The effect of structural composion on self _ cleaning property of hand tuft carpet.

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Abstract:

Here in we present a self cleaning properties of carpet. TiO2 NPs is used to impart carpet material self-cleaning characteristics. When TiO2NPs is coated on carpet polymers, its inherent photo-catalytic activity decomposes the polymeric carpet materials, as well as the contaminants. Fabric material and its weaving construction are expected factors that able to mitigate the deterioration of mechanical strength of the treated fabrics under the photocatalytic activity of TiO2NPs. The present work aims at investigating the effect of self-cleaning treatment on some physico-mechanical properties of woven carpet by hand tuft method we were chosen three kind of woven constructions were namely, wool 3/1, polyester 1600 and wool/polyester blend. All this construction has different intensity, hight of pile and number of line pile /cm. The three kinde of carpet were treated with TiO2 NPs in presences of sodium hypophsifite as cross liking agent and citric acid as activating agent the studies appear that the best results:

The polyester samples is the best one and when the number of line /cm increase the self cleaning increase but the reverse happen with intensity of carpets.

Research problem:

Reconstitute the carpet construction components and process them using nanotechnology and self-service carpeting.

research importance:

1. Giving the page a self-cleaning feature to achieve the default growth of carpets and preserve its luster.
2. The structural design elements (material type - pile density - pile height) that achieve the highest cleaning with functional and mechanical properties.

research aims:

1. Provide solutions to old media messages by installing its build architecture.
2. Using modern nanotechnology to reduce the number of times of printing and extend its life.

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Research hypotheses:

1. Type and house of raw materials used in construction.
2. The structural composition of the carpet (the height of the pile and the pile in the square unit) the practice of self-cleaning.
3. Chemical treatments of carpets using nanoparticles have different self-cleaning properties.

Research Methodology:

The research follows the method and the analytical.

Keywords:

Hand Tuft – Nanotechnology - Self-Cleaning.