

Chameleon Inspired Outerwear Designs Achieved via Photochromic and Thermochromic Pigments

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Abstract:

Lately it has been recognized that the growth of materials and textiles are on continuous advancement due to the interest of researchers. Colour change technology has been reflected in many products and materials lately due to the increase of demand of colour changing within the market. Some of these demands may vary from being beneficial and some may be with the aim of expressing creativeness. Colour-Changing technology is being achieved through various approaches, one of which is the chromic materials. Such materials are both photochromic and thermochromic colorants. They are well established colorants in the market. Photochromic Colorant has the ability to change colour when exposed to sunlight while Thermochromic Colorant changes colour when exposed to heat. These types of colorants have become a major focus in research due to their potential. They have been used in various applications such as medical thermography, plastic strip thermometers, food packaging, etc. In the last few years however, the application of such colorants on textiles have picked up significantly which will allow the potential to enrich the market with such products. This paper focuses on pigments of both photochromic and thermochromic which were applied on fabrics and then followed by the application of them in designs. The designs were inspired from the chameleon since another term for chromic materials is the "chameleon" materials. Durability and comfort experiments were executed on the chromic fabrics prior to applying it on the executed designs with the aim to distinguish the areas in which should be applied.

Keywords:

Photochromic, Thermochromic, chromic, chameleon, clothing design.