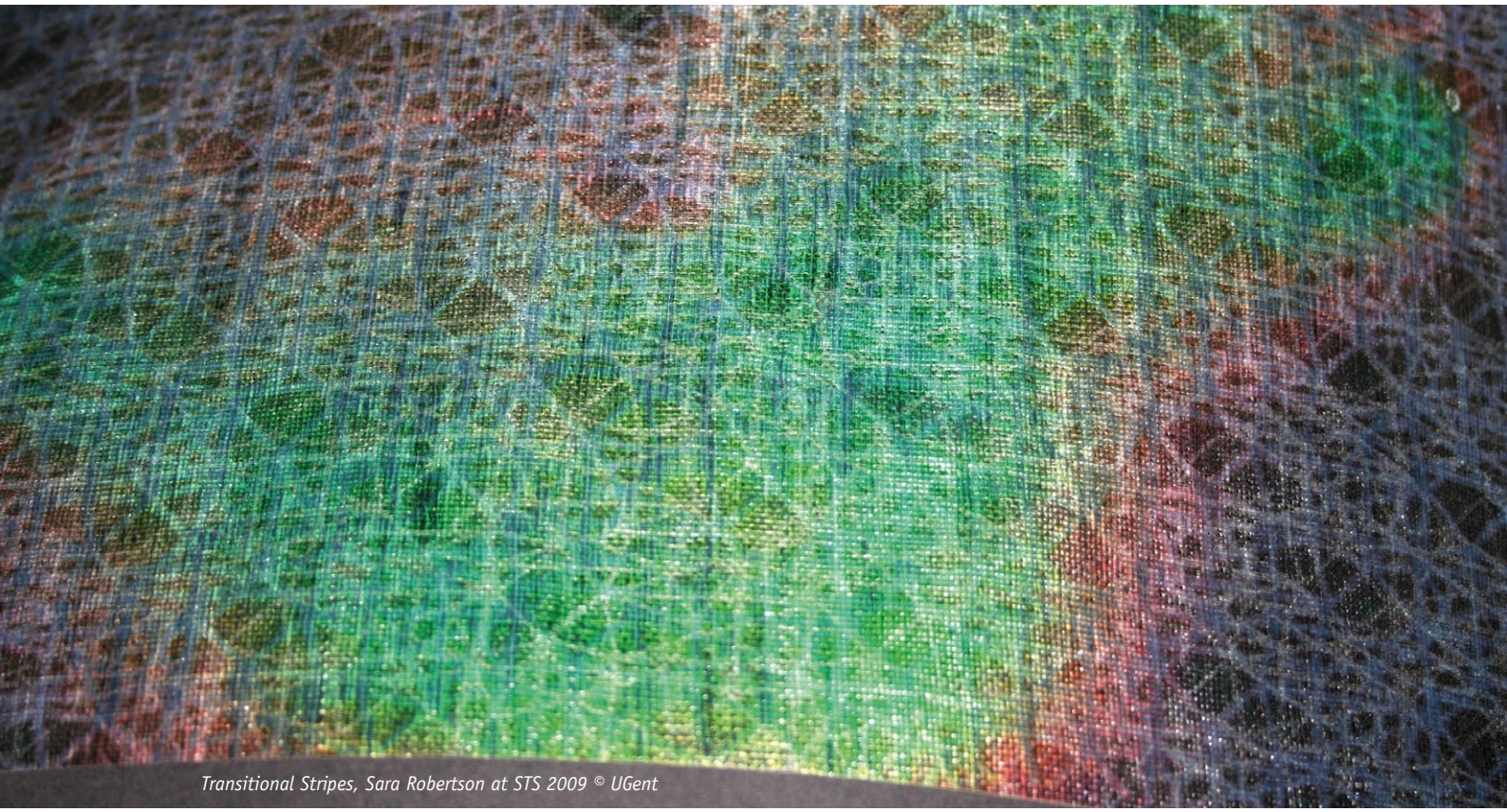
Post-academic course

Smart Textiles



Transitional Stripes, Sara Robertson at STS 2009 © UGent

Scientific coordination

Prof. dr. ir. Lieva Van Langenhove
Department of Textiles, Ghent University

Part I: Intelligent Textiles (Workshop)
18, 19 and 20 April 2011

Part II: Smart Textiles Salon (STS)
21 April 2011

This programme allows to obtain a certificate granted by Ghent University

systeX

plug and Wear

UNIVERSITEIT GENT

INSTITUUT VOOR PERMANENTE VORMING

Introduction

Why this course?

