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Title

3-D Knit Transformations

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Biography

Amanda Smith has been employed at AUT University, Auckland, New Zealand since 2002 to the present time, as a senior lecturer in the Fashion and Textiles Department, School of Art and Design, Faculty of Design and Creative Technologies. Having recently completed a PhD *Seamless Knitwear: Singularities in Design* (2013). She is Co-Director of the Textiles and Design Lab, Programme Leader of the Master of Art and Design, Strand Leader of Fashion and Textiles, bachelor of Art and Design Honours and is Senior Lecturer in the Fashion and Textiles Department.

Gordon Fraser is a Senior Technician at AUT University's Textile and Design Lab. He joined the lab from industry in 2007 where he amassed over 30 years of technical knitting experience both in the UK and in New Zealand. His technical expertise is in the use of Shima Seiki knitting technology including WholeGarment, Intarsia and Accessories. Gordon has been engaged in running knit programming courses for AUT's staff and students as well as providing technical support, consultancy and training to the industry sector.

Jyoti Kalyanji is a PhD candidate at AUT University. In her Master of Art and Design Jyoti spent much of her practice at the Textile & Design Lab at AUT, learning about seamless knit technology. Combining this technical knowledge with design experience she developed a range of seamlessly knitted home-ware and soft furniture prototypes. For Jyoti, this reinforced the vast unrealised potential of seamless knit technology. This is being explored in her PhD research through practice-based, collaborative product developments.

Abstract

Rapid advances in seamless knitting technology are opening up significant opportunities in the design, production and application of knitted textile preforms. Introduced in the mid 1990's, seamless machinery enables shaped, 3-dimensional knitted forms to be produced entirely by machine. While garment producers globally adopted the technology for its economic efficiencies, the standardised templates in the technology's software have generally reduced the sophistication of designs produced. Although the significant unrealised potential in seamless technology is widely acknowledged, designers and manufacturers are facing difficulties in understanding and integrating the complex technology into their practice. There remains a fundamental gap in knowledge and skills, in part due to a simplified and modular garment based user interface, which fronts a complex and sophisticated technology. Of the limited research in this area, most relates to garment shaping. More recently, we have started to see sophisticated applications of this technology in highly technical or artisanal design outcomes emerging from textile research centres.

The design and production of knitted textile forms in 3-dimensions, as opposed to the 2-dimensional flat pattern and construction of the past, is a significant conceptual shift for traditional textile design practice. Traditional craft and design practices are often disrupted by the emergence of new technologies. We believe that the disruption created by seamless knit technology has the potential to vastly change both the design and application of knitted textiles, moving knitted textile manufacturing up the value chain.

This installation showcases the advanced capabilities of seamless knitting technology for innovative, 3-dimensional form building and high-end design outcomes. The group submitting this proposal consists of a knitwear designer, knitted textile designer and knit technician. All are experienced in this field, and will draw on current research and developments to work collaboratively in producing a collection of seamless knitted products that demonstrate unique shaping, 3-dimensionality, pattern and texture. The collection includes both garment and non-garment applications and may incorporate smart textile applications.