

Materials

Knowledge Transfer Network

Technical Knitting for Innovation

One Day Conference, 1st May 2009

Manchester, United Kingdom

- ▶ Overview
- ▶ Conference Programme
- ▶ Speakers Biographies
- ▶ Abstracts of Conference Papers



Technical Knitting for Innovation

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Technitex, a UK government funded knowledge transfer group within the Materials KTN, is hosting 'Technical Knitting for Innovation', a one day conference, which will focus on innovation in knitted textiles. The event will highlight new products and technologies, and present novel research in knitted textiles.

Event info:

Friday 1st May 2009

Free event for all delegates

Venue:

Cockcroft Theatre, Manchester Conference Centre, Weston Building, Sackville Street, Manchester, M1 3BB, United Kingdom.

How to find Manchester Conference Centre

Key Topics:

- Electro-Textiles
- SMART Textiles
- Medical Textiles
- Knitting Technologies

Who should attend?

- Knitwear and manufacturers of warp and weft knitted fabrics
- Suppliers of fibres, yarns and chemicals
- Suppliers of machinery and equipment
- Brands and retailers of functional knitted textiles
- Textile Academics
- Textile students

► [Download Conference Programme](#)

How to register for the conference

Entry is free to all delegates. However, delegates must register their name and company name and address with Brian McCarthy at Technitex by email or fax, as places are limited.

Technitex, Arch 30, North Campus Incubator, Altrincham Street, off Sackville Street, Manchester, M1 3NJ

Tel: +44 (0)161 306 8500

Fax: +44 (0)161 306 8501

Email: brianmccarthy@technitex.org

Event info:

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Conference Programme

9:00	Registration
9:30	Welcome & Introduction, Brian McCarthy, Technitex, Materials KTN
9:45	Keynote Speech, Martin Bentham, Courtaulds (UK) Ltd 'Innovation: Research and Development'
10:15	Paper 1, Michael Siddons 'Yarn, the vital ingredient'
10:45	BREAK
11:00	Paper 2, Charles Myring, Clariant 'New chemical finishes for high performance Casualwear and Sportswear Clothing'
11:30	Paper 3, Dr Andrew Ives, Advanced Therapeutic Materials Ltd 'The life-cycle of an idea'
12:00	Paper 4, Martin Legner, H. Stoll & Co 'From woollen sweaters to High Tech Knit Solutions'
12:30	Paper 5, Dr Tilak Dias, University of Manchester 'Knitted Electro-Textiles'
1:00	LUNCH
2:00	Paper 6, Mark Pedley, SmartLife Technologies Ltd 'Cool Sensors for Freer Living'
2:30	Paper 7, Cath Rogan, Smart Garment People Ltd 'New technologies and new opportunities for the knitwear sector'
3:00	Break
3:15	Paper 8, Marianne Curtis, Knitting International 'How the 'Green' Agenda is Boosting Demand for Technical Knits'
3:45	Paper 9, Brian McCarthy, Materials KTN 'The Relaunch of the Materials KTN'
4:15	Close

View Speaker Biographies

View Abstracts of conference papers

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Abstracts:

Keynote:

Martin Bentham,
Courtaulds (UK) Ltd

Title: 'Innovation: Research and Development'

Initially, the aim is to identify the purpose and to clarify the meaning of Innovation and then project life cycles and stage gates are discussed. This is followed by an introduction to a vital part of Innovation, the protection and control of Intellectual Property.

1. Michael Siddons,

Title: 'Yarn, the vital ingredient'

The process of development 'when done well' is very wholistic. The selection of yarns and fibres for a project is dependant on so many conflicting requirements and considerations that it may well be the core consideration when starting out on a new product development.

2. Charles Myring,
Clariant

Title: 'New chemical finishes for high performance Casualwear and Sportswear Clothing'

Awaiting information.

3. Dr Andrew Ives,
Advanced Therapeutic
Materials Ltd

Title: 'The life-cycle of an idea'

The fall from grace of so many of the once dominant UK manufacturing sectors has been well documented over the past century and continues today. Equally well chronicled is the lamentable failure of the Nation to grasp a good idea and to drive it to commercial success.

If we are to recover our standing as a major economic power in the world then we will ignore innovation and manufacturing at our peril. The creative spark is still alight but for the small, embryonic enterprise, life is still tough. Perhaps this is an application of natural selection at its most effective, or maybe it is a structural weakness leading to lost opportunity.