Intelligent or smart textiles are around for about ten years now. Worldwide more than 100 research projects have been accomplished, numerous papers have been presented in journals and at conferences and thousands of gadgets have been introduced to the market. Besides informing people about intelligent textiles on a theoretical level, this workshop emphasis the practical application of the knowledge – from theory to application in real prototypes. It is time to see what has actually been achieved – It's SHOWTIME!

Emotion Jacket © Philips

Part I will equip the participant with fundamental theoretical knowledge and practical insights in the field of intelligent textiles. The practical workshop, STS ToolTime, by Riccardo Marchesi from Plug and Wear shall lead to a better understanding of the information obtained in the lecture of Prof. Lieva Van Langenhove comprising the theoretical part of the workshop.

Part II will consolidate the knowledge gained in the first part. During the interactive exhibition, **Smart Textiles Salon**, the participant can see, touch and experience realized smart textiles in functioning prototypes. The knowledge gained in Part I can directly be transferred - from theory to reality - in various fields of applications. Besides stimulating the participant's creativity, this concept will inform the participant about existing prototypes and possible application areas of smart textiles.

SYSTEX is a European coordination action on intelligent textile systems. One focus of the project is on training and education. SYSTEX wants to make people aware of smart textiles and show them what is already available. It is the second edition of the **Smart Textiles Salon (STS)**, an annual interactive exhibition of intelligent textiles which has been introduced successfully in September 2009. Rather than listening to presentations, researchers and people from industry can experience working prototypes, they can see, feel and discuss achievements and challenges.

Who should attend?

The course is open to all persons involved or interested in the field of smart textiles. Besides research institutes, academia, industry or public institutions, capital investors as well as designers are welcome.

This international event should lead to new ideas and alternative routes for carrying out research and hence to more effective work.

Framework

SYSTEX is the FP7 Coordination Action for Enhancing the Breakthrough of E-Textiles and Wearable Microsystems in Europe.

The project aims at developing a framework for current and future actions in research, education and technology transfer in the field of e-textiles and wearable microsystems in Europe and supports the textile industry to transform into a dynamic, innovative, knowledge-driven, competitive and sustainable sector (www.systex.org).

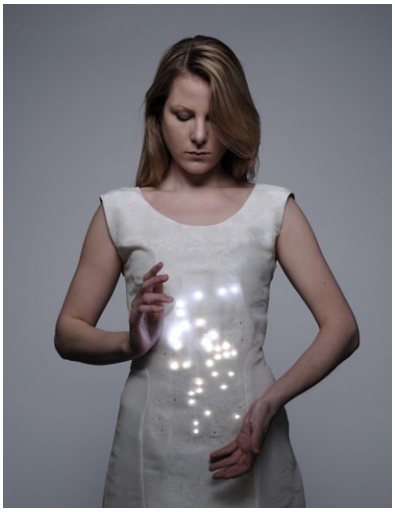
Project coordination: Lieva Van Langenhove, Ghent University, Department of Textiles

Project Consortium: UGENT, SMARTEX, UNIPI, IMEC, PHILIPS, MULTITEL, IFTH, BVBA ANNE DEMOOR, IHOFMANN, PLASTIC ELECTRONICS

Post-academic Course Certificate granted by Ghent University

This programme is part of Ghent University's post-academic courses. To receive a certificate, one should attend all parts of the course and successfully complete the exam.

Course certificates are a personal merit: participants who aspire a certificate cannot be replaced, others can.



Pneuma Dress © Fraunhofer IZM

Programme

Part I: Intelligent Textiles (Workshop)
18, 19 and 20 April 2011

18 April 2011

Lecture given by Prof. Lieva Van Langenhove (Ghent University)
Starting with a brief introduction into the field of smart textiles, the topic of the first day will include a definition of smart textiles and an overview about the evolution and functions of smart textiles. Furthermore, electro-conductive materials and various smart textiles applications, such as in sensors, will be presented.

19 April 2011

Lecture given by Prof. Lieva Van Langenhove (Ghent University)
The lecture of the second day will continue with smart textiles applications in different fields, for instance in actuators. Besides mechanical actuators, also colour change materials and options for micro-encapsulation will be discussed. Subsequently, the research carried out at the Department of Textiles (Ghent University) will be presented and available prototypes will be demonstrated and explained. In the afternoon session, STS ToolTime, the theory will be transferred to practice.

STS ToolTime presented by Riccardo Marchesi (Plug and Wear)
During the practical part of the workshop, STS ToolTime, the participant will make his or her own smart textile product.

Each participant will complete the SOFT ORGAN project. In this first session of the practical training, Riccardo Marchesi from Plug and Wear assists the participant in realizing a hands-on project. Participants will learn how to make music with six textile buttons and a small integrated circuit (IC). Some dexterity is necessary since participants will have to sew or solder the components on a piece of fabric.

