. The motorized properties of the gongura fiber also have estimated.

Fig: 5 Gongura Plant

Fig: 6 Gongura Fiber

Role of Natural Fibres in Technical Textiles

Over the latter years, natural fiber has conventionally been used as strengthening for material, along with optimistic belongings of actual assembly such as, stiffness, weight and strength which has some limits in their shape and size of those strong products. The application of pine apple fibre has extensive variety of medical textiles such as biomedical and bio-technological and also in drug delivery, tissue engineering, and medical implants and in wound dressings are conceivable by pineapple fiber. [7]

The supple fibre-shaped multifunctional strategies, as well as fibre-founded energy storage devices, energy collecting equipment, Wearable technology chromatic devices also can be applied. The appearances of multifunctional fibre devices and the fibres with special functions together with ion exchange, antistatic property, high elasticity, thermal insulation, antibacterial, radiation protection and high elasticity in adding to their permanent properties. Several fragments of milkweed are used in medicinal applications. The floss attained from the seed, is used for padding purpose. Here forth wherever necessary milkweed fibres can be used for stuffing purpose in medicinal products.

Conclusion

Fiber products are commencement to enter public's lives, and repetitively varying the style of people's clothing. Following fiber industry technology, the functional fibres have been extensively studied and applied. Current direction are in progress are energy storage, energy collection, colour tuning, deformable and health monitor are possible through textile fibers. Few smart fibers have its properties in the area of energy harvesting, colour-changing; shape deformable [4]. Some of the fibers have functionality; high-performance and positive weave to functional equipment.

Clothing can have designing fashion and the special functionality of fibre applications and textile with the future needs of modern consumers. Smart clothing has engrossed a lot of investment and time from futuristic companies and researchers.

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AYURVASTRA APPLICATION IN THE HERBAL TEXTILES

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Abstract:

Ayurveda is an ancient medical book that summarises the art of healing and life extension. It has been practised in India for over 5,000 years. It is recognised as a complementary medication. The same ayurveda is now included into Ayurvastra, the medical garb. Herbal clothing is referred to as Ayurvastra. It's prepared by soaking fabrics in essential oils and plants. Tulsi, Brier rose, Indigo, Red Riding Hood (combination of spices), and other plants may be utilised in this method. Textiles of this kind may be used to provide therapeutic a garment's worth and scent Ayurveda is an ancient Indian system of medicine (also known as cosmetotextiles) has been used to treat a wide variety of ailments, including Diabetes, arthritis, skin infections, hypertension, and hay fever are all conditions that affect people. . This study uses ayurvedic principles to address mental health.

Key words : *Ayurvedic textiles, ayurvasthra, herbs, medical textiles.*

Introduction:

Ayurvastra is a component of Ayurvedic medicine, India's 5,000-year-old Ancient system of healing. Ayurvastra is a Sanskrit term that roughly translates as "Healthy Fabrics." Sanskrit for health is "Ayur," whereas Sanskrit for clothing is "Vastra." Inspired by the Ayurvastra initiative, which was founded and initiated by the Directorate of Handloom, the Department of Industries and Commerce, and the Department of Government Ayurvedic medicine School with the objective of developing a market for eco-friendly wellness textiles and promoting handloom textiles. Kairali Exports is a 55-year-old hand - loom weaving firm based in India that creates and sells Ayurvastra textiles. Commercially, a growing number of textile producers are committing to producing 100% natural components for health textiles and protecting our environment from harmful chemical invasion With the rising trend toward enhanced beauty, clients seek new lines of technology that help them not only visually, but also improve their health and bring a feeling of relaxation and happiness when used. The purpose of this lecture is to discuss the development and use of herbal medications in textiles. For centuries, pure aroma molecules and essential oils have been employed in folk medicine. In comparison to synthetic treatments employed now, ancient therapy with natural medications offers a feasible comprehensive pharmacological impact.