4. Martin Legner,

H. Stoll & Co

Title: 'From woollen sweaters to High Tech Knit Solutions'

Based on the versatile design and shaping options of flat knitting machines Stoll has used its know how in machine building and textile applications to push the technology forward beyond its standard use in the fashion and apparel business.

The chance to combine the strength of fabric shaping along with stitch techniques generating knit structures allowing to copy technical fabric characteristics which are known from textile technologies such as weaving, warp and circular knitting have made the flat knitting technology a secret winner in domains where innovation, complexity and rationalisation have been asked for.

Today CMS flat knitting machines do service in industries supplying the medical and furniture business but also industrial sections and even modern technologies such as conductive and electr(on)ically responsive garments.

5. Dr Tilak Dias,
University of Manchester

Title: 'Knitted Electro-Textiles'

The current generation of textiles, including technical textiles are passive. However the next generation of textiles will have the ability to monitor its environment and interact accordingly in order to accomplish a pre-programmed functionality. Such textiles can be considered as truly smart textiles, and they would consist of three basic components:

- 1.sensing and measuring capability;
- 2.activation capability;
- 3.intelligence (programming capability).

6. Mark Pedley,
SmartLife
Technologies Ltd

Title: 'Cool Sensors for Freer Living'

1. Fabric structures and fabric sensors will become the 'norm' for the future
2. Personalise Healthcare is critical for urban and remote communities, condition monitoring and a growing number of lifestyle applications.
3. A collaborative and integrated delivery; multifunctional performance capabilities and compatibility with existing discrete monitoring sensors

7. Cath Rogan,
Smart Garment
People Ltd

Title: 'New technologies and new opportunities for the knitwear sector'

This session will provide an overview of some of the key technology drivers in the advanced textile sector along with some suggestions on how to successfully exploit the opportunities they offer.

Some of the topics covered:

- Nanotechnology in textiles – what difference does it make?
- How do we get it/use it?
- Bio-mimetics – inspired by nature
- Wearable technology & e-textiles
- Body mapping & base layers
- Seam-free technologies
- New collaborations and new supply chains

8. Marianne Curtis,
Knitting International

Title: 'How the 'Green' Agenda is Boosting Demand for Technical Knits'

Across the world, and particularly in the developed nations, governments are promoting policies aimed at tackling climate change. This paper examines the role of technical knits in facilitating implementation of these policies. For example, countries are turning to wind power as a low-carbon method of energy generation which is boosting demand for windmills and, in turn, warp knitted glass fibre fabrics which form part of the composite used to make the blades. Composites also feature strongly in modern aircraft, permitting fuel savings with environmental and economic benefits.

9. Brian McCarthy,
Materials KTN

Title: 'The Relaunch of the Materials KTN'

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Abstract:

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Biography:

Martin graduated from the University of Manchester, having studied Textile Chemistry and immediately entered the textile industry, working for several key suppliers to Marks and Spencer. He has been with Courtaulds and their former owners, Sara Lee, for 14 years, being heavily involved with knitted fabrics during this period.

For the last 7 years, Martin has played a role in Innovation, formerly for Sara Lee and latterly with Courtaulds, having 11 patents published. He has also taken over the management of Intellectual Property within Courtaulds.

Additional positions include membership of the Board of TechniTex (Chairing their Research Committee) and being a Technical Advisor to the National Textile Center in the USA.

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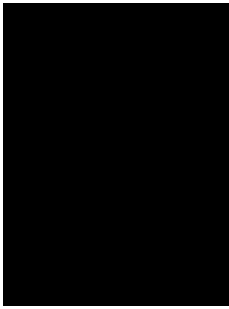
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Title: 'Yarn, the vital ingredient'

Abstract:

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Biography:

Mick Siddons is a textile engineer with a background in knitting machinery (Monarch/Fukuhara, Wildt Mellor Bromley) and with international expertise in project development and sales. He has led yarn and fibre innovation, market development and sales efforts for Viscosuisse, Unifi and Wykes International, and has run a successful consultancy business working on diverse technical/market development projects for major sportswear brands and Invista. He is a regular contributor to industry trade publications.

