Connecting senses
The creation of sensory networking

Machines, devices and plastic components of every type are receiving a second skin. Via sensors they are learning to interact with people and mediate between the world and us as intelligent assistants. This is creating a fundamental change in the quality of our perception, as we can thus amplify our senses by leaps and bounds to a previously unknown extent.

The omnipresence of computers, which has become a matter of course, in tandem with their networking, forms the infrastructure for this purpose. In the future, calculation capacity will no longer be the prime consideration, but rather the quality of physical interfaces. Smart Plastics combine the three key components comprised by electronics, plastics and design to create one of the most significant constitutive instruments for the coming decade.

For some time, we have been linked with another via the web and Smart Plastics mean that we will be increasingly involved with the things that surround us. Almost casually they will register our real activities and provide value added for us individually and collectively from the data generated.

Experience and interact with the environment. Anywhere and in real time. With the pushing back of the limits at the interfaces between humans and machines, our possibilities will multiply in an exponential manner.

Learn more about developments in the threshold area formed by plastics, electronics and design at the 2nd Smart Plastics Congress.
Panel discussion:

**MARIO AIWASIAN**
CTO, Development, aiwasian.com, St. Andrä Wörndern, Austria
mario@aiwasian.com | www.aiwasian.com

“Smart Piano”, rewire new synapses
What increases creativity of pianists/keyboardists?
By open up a new dimension, a third dimension. To help recognize
the finger position on the key, we are using smart plastics.

**ALOIS FERSCHA**
Head of Department, Institute for Pervasive Computing,
Johannes Kepler University Linz, Austria
alois.ferscha@jku.at | www.pervasive.jku.at

Plastic Electronics for Wearable Computing
Plastic electronics and advanced fibers converging into wearable textiles
(e-textiles) have stimulated a new prospect for wearable and mobile computing platforms towards intelligent every-day clothing. Among the potentials of e-textiles are flexible displays, low power lighting and very light weight sensors.

**GERFRIED STOCKER**
Artistic Director, Ars Electronica Center GmbH, Linz, Austria
gerfried.stocker@aec.at | www.aec.at

The digital revolution will become interesting if the devices are no longer square and stiff, but may have shapes and surfaces that are intuitive and natural for humans.

**PHILIPPE WEISSEL**
CEO, plastic electronic GmbH, Linz, Austria
philipp.weissel@plastic-electronic.com | www.plastic-electronic.com

“Open Innovation” is like a championship at which all the players are winners
Smart Plastics require novel networks for development and production. How “Open Innovation” contributes to networking.

**SIEGFRIED BAUER**
Head of Department, Soft Mater Physics, Johannes Kepler University Linz, Austria
sbauer@jku.at | www.somap.jku.at

Going soft: From ultraflexible and stretchable electronics to soft robots and energy generators
Imagine an electronic integrated circuit lighter than a feather or an autumn leaf, floating through air when falling down. Such circuits are practically unbreakable and imperceptible, and may be intimately integrated in our daily life. Such circuits are possible by employing soft materials, which also form the base of soft robots and energy harvesters from renewable sources.

**OLIVIER DHEZ**
R&D project manager, ISORG, Grenoble, France
olivier.dhez@isorg.fr | www.isorg.fr

Organic printed optical sensor: applications and usage
ISORG is producing organic printed optical sensor. We will show the possible application and capabilities of this type of device.

**OLEG FEYGENSON**
Senior Principle and Chief Researcher, Algorithm Technology Research Centre (Subsidiary of GEN3 Partner, Inc), Saint Petersburg, Russia
oleg.feygenson@gen3.com | www.gen3partners.com

From invention to innovation – applying TRIZ to capitalizing on technology
TRIZ is a well known systematic approach to analyze and solve complex engineering problems. This presentation will demonstrate how TRIZ can also be employed to identify new areas of application for Smart Plastics.

**STEFAN GENSER**
Project Manager, PolyIC GmbH & Co. KG, Fürth, Germany
stefan.genser@polyic.com | www.polyic.com

PolyTC® Solutions Based on Transparent and Conductive Films
Transparent conductive PolyTC® films enable a multitude of applications such as touch sensor, EMI shielding, transparent heating or electrode solutions. In many ways it is the ideal substitute for the current ITO technology.

**JUKKA HAST**
Research Professor, VTT Technical Research Centre of Finland, Oulu, Finland
jukka.hast@vtt.fi | www.vtt.fi, www.vttprintedintelligence.fi

New hybrid integration manufacturing technologies combing printed electronics and microelectronics towards new applications and 3D electronics
New manufacturing concepts combining different printing processes, hybrid integration and injection moulding are discussed. Application demonstrators combing printing, assembled microelectronics and 3D electronics will be presented.
Beyond Touchscreen

In recent years can observe a tendency towards virtualization in man machine interaction, often through touchscreens or even touchless interfaces. While this may seem a desirable improvement in some scenarios, it also leads to a reduction in physical interaction and haptic feedback. Tangible User Interfaces instead allow the seamless integration of digital information into our physical environment.

PyzoFlex™ – An all-printed sensor network for human-machine interfaces, dynamic pressure mapping and piezoelectric energy harvesting

PyzoFlex™ is an all-printed sensor technology composed of a matrix of capacitive sensor devices based on very robust ferroelectric polymers and printable electrode materials. It captivates with its high sensitivity, the fast reaction times, the unlimited scalability, the self-sufficient operation, the high lateral resolution and the excellent environmental stability. Applications range from human-machine interfaces over square meter piezoelectric sensor films to energy harvesting systems.