The association conducted various trials to demonstrate Ayurvastra's efficacy, and it was shown that people suffering from eczema, psoriasis, and rheumatism improved significantly and have used Ayurvastra bedding, carpets, and towels for one month. Additionally, they are used to treat a wide variety of disorders, including Diabetic, skin problems, hypotension and hypertension, asthma, osteoarthritis, and even some types of cancer are all possible complications are just a few of the conditions that might affect you. Ayurveda assists in reestablishing the equilibrium of the The systems of the body and the immune response strength Ayurvedic compounds such as turmeric are used to garments to impart a yellow color, and they improve the attractiveness and luminosity of the skin, as well as detoxification and regeneration.

Reactions of Ayurvasthra:

Skin is capable of absorbing environmental poisons, just as it is capable of absorbing the herbs present in our natural colors. These plants absorb their medical properties entering the body, improving the skin's ability to fend against and combat hazardous substances. Textile technique based on herbal couture. The skin is capable of absorbing herbs present in our orgonic dyes. These herbs infuse the body with their therapeutic properties, enhancing the tissues capacity to block and combating noxious substances. Organic textiles impregnated with herbs and herb dyes work as therapeutic agents when absorbed via the skin.

Ayurvasthra has Health Benefits: -

Each cloth is infused with special herbs that have been used to cure allergies in the past. Ayurveda is highly fluid and conductive to sweating. which aids in the recovery of many ailments. It may aid in the treatment of a wide variety of disorders. Eczema and psoriasis are both skin illnesses. Additionally, the fabric aids in the Spinal arthritis, joint problems, hypertension, diabetes and respiratory disorders including asthma and insomnia are all treated.. Additionally, it aids in immunity enhancement. Ayurvasthra's antimicrobial and anti-inflammatory qualities enable it to be used as dressings and bandages. Additionally, it has been shown to alleviate general body pains, promote weight reduction, and boost the immunological system. Additionally, it may be utilised as a mood enhancer for overall relaxation and relaxing, as well as blood cleaning and cooling

Wearing Ayurvastra clothes is most helpful while the When the body is at rest, for example, Relaxation when sleeping or yoga because the body is healing naturally and reestablishing equilibrium at this time. As a result, the majority of Ayurvastra's items are Cotton mats, sleepwear, bed linens, towels, and meditation apparel.

Usage of herbs:

Around 200 botanicals are utilised to create the many shades of Vastra apparel. Each colour is created using a preparation that generally involves one or more prominent plants/herbs, such as Turmeric clothing, in addition to 40 or more many therapeutic plants, herbs, petals, stems, and starts barking that have been painstakingly combined and prepared.

Depending on the plants used in the dye bath, the cloth takes on a variety of therapeutic properties. Diabetes has been shown to be treated when the to make the natural dye, Mimosa pudica, sandal flower, fennel seeds, champa flower are mixed. Similarly, Curry leaves combined with natural dye are helpful for treating rheumatoid arthritis, while rosewood, saffron, and neem are excellent for skin conditions.

Extracts from many components of varied plant species, such as roots, flowers, leaves, and seeds, to mention a few herbs and plants, harita, madder, turmeric, indigo, pomegranate, onions, Tulsi, mint, lavender, and ginger demonstrate antibacterial characteristics.

Polyphenolics, terpenoids, flavonoids, alkaloids, polypeptides, and polyacetylenes are all antimicrobial herbal compounds. Some are bacteriostatic, whereas others are bactericides.

- Basil (Tulasi) is utilised to alleviate stress, improve sleep, and boost immunity. Along with the primary hue, other plants are employed to provide the medical effect. Tulsi (Ocimum sanctum) is effective against bacterial and viral infections illnesses, and its astringent oil functions as an insect repellent and antiseptic . Additionally, it relieves stress, boosts the immune system, and develops the respiratory system.

- Certain plants, such as sandal, devtharu, and others, provide a pleasant aroma to fabric and apparel.
- Turmeric reduces Kappa and helps clear mucus from the throat. It is used to treat watery wastes, germs in the eyes, ears, and wounds, and as an anti-oxidant.
- Henna is an excellent treatment for eczema, scabies, fungal infections, and burns.
- Aloevera - very useful in the treatment of infections, wounds, and burns, as well as AIDS OR HIV

The use of herbal medical treatments helps to reduce the risk of contamination by biological toxins and infectious pathogens, hence reducing sickness spread to other patients.

