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Smart Textiles Europe



INTERTECH



Wednesday 13 – Thursday 14
December 2006

The Paramount Carlton,
Edinburgh, UK

Radically changing the functionality of textiles by incorporating new technologies to create sensitive, interactive and intelligent materials

Two day Intertech-Pira conference and half day pre-conference workshop



Including presentations from:

- eleksen smart fabric interfaces
- LEVI STRAUSS & CO.
- INTERACTIVE WEAR
- INTERTECH
- PIRA
- PERATECH
- Cenamaps Applying small-scale technologies
- SIMON FRASER UNIVERSITY SURREY
- HUNTSMAN Enriching lives through innovation
- VERHAERT
- SEFAR
- ZIMMERMANN elastische und technische Garne
- MANCHESTER 1824
- Smartex
- UNIVERSITÀ DI PISA
- HERIOT WATT UNIVERSITY

With key contributions from:

- Centre for Nano, Micro and Photonic Systems
- Eleksen
- Eeonx Corp
- Heriot-Watt University
- Huntsman Textile Effects
- Interactive Wear AG
- Intertech-Pira
- Levi Strauss & Co
- Mantero Seta S.p.A
- Peratech
- Sefar AG
- Sigma Technologies International LLC
- Simon Fraser University
- Technitex Faraday Ltd
- The University of Manchester
- University of Pisa
- University of Wales Newport
- Verhaert
- W Zimmerman GmbH & Co

Supporting association:



Media partners:



PLUS!

Don't miss the pre-conference workshop
Overview of Smart Textiles and Nanotechnology taking place on
Tuesday 12 December 2006

Smart Textiles Europe



9 reasons to attend

- Update your knowledge of **emerging smart textile technologies** around the globe and their financial and commercial viability
- Discover **novel smart textile applications for defence, sportswear, medicine, fashion, industrial, health, automotive and signage**
- Find out everything you need to know about sensors, actuators, flexible power sources, plastic electronics, wireless communication, photovoltaics and other **key technologies accelerating the creation of smart textiles**
- Understand **how micro electronic devices are being incorporated into fabric** and textile substrates
- Identify **new markets for wearable technology** and how commercialisation will progress
- **Network with industry leaders and end-users driving forward growth** in smart textiles
- Examine **barriers to rapid smart textile growth** – durability, cost, technology improvement, consumer acceptance – and what is being done to overcome these hurdles
- Identify **techniques for functionalisation of fabrics** and what R&D is being carried out globally
- Meet with **textile manufacturers and converters, electronic component suppliers, end-users and brand owners** who share your interest in intelligent textiles

Smart textile technology is innovative, applications are endless and commercialisation is the future

Applications for smart textiles are developing at an explosive rate. Materials functionality which historically was limited to protective uses, today has virtually unlimited potential. Smart textiles can now re-charge personal electronic devices, detect ailments, conserve energy, self clean, mimic nature, monitor temperature changes and even react to external stimuli. Industries keen to exploit intelligent textiles include sport, fashion, medicine, defence and aerospace where high performance is critical. The market for smart fabrics is predicted to grow to US\$720 million by 2008 representing a compound annual growth rate of 19%*. With such growth potential, the time is ripe for investment. Attend this conference to find out how your business could tap into this lucrative market.

* A recent study by Venture Development Corporation

So what exactly are smart textiles?

Smart or intelligent textiles are defined as materials and structures that sense and react to environmental conditions or stimuli such as those from mechanical, thermal, chemical, electrical, magnetic or other sources. Intertech-Pira's **Smart Textiles Europe** programme will focus not only on enabling technologies such as microsensors, flexible electronics, handheld multimedia devices and smart coatings but also on how these will develop into intelligent, functional, and high performance garments.

How can the right opportunities be developed?

Existing applications from the defence and fashion sectors will be profiled at the conference where electric signal currents, light energy and wireless multimedia devices are embedded in clothing. Hear expert predictions on how the smart textiles market will continue to expand and develop into all sectors of personal, professional and public life. Join the debate to gain valuable insight into potential applications for the future.

Get one step ahead...

Building on the success of previous years, Intertech-Pira's **Smart Textiles Europe** conference brings you key information on the most crucial factors driving smart textiles. It unveils the very latest technologies, applications and their future direction. New market exploitation and penetration inevitably comes at a cost, but this thoroughly researched programme will take you through the best ways to leverage technologies, develop applications, and build successful commercial models to minimise these costs, right from creation through to the utilisation of the finished product.

Who you'll meet

Meet and network with experts revolutionising the textiles industry – including technology developers, fabric manufacturers and converters, international research and development gurus, end-users with case study experience and buyers keen to find applications for their marketplace. This one-stop-shop programme will provide the perfect opportunity to quickly get up to speed with global smart textiles activity as well as meeting and doing business with those driving it forward.

