

# Tilak Dias

Professor of Knitting at Nottingham Trent University

School of Art & Design

Staff Group(s)

Fashion, knitwear and textile design

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Tilak Dias is the Professor of Knitting at Nottingham Trent University. He is the founder and the leader of the Advanced Textiles Research Group in the School of Art and Design at Nottingham Trent University. Professor Dias has a background in electronics, textiles and electronic textiles and a track record in exploiting his research.

The intellectual property of his work has been protected with 41 patent applications with 24 already granted. In addition, Professor Dias' research has resulted in the creation three spin-out companies in the UK for the commercialisation of the above IP. The main focus of his current work is in the area of electronic textiles where the objective is to embed integrated circuit chips within the fibres of yarns.

In addition, Professor Dias is working on a collaborative EPSRC project with Loughborough University on the development of embroidered fabric antenna and with the University of Sheffield on the development of knitted metamaterials for communication systems in a DSTL sponsored project. Professor Dias is also working with the military in the development of active camouflage and prosthetic limb interfaces.

Other projects have been electronic textiles for the automotive industry, electrically heated gloves, textile sensors for stroke rehabilitation and textile electrodes for ECG measurement. Professor Dias has also developed a novel technology platform for the production of patient customised compression garments for the treatment of venous ulcers and lymphoedema, and has published over 100 papers in journals and international conferences.

## Current projects:

- smart heating textiles (heating gloves, heating back supports and garments)
- knitted transducers, sensors and health monitoring garments
- Knitted garments for motion detection and controlling electronic devices
- light emitting textiles
- fabric antenna systems
- 3D seamless customised compression systems for the treatment of venous disease, lymphoedema and burns
- improved blood pressure measuring cuffs
- three dimensionally knitted structures for drug delivery systems
- three dimensionally knitted garments for prosthetics
- intelligent yarn delivery systems for computerised knitting machines
- 3D knitted spacer structures for architectural, medical, electrical and PPE applications.

## Keywords

Smart and interactive textiles, Knitted compression garments, 3D knitting, Medical textiles, Textiles for personal protection equipment,.