

Smart options for pigment printing and multifunctionalization of wool and polyester/ wool blended fabrics in single step

Heba M. Khalil

Faculty of Applied Arts, Printing, Dyeing and Finishing Department, Helwan University, Cairo, Egypt.
bopart_star @ yahoo.com

Abstract:

This research work was aimed to produce multifunctionalized wool and polyester/ wool pigment prints in one step process by individually incorporating TiO₂-nanoparticles (TiO₂-NP's, 10g/Kg), silicon micro-emulsion (20g/Kg) or a water/oil-repellent agent (40g/Kg), in pigment printing paste [pigment color (20g/kg); synthetic thickening agent (20g/kg); binder (100 g/kg); crosslinking agent (10g/kg); ammonium persulfate (NH₄)₂S₂O₈ (2g/kg)] followed by printing and microwave fixation at 1300W/4 min. The antimicrobial properties, UV-protection, soft-handle or water/oil-repellency along with printing properties were evaluated as well as the depth of the obtained functionalized pigment prints.

Keywords:

Wool; polyester/ wool fabrics; pigment printing; antibacterial finishing; UV-protection; soft-handle; water/ oil-repellency and one-step.

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