Herbs and Textile Industry:

Globally, as a result of several governments putting a prohibition on textiles dyed with chemical dyes, this has been a death blow to the hand loom business. Simultaneously, fabrics coloured with natural vegetable dyes, particularly medicinal herbs, have commanded a sizable market owing to their evident benefits. Nowadays, great emphasis in the textile business is placed on herbal dyes, which use solely native plants and minerals throughout the manufacturing process. The benefit of colours taken from medicinal plants is that they are made from renewable resources, need few chemical processes to prepare, are biodegradable, have therapeutic capabilities, and are in peace with nature. The use of harmful chemicals and pesticides in conventional cotton dyeing poses a major danger to the human tissue and environment. The textile industry's widespread usage of hazardous chemicals results in significant health concerns affecting the neurological system. Organic cotton, on the other hand, restricts the use of such chemicals, demonstrating a caring approach toward the environment and the skin. The term 'organic' refers to agricultural goods that are produced without the use of artificial chemicals or pesticides. Herbal dyeing is well-known for its eco-friendliness and the incorporation of plants into a cloth. Natural fabrics are coloured with plants such as turmeric, henna, aloe vera, and indigo. Throughout the procedure, no chemicals are employed; the fabrics are completely safe and chemical-free.

Medical Textiles:

Medical textiles are the most critical and rapidly developing segment of technical textiles, sometimes referred to as healthcare textiles. Medical textile demand is expanding daily as a result of the many uses in the health sector. These biomedical textiles play a critical role in human health. As a result, correctly preserve the quality of medical textiles. The hygiene, medicinal, and health care sectors are major users of technical textiles. I want to examine the categorization of medial textiles in this paper. Medical textiles are defined by the Textile Institute (UK) as "a broad word that refers to a textile structure that has been developed and manufactured for use in a number of medical applications, including implantable applications."

Medical textile classification:

1. **Medical textile that is not plantable: Can be used as a wound dressing, plaster, bandage, or gauge.**
2. **Implantable medical textiles: Sutures, artificial ligaments, and artificial joints are all examples of implantable medical textiles.**

3. **Extracorporeal device: Can be used as an artificial kidney, liver, or lungs, among other things.**
4. **Public healthcare and sanitary product: Can be used as hospital bedding and pillow covers, surgical gowns, surgical musk, and gloves, among other things.**

Process of Herbal Dyeing:

Herbal dyeing was created by significant investigation into dyeing methods that have been utilized since the Indus civilization's period. Herbal dyeing begins with the grey linen being treated through numerous phases until it becomes colorful and wearable. Throughout this therapy, only natural mechanisms are used.

The fabrics and yarns used include organic products cotton, natural cotton, silk, wool, linen, jute, and hemp, as well as natural mixes of these fabrics and yarns

- **Herbal Dyeing as follows:** Natural, organic yarns are hand-dyed using medicinal botanicals. The colour bath combines the fibres with the beautiful natural tones and therapeutic properties of these plants. The strands are then woven together to create fabric, which is ultimately used to create clothes or bedding. The textiles "transport the (medicinal) advantages of the herbs via the skin" whether worn or slept.

- **Technologies Used**: Microencapsulation, Technology of Sensory Perception The methods used to incorporate herbal medications and oils into textiles include microencapsulation, liposomes, colours, and fabrics with coatings. The warmth of the dye, the duration and amount of time spent soaking the dyes, the herb mixture, and even the equipment used are all closely regulated.
- **Application in the Commercial Sector:** Cosmetotextiles are becoming more popular in several textile sectors. Aura, Cognis, Pantaloons, Quiospheres, and other herbal clothing brands include Aura, Cognis, Pantaloons, and Quiospheres. These businesses provide a variety of apparel options, such as bandees, vests, camisoles, men's and women's tees, and coirs.
- **Effects on the Human Body:** It's a rejuvenating tonic that keeps the body looking young as well as being fit. Certain plants are used in textiles. The usage of certain herbs in textiles has been shown to be effective in treating ailments such as arthritis and hay fever. It will be advantageous to your health if you can increase your The skin's inherent ability to prevent and reject the entry of harmful substances and contaminants into your body.

