



IMPORTANCE OF ECO-INNOVATIVE FABRICS IN CLOTHING DESIGN

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Abstract:

The article analyzes the impact of light industry on the environment, and its type of solutions, the attraction of generation Z to the use of eco-innovative fabrics, the development of such fabrics, their importance, advantages, and the development and analysis of sustainable fashion design.

Keywords: recycling, upcycling, generation Z trend, chemicals, sustainable textile, ecological material, innovation.

Introduction

Beauty and careful harmony with nature is the future of all humanity. We must learn to live in harmony with nature. Eco fashion is part of the future world that we need to build around the world. How sustainable our clothes are actually depends a lot on what they are made from. Fabric is important to us, but most of them are animal, plant or mineral that we wear becoming a garment or an accessory, it consumes a huge amount of resources. Countless resources are used to create the fabric, including oil, water, pesticides, chemicals and dyes.



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Currently, many European companies have rejected the use of natural leather and fur, as leather production is also harmful to the environment. The number of people who think about environmental issues around the world is increasing. For instance: H&M focuses on recycling old clothes, Prada produces tops, shorts, skirts from recycled nylon. Gabriela Hearst makes patchwork coats, ponchos and jackets from recycled cashmere and old Turkish carpets. Other designers have created amazing jewelry out of recycled plastic and 3D printing. The process of introduction and approval of a new fashion standard, that is, the change of fashion cycles, is called "fashion innovation".

Research, Gen Z trend. Light industry is responsible for environmental damage. These are gases, chemicals, and water pollution from the production of synthetics. According to the data, 10 kg of CO₂ emissions are released into the atmosphere, 300 liters of water are used, and 40 kilowatts of electricity are consumed for the production of 1 product. According to statistics, 80% of clothes are utilized.

The crisis of the natural environment has become a global process, it is the designer's task to apply recycling and upcycling to generation Z. Recycling fabric is redeveloped and given a new life to the item, and upcycling is recycling, in which the second product is not produced, the fabric is reused if it does not change its purpose. It depends on the ability of the designer, for example, denim pants can be turned into a skirt, two pants can be turned into one special-looking pair of pants, and a shirt can be turned into a blouse.

It takes up to 8 thousand liters of water to create one pair of jeans. This is connected with the cultivation of moisture-loving cotton, and with the processing of fiber and fabric. To create a worn effect, denim is subjected to several cycles of intensive washing using chromium, mercury, copper, cadmium and



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manganese. The fabric is bleached and dyed with highly toxic azo dyes, banned in the European Union but widely used by mass clothing manufacturers in other parts of the world. In China, the Pearl River (Pearl River) became the site of an ecological disaster, its waters turned indigo after the appearance on its banks of the "blue jeans capital of the world" - an industrial textile complex in the city of Xintang. In 2015, Patagonia launched the first green denim collection. They were made from organic cotton, using more environmentally friendly sulfur-based dyes and Archroma Advanced Denim Technology's innovative dyeing method. This made it possible to reduce water consumption by 84%, energy - by 30%, and reduce CO₂ emissions by 25%. Clothes were sewn at enterprises where social labor standards were observed according to the Fair Trade standard. This has pushed the fashion industry towards the greening of production.

Every designer can use denim for a stylish and eco-friendly wardrobe. Upcycling or recycling denim can be used not only in clothing design, but also in interior design. Recycling denim saves natural resources and water.

Leather production causes serious damage to the environment. The solution of the problem has already been found, it is Piñatex. The raw material that forms the basis of Piñatex is a by-product of the pineapple harvest. Piñatex is a material made from pineapple leaves grown in the Philippines. Its development is more efficient than traditional skin (leather) and animals are not hunted or harmed. Piñatex fabric does not require additional water or chemicals, as it is made from leftover pineapple leaves. For example, it requires less water and no harmful chemicals that are environmentally toxic to wildlife. The remains of the leaves are processed and used for fertilizer or biomass. About 40,000 tons of leaves are produced every year, and most of them are burned or left to rot. The fibers are



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extracted from the leaves and made into non-woven fabric, a wonderful alternative to leather. It's arguably better than plastic-based vegan leather because it's biodegradable and not made from fossil fuels. Piñatex, a fabric made from pineapple skin, can be widely used in the production of clothes, shoes and accessories.

When such natural fabrics are decomposed, the earth becomes a fertile, and the environment is prevented from being harmed or contaminated.

In conclusion. We can reduce waste with the help of design, as it is possible nowadays. It is necessary to educate the population on targeted consumption. Designers need to create a one-time product, i.e. a long-lasting one, not something that will quickly go out of style. By focusing on inventing a product that either has a long life or can be recycled, and it reduces environmental footprint by 61%. Moreover, it helps to save natural resources. Clothes should be produced and sold little by little. For example, if a mass market produces 52 collections a year, 30% of the products will not find an owner. People buy more and start wearing less. In this case, it is necessary to provide information about the proper care of clothes, which will help to extend the life of the item. In order to protect the environment, it is necessary to create a product that will last for a long time, and try not to chase after fashion and its trends and not to produce only a seasonal product. Fashion trends tend to change and everything has to be thrown away oneday. This leads to an increase of waste and pollution of the environment.

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