20 April 2011

Lecture given by Prof. Lieva Van Langenhove (Ghent University)
The final theoretical part of the workshop will deal with smart textiles applications in the field of energy and other functions.

Electrotherapeutic socks © UGent

STS ToolTime presented by Riccardo Marchesi (Plug and Wear)
The participants will complete their individual smart textiles project.

Our workshop is held by qualified teachers:

Prof. dr. ir. Lieva Van Langenhove holds a Master and a PhD in textile engineering (Ghent University). She is involved in several national and European projects on weaving, smart textiles and biotechnology. She is chairing the ETP expert group on smart textiles and is author of more than 150 papers and presentations at conferences. Furthermore, she is coordinator of the European project SYSTEX, the FP7 coordination action for enhancing the breakthrough of e-textiles and wearable microsystems in Europe.

Mr. Riccardo Marchesi graduated in electronic engineering at the University of Florence. He joined SCOMAR srl and became Export Sales Manager for flat knitting machines. Since 1992, he is involved in the development of new machines. He is holding two International Patents. In 2000, the company started changing its production lines, and Riccardo Marchesi started studying knitted and laminated technical textiles for electromagnetic shielding. Since 2008, he develops interactive textiles. He is the founder of plugandwear.com.

Part II: Smart Textiles Salon
21 April 2011

The Smart Textiles Salon (STS) is an innovative exhibition concept. It combines the transfer of theory through a presentation of various exposés as well as hands-on practical insight through demonstration of the prototypes' working principle. The participant can experience the inventions on three different levels: listening to the information given by the presenter, seeing the prototype working and trying out the prototype personally.

Approximately, 20 prototypes will be chosen for display at the Smart Textiles Salon 2011. The prototypes will be shown to the audience in a 10 to 15 min. presentation following a preset programme (t.b.d.). More information can be found on www.smarttextilessalon.com.

One of the presenters of the Smart Textiles Salon is the winner of the SYSTEX Student Award 2010, Kunal Mankodiya (Institute for Signal Processing, University of Luebeck, DE). Mr. Mankodiya won the SYSTEX Student Award 2010 for his outstanding work in the field of Multimodal Biosignal Monitoring. Through this award, SYSTEX wants to raise students' interest in intelligent textiles. Their work contributes to further scientific and technological developments, and being our future employees their drive will push our sector forward.

A booklet including the descriptions of all prototypes exhibited will be distributed to the participants.

Practical info

Practical information

The lessons of part I (18, 19 and 20 April 2011) and the Smart Textiles Salon (21 April 2011) start at 9.00 a.m. and end at 5.00 p.m. Each day is provided with 2 coffee breaks and a lunch break with sandwiches.

Location

Ghent University, Institute for Continuing Education, Campus Engineering Faculty, Building Magnel, Technologiepark 904, 9052 Zwijnaarde, Belgium.

Participation Fee

The participation fee includes the tuition fee, course notes, soft drinks, coffee and sandwiches. Payment occurs after reception of the invoice. All invoices are due in thirty days. All fees are exempt from VAT. Travelling expenses and accommodation are at the expense of the participant.

	Fee
Part I: Intelligent Textiles (Workshop)	€ 500
Part II: Smart Textiles Salon	€ 200
Part I and II	**€ 600**

Accommodation

To book a hotel in Ghent, we refer to www.visitgent.be

Cancellation Policy

When cancelling up to 10 days before the start of the course or part, 25% of the participation fee will be charged. When cancelling less than 10 days before the start of the part, the full fee is due.

Subscription & Information

The subscription form can be found on:
http://www.ivpv.ugent.be/smarttextiles
For questions about the content of the course,
contact Lina Rambausek: Lina.Rambausek@UGent.be

The IVPV secretariat can also be contacted:
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Els Van Lierde, Technologiepark 913,
9052 Zwijnaarde, Belgium
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E-mail: ivpv@UGent.be

Dates may change due to unforeseen reasons.

Coat Dis. Appear © Fraunhofer IZM

Call for prototypes

We would like to invite you to actively contribute to the success of the interactive exhibition by submitting your prototype. The prototype should fit in the scope of the exhibition being textile-based or compatible with intelligent textile systems.
The template for submission can be found on www.smarttextilessalon.com. All documents must be written in English and should be submitted to Judith.Kenis@UGent.be no later than 15 March 2011. The selected contributions will be notified latest 31 March 2011. The exhibition space is limited to a maximum of 20 prototypes. All participants have to register for at least the Smart Textiles Salon. You can find all the detailed information on www.ivpv.ugent.be/smarttextiles and on www.systex.org

Textile Antenna © UGent

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