Who should attend?

With radical changes shaping the industry and endless opportunities ahead, it's vital that all sectors of this field attend this year's **Smart Textiles Europe** conference. This includes:

- **Textile manufacturers**
- **End users and buyers** of high performance textiles within industrial, fashion, medicine, health, defence, aviation, sportswear, automotive and display sectors
- **Manufacturers of smart components** (plastic electronics, multimedia devices, flexible power and solar cells)
- **Suppliers of textile effects and additives**
- **Academics, researchers, consultants and developers** working in this field

PLUS! Don't miss the pre-conference workshop!
Overview of Smart Textiles and Nanotechnology

Wednesday 13 December 2006

08.30 Registration and refreshments

9.30 **Opening remarks from the chair: market overview and industry forecast**
Prof George Stylios, Director, Research Institute for Flexible Materials, HERIOT-WATT UNIVERSITY, UK

New markets for smart textiles

09.45 **Wearable technology in casual apparel: the point of view of the retailer**

- The market of wearable technology and Levi Strauss & Co product initiatives to-date
- The target group
- Functionality vs look
- Durability
- Financial viability
- The outlook

END USER PERSPECTIVE

Alberto De Conti, Director, Global Innovation Group, LEVI STRAUSS & CO, Belgium

10.20 **The growing impact of touch sensitive textiles on the consumer electronics (CE) market for wearable entertainment and communications products**

- Highlighting how the market is beginning to accelerate with the entry of major apparel brands, retailers and accessory manufacturers
- Examining how wearable solutions are blurring the boundary between fashion, apparel and CE device design
- Demonstrating how manufacturers on the soft goods and CE side should prepare for this coming market opportunity
- Assessing the real market opportunity for CE in clothing and soft-goods accessories

John Collins, VP Marketing and Business Development, ELEKSEN, UK

10.55 Morning refreshments

Working towards commercialisation of innovative design and technology

11.20 **A design process for the development of smart clothing and wearable technology**

- Finding the end-user needs
- Demonstrating the design critical path from fibres through to end of life
- What does the future hold for smart clothes and wearable technologies?

Jane McCann, Director, Smart Clothes and Wearable Technology Research Group, Newport School of Art, Media and Design, UNIVERSITY OF WALES NEWPORT, UK

11.55 **The future of tradition**

- Artisans and new technology
- Merging creativity and the smart industries
- Commercialising smart design

Dr Susannah Handley, Product Innovation Manager, Mantero Lab, MANTERO SETA S.p.A, Italy

12.30 **Street smarts: wearable urban fashion and fancy**

- Taking it to the street: communicating with networked clothing
- Getting in touch: interactive tactile textiles
- Pillow talk: designing intimacy for home and garden
- Collaboration: bridging the gap between textiles, design, fashion and fun

Thecla Schiphorst, Associate Professor, School of Interactive Arts and Technology, SIMON FRASER UNIVERSITY, Canada

13.05 Lunch will be served for all speakers and delegates

Thursday 14 December 2006

Enabling technologies for smart textiles

- 14.10 Innovating for the future: printable chemistries manufacturing on any conformable substrate**
- Large area macro electronics
 - 3D functional materials
 - Printable organic electronics
 - Plastic power
 - Printable organic photovoltaics
 - Responsive, adaptive and emotional materials
- Prof Raymond Oliver, Director, Science and Innovation, CENTRE FOR NANO, MICRO AND PHOTONIC SYSTEMS, UK**
- 14.45 High speed solventless techniques for fabrics functionalisation**
- Inline vacuum deposition of polymers and metals
 - Atmospheric plasma treatments
 - Solventless and water-free dry coating technologies
 - Solar cells for clothing and packWide web roll-to-roll high speed process
- Dr Michael G Mikhael, Director of Technology, SIGMA TECHNOLOGIES INTERNATIONAL LLC, US**
- 15.20** Afternoon refreshments
- 15.40 Making fabrics smart**
- Fabric sensing of temperature, pressure, vibration and chemical species
 - Connecting fabric sensors
- David Lussey, Technical Director, PERATECH, UK**
- 16.15 Systems on textiles, technology and applications**
- Electrical circuits on fabrics
 - Fabric actuators
 - Fabric sensors
- Marcel Strotz, Dipl Ing ETH, Project Manager PowerMatrix, Filtration Division, SEFAR AG, Switzerland**
- 16.50** Summary of day one from the chair
- 17.00 Drinks reception**
- All speakers and delegates are invited to a drinks reception where they can network with experts and discuss the day's proceedings.