Ayurveda has a wide range of applications.

The most useful moment When the body is at rest, for example, during sleeping or meditating ,Ayurvastra clothes should be worn because this is when the body is reestablishing equilibrium via physiological healing. This makes usage of Ayurvastra for Sleepwear, bedsheet towels, meditation apparel, and coir mats are some of the items available in sensible choice. Now a days the herb treatment fabric is made into sarees, gowns and Intimate Apparels as they have found usage not only to cure but also to avoid diseases being capable of preventing development of infections

Ayurveda's Advantages

· Assists and boosts the immune system and serves as a barrier
· Eliminate infections of the skin.
· Clothing that acts as a'second skin' for the user may contribute significantly to the general healing of our skin.
· The Ayurvastra fabric is used according to the concept of touch. Ayurvastra's intimate proximity to the skin stimulates the body's metabolism, resulting in the efficient evacuation of bodily toxins.
· After the therapeutic component of the herb-infused and herb-dyed organic textiles is absorbed via the skin, the organic fabrics work as healing agents.
· Eczema and psoriasis are both skin disorders. Additionally, certain fabrics have antibacterial and anti-inflammatory characteristics. Additionally, the fabric aids in the treatment of Rheumatism, arthritis, high blood pressure, diabetes, and respiratory problems are all examples of rheumatism including such asthma .
· Ayurveda has a great deal of therapeutic value. Thus, depending on the plant used to manufacture the colours, the cloth has been discovered to be quite beneficial for persons suffering from diseases and also for strengthening immunity.
· Ayurvastra are anti-inflammatory compounds that also function as an absorbent via the skin. Every fabric is impregnated with a unique blend of herbs that may aid in the treatment of certain skin ailments. Ayurvedic herbs are proven to heal allergies due to their antimicrobial and anti-inflammatory qualities.
· Ayurvastra is very smooth and conducive to transpiration, which aids in the treatment of a variety of ailments. • Ayurvastra may also be used to treat a variety of disorders, including Diabetes, eczema, psoriasis, hypotension, high blood sugar, and asthma are all conditions that affect the skin.and sleeplessness.
· It's hypnotic to learn that bleaching this fabric with cow's urine increases its therapeutic properties. Because the vast number of naturally occurring colours cannot be replicated with synthetic dyes, new colours may be generated that retain their impact even after prolonged usage.
· Herbal colours do not contribute to pollution in the same way as chemical dyes do. The effluent from herbal dyeing may be utilised to irrigate crops (used as bio manure and compost)

Ayurvastra on Mental Health – Herbs which Cure:

- **Hypertension** Basil (*Ocimum basilicum*), Baheda (*Terminalia bellir ica*), Harad (*Terminalia chebula*), Methi (*Trigonel la foenum-graecum*), Guar (*Cyamopsis tetragonoloba*), Indigo (*Indigofera tinctoria*), Anar (*Punica granatum*), Saff lower *(Carthamus tinctorius)* and Myrobalan (*Terminalia chebula*)

- **Sleeplessness:** Sleeplessness as a result of high stress or busywork schedule**.** Cuscus/Khus-Khus (*Vetiver ia Zizanoides*)
- **Headache** Sandal wood (*Santalum album*) Rheumatism Indian Borage (*Trichodesma indicum*), Ajowan (*Trachyspermum ammi*), Reetha (*Sapindus tri foliatus*), Messina Creeper (*Ipomoea cairica*)
- **Leprosy** Manjistha (*Rubia Cordi folia*)
- **HIV AIDS** Korphad (*Aloe vera*), Basil (*Ocimum basilicum*), Indian Mulberry (*Morinda pubescens*), Turmeric (*Curcuma longa*), Winter Cherry (*Withania somnifera*)