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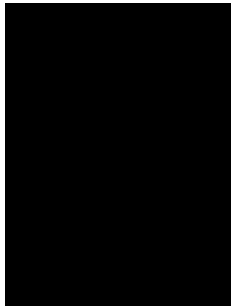
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3. Dr Andrew Ives, Advanced Therapeutic Materials Ltd

Title: 'The life-cycle of an idea'

Abstract:

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If we are to recover our standing as a major economic power in the world then we will ignore innovation and manufacturing at our peril. The creative spark is still alight but for the small, embryonic enterprise, life is still tough. Perhaps this is an application of natural selection at its most effective, or maybe it is a structural weakness leading to lost opportunity.

Within our Universities the creative seed corn is as virile as ever but once this is exposed to the wider commercial world it is the lack of encouragement of the green shoots which too often leads to failure. There are some first class initiatives aimed at addressing this, are these likely to succeed? Are they readily available and well targeted? And do we have a "joined up" network of support and encouragement for entrepreneurial initiative?

I will share with you the experiences of a small start up enterprise which might just succeed despite the current economic conditions. I can offer few answers but might provide some food for thought.

Biography:

MA in Natural Sciences 1967, PhD 1970, University of Cambridge, MBA 1982, (Oxford/Harvard). Assoc Inst Cert Accountants 1979, a materials scientist who followed an industrial career in materials related industries including high tech metals, batteries and electronics.

Andrew has operated at CEO/Chairman level in multinational and quoted companies since 1980. He has extensive experience of technology businesses and international trade. He is currently CEO of Composite Materials Technology Plc which was a MBO vehicle for a quoted company acquired in 1998. Andrew has close involvement with a number of businesses in Asia and is the largest shareholder and founder of Advanced Therapeutic Materials Limited which in 2004 acquired technology developed in the University of Manchester to develop medical devices for delivery of compression therapy. He currently sits on the Healthcare Sector Advisory group for UK Trade and Investment.

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Today CMS flat knitting machines do service in industries supplying the medical and furniture business but also industrial sections and even modern technologies such conductive and electr(on)ically responsive garments.

Biography:

Martin is Sales Manager – Technical Textile Applications for H.Stoll & CO KG, a leading manufacturer of flat knitting machines.

Education

1993 – 1994 Post graduate studies of International Marketing at the Export-Akademie Baden Württemberg at Reutlingen. Title: MBA in International Marketing

1988 – 1993: Studies of Textile Engineering at the Fachhochschule für Wirtschaft und Technik (Polytechnic school for economic and technical sciences) at Reutlingen. Title: Dipl. Ing. (FH)

Professional Background:

from fall 1997: with H. Stoll GmbH & Co. KG at Reutlingen, Germany

co-ordination of international sales and marketing activities for technical and industrial applications of Stoll flat knitting machines. Major areas of application:

- medical textiles
- knitted to shape upholstery and interior fabrics for automotive, transport and contract use
- composite applications
- wire textiles

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- 1.sensing and measuring capability;
- 2.activation capability;
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One of the solutions for incorporating the above components into a textile structure is to create electrically active zones within the structure, whose electrical characteristics can change due to an environmental change or whose structural properties would change due to application of an electrical signal, for example change of dimensions due to the flow of an electrical current in the electrically active area. Generally textiles are made out of materials of very high electrical resistance and can, therefore, be considered as materials with good electrical insulating properties.

Biography:

Dr Tilak Dias is a senior lecturer in the School of Materials of the University of Manchester, and his research is centred on the disciplines of textile material properties and performance and has been largely interdisciplinary in nature, involving the relationships between structure, properties and performance. Since 2002 Dr Dias has focused his research activities in two areas; 1. Advanced knitted structures and 2. Integration of textile technology with other technologies. The above research focus has led into such diverse fields as knitted sensors, embroidered antennas, encapsulation of micro-chips within the fibres of a yarn and medical textiles with knee ligament prostheses, eczema garments, varicose ulcer and lymphoedema treatment systems, blood pressure measuring cuffs, and burns garments. Dr Dias' research has resulted in three novel core technology platforms; which have resulted in the formation of three spin out companies in the UK for their commercial exploitation. He has published over 60 scientific papers in leading journals and conferences and he is named as the lead inventor in more than 35 patents.

Another approach is to encapsulate electronic chips within the fibres of a yarn. A polymer resin is used to bind the chip with the fibres of the yarn. The concept is to position encapsulated chips along the length of the yarn at a predetermined interval, which could be acceptable as thick places. The encapsulated area would form a hermitically closed seal around the chip thus protecting it from all forms of stresses (mechanical, thermal, chemical etc). The encapsulation of an electronic chip within the fibres of a yarn would craft an intelligent yarn with the ability of physical sensing, signal processing, transmitting and receiving.

