The Development of Unique Resist Dyed Patterning for Seamless Fashion and Knitted Fabrics

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Wada (2002) defines resist as "technique or material that creates patterns on cloth by impeding dye from penetrating fabric" (p. 209). Resist dyeing techniques have been traditionally created in numerous ways worldwide, such as wax resist (batik), tied resist (shibori) and yarn resist (ikat). Most resist techniques have been created on woven fabrics and manipulated by hand. This research looks at the possibilities of resist (shibori) dyes created on knitted fabrics. The focus centers on exploring and developing diverse resist patterns on knitted fabrics created by computerized knit technology. Thus, the objective of this research is to give a new interpretation to the traditional resist-dyeing methods by incorporating seamless knitting technology.

Wada, Rice and Barton (1999) indicate that shibori designs, composed of binding, stitching, folding, and pole-wrapping, that appear on fabric are the result of the three-dimensional shape of the fabric even if the fabrics may be returned to a two- dimensional form after dyeing. This research examines a variety of three-dimensional knitted structures for resist designs duplicating traditional methods of stitching, binding, or folding to gather or pleat the fabric through electronic knitting systems. Different knit structure variables including float length, course distance, and placement of gathering threads have a significant relationship with the resist dyed image. In addition, the research studies different types of yarn applications to create knitted resist patterns. The authors also consider aesthetic and functional aspects in knitted resist-dyed structures. This research introduces the possibilities of an integrated process of knit design and knitwear design incorporated in the seamless knitting technology and the resulting design variations in seamless knitted shibori garments.

The research has implications for researchers, designers and industrial personnel, who require information in seamless knitting design, and resist-dyeing technique and its applications in the textile and apparel field.