Ayurveda's a bright future:

Ayurvastra may be used safely in conjunction with holistic therapies to aid in the improvement of immunity and the reduction of stress in a variety of diseases. Government authorities in Kerala, India, a hotbed of Following recent advances in herbal medication used in Ayurveda they are now interested in exploring this other scientific studies shown positive outcomes for skin conditions and boosted immune levels. Additional However, further study is necessary to assist in reintroducing ayurveda into the mainstream textile business as a significant contribution to planet sustainability and global warming mitigation. However, interest in ayurvastra is growing, as seen by recent media coverage by the BBC and other sites. Ayurvastra's future is fascinating, and its reach is limitless [5].

Conclusion:

Ayurveda has a proverb that loosely translates as "do not apply on your skin something that you would not put in your mouth." This is especially true when it comes to herbal pastes and oils used in Ayurveda used in ayurvedic therapies. Is it conceivable to apply the same idea to herbal-infused organic clothes used for therapeutic purposes.

Ayurveda's ayurvastra, or life-sustaining, eco-friendly clothing, is another feather in its crown. The Ayurvastra idea is based on the ancient Indian way of dyeing. As with Khadi, India is a major manufacturer and exporter of environmentally friendly textiles. Organic textiles from India are often regarded as the finest on the worldwide market. Ayurvastra textiles are totally chemical-free, organically coloured garments manufactured with organic cotton and colours derived from India's therapeutic botanicals and plants. It is the physician of the future, since allopathic medicine focuses on symptoms, but Ayurveda focuses on fundamental causes. Natural colours that benefit the wearer's health is an exciting notion. It is past time for the Indian government and textile companies to promote and provide tangible support for this priceless Indian heritage. Thus, Ayurvedic textiles push us in the direction of a more natural, disease-free, and healthy way of life.

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SUSTAINABLE TEXTILES AND FASHION PRODUCTS

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Abstract

Textile Industry, Eco-textiles, Sustainable process, and Toxic Substances. The textile industry is considered the most ecologically harmful industry in the world. The eco problems in the textile industry occur during some production processes and are carried forward right to the finished product. In the production process like bleaching and then dyeing, the subsequent fabric makes toxic substances that swell into our ecosystem. During the production process controlling pollution is as vital as making a product free from the toxic effect. Textile and fashion products are manufactured, distributed, sold and used worldwide, so the textile and fashion industry has a major impact on the environment. Environmental issues are playing an increasingly important role. The analysis of sustainability in this context is therefore extremely important. The training material entitled "Sustainable textiles" is a compilation of scientific, technical, economical, and environmental data of the various processes.

Keywords: *Sustainability, eco, impact, environment, fibers, textiles, biodegradability, green, life cycle, testing, standards, eco-labels, challenges.*

Introduction:

Environmental issues are playing an increasingly important role in the textile industry, both from the point of view of government regulation and consumer expectations. Almost everywhere in the world and all industries, the sustainability movement has been manifested. In this context, it has to be mentioned that the textile industry is one of the biggest polluters. Sustainable textiles have grown in popularity because of the moral consciousness that many people feel, among others. Sustainability is a systemic concept, relating to the continuity of economic, social, institutional and environmental aspects of human society. It is intended to be a means of configuring civilization and human activity so that society

The textile industry is one of the longest and most complex and complicated industrial chains of the manufacturing industry. It involves actors from agricultural, chemical fibers, dyes and chemical manufacturing, textile and apparel industry, retail and service sector, and waste treatment. In recent years ecological issues have become more and more important especially in the textile and apparel industry, an industry not noted for eco-friendliness. Every textile item releases toxic substances that are harmful to the environment.

Importance of Sustainable Textiles:

Sustainable textiles are designed to address a growing awareness of such issues. Sometimes also called eco-textiles, these textiles are created in ways that address human impact on the environment and ensure more social responsibility in their growth and manufacture.