The aim of the paper is to demonstrate the development of electrically active knitted structures which have resulted from the research carried out in the School of Materials of the University of Manchester, UK.

Authors:

T Dias*, A. Fernando, W Hurley*, R Monaragala* and R Wijeyesiriwardana**

*Textiles and Paper, School of Materials, The University of Manchester, UK

** ReliSen LLC, Bentonville, Arkansas 72712 USA

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Biography:

As the CEO of a globally leading technology company, SmartLife® Technologies, Mark is recognised for injecting leadership, entrepreneurial flair and foresight into a business with a truly worldwide potential. Experienced in IPR technical transfer, fibres / material technologies and ICT, the opportunity to create a platform technology, personalise it to meet the needs of both individuals and established markets such as HealthCare, Military and Sports, whilst building partner and shareholder value, are the drivers behind this recent venture.

Mark has built and sold a number of businesses over 25 years, his passion and enthusiasm for ideas, innovation, entrepreneurship and networking is focused on appreciating new and emerging technologies to secure the best returns. This success, coupled with commitment to, and belief in, the people who make ideas happen create a repeatable formula.

mark@markpedley.com

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Abstract:

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- Bio-mimetics – inspired by nature
- Wearable technology & e-textiles
- Body mapping & base layers
- Seam-free technologies
- New collaborations and new supply chains

Biography:

Smart Garment People is a textile and clothing consultancy network and product development agency, which specialises in cutting-edge “smart” textile technologies for defence, first responder and elite sports and outdoor wear markets.

Cath Rogan is Principal of the company and has over 18 years of experience in performance clothing and textiles, working with brands including Karrimor, Berghaus, Barbour, Henri Lloyd, Lowe Alpine and Remploy Frontline, along with government agencies including the Home Office, Metropolitan Police and MoD.

cath@smartgarmentpeople.com

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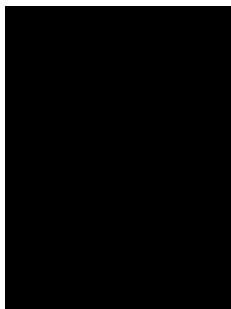
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Title: 'How the 'Green' Agenda is Boosting Demand
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Biography:

Marianne Curtis BSc (hons) MSc is editor of Knitting International, the technical and management journal for hosiery, underwear, knitwear, knitted fabric and knitted technical textiles manufacturers. She has worked as a journalist in the technical and trade media for more than a decade, including reporting and editing roles on Hospital Doctor, Doctor and Farmers Weekly, before joining Knitting International two years ago. As well as editing Knitting International and Textile Horizons, she has also reported on World Textile Publications' (owner of Knitting International) daily newspapers for ITMA 2007 and ITMA Asia + CITME 2008.

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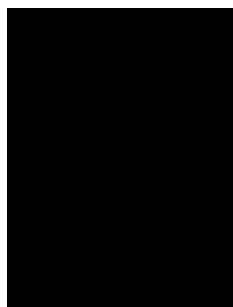
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9. Brian McCarthy, Materials KTN

Title: 'The Relaunch of the Materials KTN'

Abstract:

Awaiting information

Biography:

Brian McCarthy has a B.Sc. in Genetics (B.Sc.) and an M.Sc. in Microbiology. From 1978 – 1988 he was Group Manager, Science at WIRA, in Leeds and was Executive Manager and PTP Director at BTTG, Manchester from 1988-2000. From 2000 – 2004 he was Executive Manager – Quality and Innovation and TechniTex Business Development – BTTG, Manchester.

Brian is currently Director of Technitex (www.technitex.org), the technical textiles node of the Materials Knowledge Transfer Network (KTN) (www.materialsktn.net). TechniTex is a not-for-profit organisation with an international industrial membership.

Brian is the UK Expert and Chairman of the new British Standards Institute Committee on Smart Textiles. He is on the Industrial Advisory Boards of the North West Composite Centre, Nanoforce Ltd and the Universities of Manchester (Textiles), Bolton (Advanced Materials) and Bradford (Biomedical Sciences). Brian is a member of the Institute of Biology (M.I.Biol.) and a Chartered Biologist (C. Biol.). He is also a Fellow of the Linnean Society (F.L.S.), a Member and Editorial Board Member of the Society of Dyers and Colourists (SDC) and a Member of the Textile Institute (T.I.).

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