Optical design and its impact on developing textile technology

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Abstract

The textile industry has undergone a paradigm shift due to scientific and technological advances that have transformed many aspects of life in the world. And interest in research that is developing in this industry, either to achieve tangible economic benefit, or to apply job performance properties, either through the method of implementation or the use of new materials with new features and characteristics. Where the material plays an important role, whether natural or industrial, and each material has its own advantages and characteristics that suit the end use. There has been recent great progress in the textile industry using the optical material made of optical fibers and has been produced in many forms and different uses. The researcher sees the lack of the optical material design process to innovate and renew in use despite the fact that it performs many different functional purposes. And the lack of scientific and practical studies concerning optical fibers, despite their use in various types of textiles.

The designer combines technology and art in several basic stages in the design process that are interrelated and not separate from one another. Some of them include logical design analysis, and some that depend on experience in decision-making, both of which have the same importance, depending on the degree of complexity of the material. What the design needs is much more intelligence than manual skill.

Therefore, the researcher discussed the methods and stages of producing a new type of optical fabric that has aesthetic properties and utilitarian value. And achieving an innovative technological method in the field of fabrics through the optical fiber properties used to highlight the technical and aesthetic values of the product.

The researcher has made a study to design the optical material that corresponds to the possibility of its implementation and production in aesthetic way to overcome the problems facing the designer through innovative design solutions and the method of implementation, which requires the designer experience, skill and practice.

Keywords:

Optical material, optical fibers, design

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