

## **Developing swimsuit Fabric using Nano-technology and screen photochemical method**

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### **Abstract:**

In this study,two ways were carried out inthe polyesterfabric, which used in traditional swimsuit manufacturing,Firstly the polyester fabric werecoated with the silica nanoparticles to improve its functional properties for achieve the final use requirements. The characterization of silica nanoparticles on the fabric surface were done by using scanning electron microscope (SEM)and also on fabric surface before the treatment.Functional and Physical tests were accomplished. Those tests were weight, thickness, bursting Strength, stiffness, air permeability, water repellency. The properties of polyester fabrictreated with the silica nanoparticles were compared with untreatedpolyester fabric.Secondly Sharkskin topography was used as guide for the changing the polyesterfabric surface morphology and it was applied by photochemical method technique usingGlycerol propoxylatetriacrylate(HH-IV Water Resistant Diazo Emulsion) on the polyester fabric.Thepolyester fabric surfaces with photochemicaltechnique,polyester fabric that treated with the silica nanoparticles anduntreated polyester fabricwere tested to measure its speed, with different weights on the water.The new polyester fabric surface may increase the efficiency of swimsuit.

**Keywords:** Nanotechnology, Silica nanoparticles, Nano textile coating, Sharkskin topography, photochemicaltechnique.