A study on the functional performance properties of modern sportswear fabrics

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Abstract: Owing to growing developments of sportswear, researchers have developed high performance textiles. Therefore, the main aim of this investigation is to study the functional performance properties of some modern sports fabrics. The physical measurements were carried out on some of the modern sportswear fabrics i.e., Coolmax, Spandex, and Coldblack. The research study the behavior of these fabrics towards air permeability, water vapor permeability, thermal insulation, wetting properties, UV protection, Burst strength, static electricity, and pilling tendency. Also the surface characterization was performed using electronic microscopy (SEM) imaging. The results are indicate that different performance properties of the fabrics depends on the fiber type, the size of the pores between the fibers. The results show that the best results of air permeability, permeability of water vapor and thermal insulation was achieved by Coolmax, followed by polyester, Coldblack and finally Spandex. All the samples of the study achieved excellent ultraviolet protection reaches the maximum with the Spandex. The Coolmax show the best performance in the water absorption rate followed by the Coldblack, then the Local polyester and finally the Spandex.

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