The LPKF-LDS Process: A reliable, fast and easy method to manufacture circuits on 3D substrates

A molded interconnect device (MID) is an injection-molded plastic part with integrated electronic circuits. This presentation will give an overview of the production process and the capabilities of our patented laser-direct-structuring (LDS) process. The LPKF-LDS process is one of the most used methods for the mass production of MIDs.

BARTHOLOMEAUS MUKESCHENBAUER

Researcher, Professor, Interface Culture Lab, University of Art, Linz, Austria

martin.kaltenbrunner@ufg.ac.at | http://interface.ufg.ac.at/

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LOCATION: ARS ELECTRONICA CENTER (AEC)
Since 1979, Ars Electronica has been investigating the consequences of the Digital Revolution — an upheaval that has morphed constantly over the years without the slightest diminishment of its dynamic power. Quite the contrary. A place just perfect for the 2nd international Smart Plastics Congress.

PROGRAM: 1ST CONGRESS-DAY
MONDAY, JUNE 10, 2013

15:00 - 17:00
Registration

16:00 - 17:00
Guided Tour Ars Electronica Center (optional)

Martin Bergsmann
CEO Hueck Folien GmbH, Speaker of Smart Plastics Upper Austria
Welcome to the 2nd Smart Plastics Congress

17:30 - 18:30
PANEL DISCUSSION
Hosted by Dietmar Mascher, Chief editor economic bureau OÖ Nachrichten

Mario Aiwasian
Alois Ferscha
Gerfried Stocker
Philipp Weissel

19:00 - 21:30
Congress Dinner
The CUBUS restaurant, located in the AEC upper floor will be an adequate location to get together

PROGRAM: 2ND CONGRESS-DAY
TUESDAY, JUNE 11, 2013

8:30 - 9:00
Registration

9:00 - 9:20
OPENING OF THE CONGRESS
Georg Steinbichler
Program Chair of Smart Plastics Congress
ENGEL Austria GmbH, Johannes Kepler University Linz

Ekkehard Redhammer
Honorary Consul of France
Welcome of the French participants, connected via live-stream

Jukka Hast
New hybrid integration manufacturing technologies combing printed electronics and microelectronics towards new applications and 3D electronics

Siegfried Bauer
Going soft: From ultraflexible and stretchable electronics to soft robots and energy generators

9:20 - 9:55
Coffee Break

11:00 - 11:35
Stefan Genser
PolyTC® Solutions Based on Transparent and Conductive Films

11:35 - 12:10
Martin Kaltenbrunner
Beyond Touchscreen

Lunch

13:20 - 13:55
Oleg Feygenson
From invention to innovation - applying TRIZ to capitalizing on technology

13:55 - 14:30
Norman Starke
Design Concepts for Future Vehicles. New Rules in Automotive Design through Material Oriented Integration of Functions

14:30 - 15:05
Barbara Stadlober
PyzoFlex™ – An all-printed sensor network for human-machine interfaces, dynamic pressure mapping and piezoelectric energy harvesting

15:05 - 16:05
Coffee Break

16:05 - 16:40
Olivier Dhez
Organic printed optical sensor: applications and usage

16:40 - 17:00
Robin Krüger
The LPKF-LDS Process: A reliable, fast and easy method to manufacture circuits on 3D-substrates

Georg Steinbichler
Summary and end of congress
Board of the Smart Plastics Initiative:

Speaker:
Martin Bergsmann
Hueck Folien GmbH

Vice Speaker:
Gerald Schöfer
Schöfer GmbH

Organisation

Congress language: English

Conference fees:

- June, 10-11, 2013 incl. evening reception ............................................................ 750 €
- Early booking discount until 17th of May ............................................................ 650 €
- Live streaming on congress day (June 11 only)
  incl. presentation download afterwards ............................................................. 200 €

For cluster members (AC, KC, MC, Cluster New Materials Bavaria) a discount of 10% will be given. For every additional person from the same company a 20% reduction will be given.

Fees excl. 20% VAT

The respective conference fees include evening reception on the 1st day, coffee and lunch breaks and presentation download afterwards.

Terms of application:

Following written registration, a confirmation will be provided. Registration can be cancelled in writing up to 10 calendar days prior to the event free of charge. Otherwise, if the registered person fails to attend, another person may replace the registered attendee. The entire amount is to be paid after this date. Please transfer the full amount immediately upon receipt of our invoice after the event.

Exception: Access to live-stream link will be granted only upon receipt of payment prior to the event.

Registration:
Please register by enclosed fax template, e-mail to congress@smart-plastics.com or use our electronic registration form www.smart-plastics/registration

Accommodation:
For further information on accommodation in Linz please contact Linz City Tourist Board, Hauptplatz, 4020 Linz, tel. +43 732 7070 2009, fax: +43 732 7070 54 2009 tourist.info@linz.at, www.linz.at/tourismus

Congress Partner Hotels: Booking Code „Smart Plastics Congress“

Spitz Hotel
Fiedlerstrasse 6, A-4040 Linz
Tel.: +43 732 733 733
reservation@spitzhotel.at
www.spitzhotel.at

Landgraf Hotel & Loft
Hauptstrasse 12, A-4040 Linz
Tel.: +43 732 708 712
info@hotellandgraf.com
www.hotellandgraf.com

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