Materials Used in Sustainable Textiles:

People use fibers from two basic sources to make textiles: natural fibers from plant and animal sources, and synthetic fibers like rayon and nylon. The most common natural fiber in

clothing is cotton, and many growers are working to produce organic cotton without pesticides or chemical fertilizers. Companies also blend cotton with other more ecologically friendly plant fibers. One of these is hemp, a member of the cannabis family. Hemp is well-suited to organic agriculture because it doesn't need fertilizers or pesticides, grows quickly, and needs less water than cotton. It does have drawbacks, including a scratchier texture and a resistance to dyes. Another fiber, bamboo, is a grass that grows incredibly fast and also uses less water. But processing it can require toxic chemicals and solvents. As you can see, each material has advantages and drawbacks. Manufacturers are making textiles by blending cotton and other fibers to find the most responsible and sustainable fabric.

What is sustainable development in textiles?

The concept of sustainable development in textile and apparel industry can have many interpretations. However, its core meaning is development that satisfies the present needs without compromising the environmental standards, to ensure that the future generation can have a sustainable living.

Sustainable fibers

Many people consider that a 'sustainable fibre' is an organic fibre or a natural one. They will reject any man-made fibres on the ground that they damage the environment. But some manmade or synthetic fibres can be more sustainable than natural ones as they do not use as many resources as the 'natural fibres'. The debate over how sustainable natural fibres are is based in general on the water and energy consumption during the production of the fibres. Unless the fibres are organic, then harmful chemicals are often used which not only damage the environment, but are also responsible for thousands of deaths a year. The amount of energy used in turning the cellulose of plants (like cotton or ramie) into a fibre can be huge and very damaging if the energy source is nonrenewable. The water consumption of growing natural fibres often leaves others without clean water, and can damage the surrounding soil, making it infertile.

Sustainable design

Fashion by its very nature is a consuming business and eco, green, natural clothing has been in trends for many years. However, all the hype about clean green textiles did leave the legacy of a genuine concern about the impact of textiles on the environment. Sustainable textiles many Designers can make a difference by: understanding the theoretical, technical and practical considerations of the entire production process of a product; asking questions; collaborating with technologists, scientists, growers, manufacturers and marketing departments; understanding the performance and aesthetic qualities that are high on the consumer agenda; understanding how the consumer will use the product.

Eco finishing aspects

Eco Finishing is a finishing process that is most suitable and within the norms of eco label standards. According to S. Sharma, the most important aspects are presented below. Certain treatments to achieve a desired colour, effect or performance are used for fabrics or garments. The techniques used vary in the amount of water required and the amount and toxicity of the chemicals used, and the energy required to carry out these techniques. Sustainable dyeing, printing and tanning methods have to focus on reducing the environmental impact. Finishes used on

textiles can be wet or dry. Dry finishes are generally considered environmentally and consumer friendly as they use machinery and heat rather than chemicals. Some wet finishes, which are increasing in selection and availability, such as enzymatic treatments, are eco-friendly. Other wet finishes, such as antimicrobial and stain-resistant, can be beneficial to the sustainability of a garment, as they reduce the need for laundering, conserving water and energy and the amount of chemicals released to the environment.

Sustainable fabrics

Sustainable fabrics are often made from natural or recycled materials, aiming to reduce harm either through the production process, fiber properties, or overall environmental impact. These fabrics can also contribute to waste reduction, water conservation, lowered emissions, and soil regeneration though, as mentioned, there isn't one fabric that is entirely sustainable.

The "sustainable fabrics" is a term often used to group together various environmentally friendly materials, and several fabrics have garnered the "sustainable" label for different reasons. But just as sustainability is a moving target, so are fabrics and no one fabric can do it all. But the hope is that through responsible production and environmentally growing practices, better fabrics can help to create a more transparent fashion industry.

Bamboo

Bamboo is a fast-growing, regenerative crop that doesn't require fertilization and is often touted as a sustainable garment fabric though there are concerns about land clearing and harvesting methods (something to ask a brand about before purchasing a garment). That said, bamboo is incredibly absorbent, comfortable, and moisture-wicking, making it a favorite with sustainable brands.