Your event organiser

Intertech-Pira provides events, training, online information and publications across a wide range of zeitgeist issues and disruptive technologies affecting industry. Our 100% independent products are provided globally 24/7 and delivered by teams of independent experts at sites in Portland, US and London, UK through 20 specialised industrial platforms. Our core competencies are information on research and product development, globalisation and new markets; production methods; regulatory and compliance.

Exhibition and sponsorship opportunities

A range of sponsorship and exhibition based packages are available to organisations looking to develop their business within the field of smart textiles. Participation at the **Smart Textiles Europe** conference will demonstrate your organisation's expertise in the emerging intelligent fabrics market and raise your corporate profile amongst senior decision-makers in leading international companies. For more information on how this conference can benefit your company, please contact Caroline Potapa on +44 (0) 1372 802101, caroline.potapa@pira-international.com

08.30 Registration and refreshments

09.30 Opening remarks from the chair
Dave Simmonds, Managing Director, INTERTECH-PIRA, UK

Novel applications for smart fabrics

- 09.40 Space technology driving emerging smart fabric applications**
- Technology transfer from space to industrial wearable applications
 - Examples in different sectors: health and medical, military, sport, automotive
 - Development approach based on more than 35 years of product development
- Ann Van Mele, Account Manager Future Business Development, VERHAERT, Belgium**
- 10.15 Novel research on head and body protection for the military and police**
- Creation and study of helmet shell reinforced by single piece woven fabrics
 - Protection mechanism of body armour and possible improvement
 - Other research on body protection
- Dr Xiaogang Chen, Senior Lecturer, UNIVERSITY OF MANCHESTER, UK**
- 10.50 Body segment position reconstruction and posture classification by smart textile**
- Wearable
 - Textile based
 - Motion capture systems
 - Rehabilitation
 - Sport
 - Multimedia
- Daniilo De Rossi, Professor, Interdepartmental Research Centre 'E Piaggio', Faculty of Engineering, UNIVERSITY OF PISA, Italy**
- 11.25** Morning refreshments
- 12.00 Applications of fabrics coated with nano and microscale conducting polymer formulations**
- Current technology, products and capabilities
 - Fabric properties and advantages
 - Applications: present and future
- Dr Jamshid Avloni, President and COO, EONYX CORP, US**

12.35 Unique wire completed in fabrics: an exciting and solid starting point for the applications of tomorrow

- Conductive yarns and fabrics
- Applications for health and medical, sporting equipment and automotive industry

Hans-Peter Mauch, Managing Director, W ZIMMERMANN GMBH & CO, Germany

13.10 Lunch will be served for all speakers and delegates

Innovation for the future

- 14.20 High-IQ, intelligent effects for apparel**
- Innovative effects in colour and performance
 - Ensuring consistency in innovative effects
 - Communicating innovation to consumers
- Steve Gray C Col, ASDC, Global Head Retail Marketing, HUNTSMAN TEXTILE EFFECTS, UK**
- 14.55 Wearable electronics: latest products and innovations**
- Wearable electronics, history and introduction
 - Market segments and products
 - Newest trends
 - Technologies as 'building blocks' for products
 - Key factors a successful product
- Markus Strecker, Chief Technology Officer, INTERACTIVE WEAR AG, Germany**
- 15.30 Innovations at O'Neill**
Christiaan Roos, O'NEILL EUROPE, Netherlands
TBC
- 15.55** Summary from the chair
- 16.00** Close of conference

PLUS - All presentations on CD!

A CD-Rom of all presentations is included in your conference fee and will be sent to you after the event. You'll get the maximum benefit from the proceedings by having the information permanently available back at the office, all at no additional cost!

Overview of Smart Textiles and Nanotechnology

Half day pre-conference workshop: Tuesday 12 December 2006, 13.00 - 17.00

An interactive introduction

This interactive workshop session presents an ideal opportunity to gain a comprehensive introduction to the global smart textiles market prior to the main conference programme. It's a great chance to hear an unbiased overview of the potential for nanotechnology and how it can facilitate successful innovations for your marketplace. Bring your questions to a leading expert who not only has experience of applications currently being trialled and used but also has great insight into research on the hot textile applications of the future.

What's covered?

- Smart textiles
- Nanotechnology
- Global textile and clothing markets
- Successful innovation

Your course leader

Brian McCarthy is the director of the Technitex Faraday Partnership which is a UK government funded initiative focused on improving the interaction between research and industry. The partnership brings together design, research and the development of new technologies and applications within technical textiles. As a partnership driven by industry, it is well placed to address high technology materials and processes which facilitate the production of innovative technical design and engineered content.

Brian J McCarthy, Director, TECHNITEX FARADAY LTD, UK

