

## **Prediction Modeling of Compression Properties of a Knitted Sportswear Fabric Using Response Surface Method**

**Authors :** Jawairia Umar, Tanveer Hussain, Zulfiqar Ali, Muhammad Maqsood

**Abstract :** Different knitted structures and knitted parameters play a vital role in the stretch and recovery management of compression sportswear in addition to the materials use to generate this stretch and recovery behavior of the fabric. The present work was planned to predict the different performance indicators of a compression sportswear fabric with some ground parameters i.e. base yarn stitch length (polyester as base yarn and spandex as plating yarn involve to make a compression fabric) and linear density of the spandex which is a key material of any sportswear fabric. The prediction models were generated by response surface method for performance indicators such as stretch & recovery percentage, compression generated by the garment on body, total elongation on application of high power force and load generated on certain percentage extension in fabric. Certain physical properties of the fabric were also modeled using these two parameters.

**Keywords :** Compression, sportswear, stretch and recovery, statistical model, kikuhime

**Conference Title :** ICTMT 2016 : International Conference on Textiles and Manufacturing Technology

**Conference Location :** Paris, France

**Conference Dates :** February 22-23, 2016