Hemp

Hemp is a specific type of cannabis plant. It's fast-growing, doesn't exhaust the soil, and doesn't require pesticides. Hemp creates a durable fabric that's non-irritating for skin and has many uses. It's often used in place of cotton. This fabric is often more expensive, making it less accessible to everyone. True hemp doesn't require a certification and is already organic, but you can verify with a brand that their garments are 100 percent hemp (not just made with hemp fibers) before purchasing.

Linen

Linen is made from flax, which can be grown without fertilizer and planted in areas where other crops cannot thrive. Flax can also be used in its entirety (seeds, oil, and crop), meaning there's no waste. Linen is also biodegradable—as long as harsh chemicals are left out of the process. The downside to linen is that it can be expensive as it's often made overseas. For more affordable, USA-made 100% linen, check out Linoto.

Modal

Modal is another semi-synthetic material made from wood pulp but mainly that of beech trees. The naturally occurring yet human-made fabric is generally more delicate and softer than its lyocell sibling.

Organic Cotton

Organic cotton is produced without any toxic pesticides, synthetic fertilizers, or genetically modified seeds (GMOs). This usually implies a sustainably managed fabric production process, though it is not always a given without proper certifications. Look for a GOTS certification. Here are a few of our favorite brands creating organic cotton clothes.

Garment use and lifespan

The environmental impact of fashion also depends on how much and how long a garment is used. With the fast fashion trend, garments tend to be used half as much as compared to 15 years ago. This is due to the inferior quality of fabrics used but also a result of a significant increase in collections that are being released by the fashion industry. Typically, a garment used daily over years has less impact than a garment used once to then be quickly discarded. Studies have show that the washing and drying process for pair of classic jeans is responsible for almost two-thirds of the energy consumed through the whole of the jeans' life, and for underwear about 80% of total energy use comes from laundry processes. Thus, use and wear practices affect the lifecycles of garments and needs to be addressed for larger systemic impact.

However, there is a significant difference between making a product last from making a long-lasting product. The quality of the product must reflect the appropriate fit into its lifecycle. Certain garments of quality can be repaired and cultivated with emotional durability. Low-quality products that deteriorate rapidly are not as suitable to be "enchanted" with emotional bonds between user and product. It is important to notice that choosing and promoting "emotional bonds" with consumer objects is an endeavour more easily done under circumstances of excess, as the needy have no other option than to keep and care for their belongings.

Sustainable clothing

Sustainable clothing refers to fabrics derived from eco-friendly resources, such as sustainably grown fiber crops or recycled materials. It also refers to how these fabrics are made. Historically, being environmentally conscious towards clothing meant

- Making clothes last long by caring for them, repairing and patching them,
- Inheriting and using hand-me-downs within ones expanded family and community,
- Buying clothes from thrift stores or any shops that sell second-hand clothing,
- Donating used clothes to shops previously mentioned, for reuse or resale. In modern times, with a prominent trend towards sustainability and being 'green', sustainable clothing has expanded towards
- Reducing the amount of clothing overproduced, incinerated or discarded to landfills, and
- Decreasing the environmental impact of agro-chemicals in producing conventional fiber crops (e.g. cotton).

Under the accordance of sustainability, recycled clothing upholds the principle of the "Three R's of the Environment": Reduce, Reuse, and Recycle, as well as the "Three Legs of Sustainability": Economics, Ecology, and Social Equity.

Conclusion:

Sustainability of textile and fashion means to create new concepts of making fabric to old one and giving unique to society without harm and injured our lifeline that is environment. It is recycle and reinvention , reduce , reuse , redesign and recreation of products now a days it is a

campaign started by the many companies of the world to save our environment ,our living source In recent times sustainability is a foremost characteristic of textile fashion products. "Textile fashion companies are focusing more on sustainable products these days, so that they can meet the environmental and social aspects. For getting competitive advantage in fashion business the companies have to take care of social, political and economic issues, and they must be aware of current trends of the market. Sustainable fibres provide solution for the companies facing issues regarding environmental problems, these fibres are also favourable to meet the market demands of quality products these days".

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