

CONFERENCE DATES

PRINTED ELECTRONICS EUROPE 2006

19-21 April 2006
Churchill College, Cambridge

Details

**Quote PEE06 for 20% discount
off registration price**

SMART MATERIALS SYMPOSIUM

49th Annual SVC Technical
Conference

22-27 April 2006

Marriott Wardman Park Hotel
Washington DC

Details

MEMS SENSORS & ACTUATORS

27-28 April 2006

Marriott Wardman Park Hotel,
Washington DC

Details

SMART COATINGS V

15-16 May 2006

Berlin, Germany

Details

FERROELECTRICS UK 2006

23-25 May 2006

University of Birmingham

Details

SMART COMPOSITES WORKSHOP

25 May 2006

IoM3, London

Details

NEWSPAPER GETS ELECTRIC

Imagine a newspaper that only displays the latest headlines, or selects only the adverts you find interesting!

This technology could be here sooner than you think.

For a three month trial period, De Tijd, a Belgian newspaper, is to publish its daily edition on electronic paper. Those taking part in the trial will be given an electronic paper reader not much bigger than a normal tabloid and will be able to download a new version of De Tijd onto their device daily. The memory capacity of the reader allows the user to store one month of newspapers and 30 books.



The electronic paper was developed by E-Ink, a commercial spin-off from the Massachusetts Institute of Technology (MIT). It uses electronically charged microcapsules, suspended in a liquid medium, to display black and white images on screen.

In the future it may even be possible to keep headlines regularly updated and also view moving images.

STRUCTURES NEWS

adidas introduces the World's First Intelligent Basketball Shoe

The shoe, called adidas_1 Basketball features award winning technology that is revolutionising the sporting goods industry. *Details.*

Intelligent Carpets as Navigation System for Robots

Vorwerk is presenting the first carpet containing intergated RFID technology for the intelligent navigation of service robots. *Details.*

US and Canadian Skiers get Smart Armour

A futuristic flexible material that instantly hardens into armour upon impact will protect US and Canadian skiers from injury on the slalom runs. *Details.*

Smart Beer Mat orders Refills

A beer mat that knows when a glass is nearly empty and automatically asks for a refill has been created by thirsty researchers in Germany. *Details.*

'Smart Lights' Illuminate Dark Corners

By using electronics to create 'smart' headlights, Ford Motor Co. engineers have found a way to illuminate the road ahead. *Details.*



Nanotechnology Devices and Sensors to Improve Food Safety

A new European project aims to develop portable devices to detect toxins, pathogens and chemicals in foodstuffs on the spot. *Details.*

New Sensor to help guarantee Freshness

Grocers, florists and even pharmacists may soon have a better way to monitor the quality of products from suppliers. *Details.*

MIT makes move towards Vehicles that Morph

MIT engineers report to have found a new way for structures to morph from one shape to another. *Details.*

3rd INTERNATIONAL WORKSHOP in ADVANCED SMART MATERIALS & SMART STRUCTURES TECHNOLOGY ANCRiSST 2006

29-30 May 2006
Embassy Suites Hotel, Lake Tahoe, USA

Details

ACTUATOR 2006

14-16 June 2006
Bremen, Germany

Details

IMPLANTS 2006

2nd International Orthopaedic Implants & Biomaterials Conference

21-22 June 2006

Paris

Details

SMART LABEL SUMMIT AMERICAS

27-28 June 2006

Miami, USA

Details

3rd EUROPEAN WORKSHOP STRUCTURAL HEALTH MONITORING

5-7 July 2006

Granada, Spain

Details

ADAPTIVE STRUCTURES

10-12 July 2006

Burwalls Conference Centre
University of Bristol, UK

Details

4th WORLD CONFERENCE on STRUCTURAL CONTROL and MONITORING

11-13 July 2006

San Diego, California

Details

UK Firm has reference design for Fabric Keyboard

Eleksen, the UK firm developing smart fabrics, is licensing a reference design for its fabric-based keyboard. **Details.**

Chemists work on Plastic Promise

A new plastic that could rival silicon as the material of choice for some electronic devices has been developed. The invention could eventually slash the cost of flat panel screens and bring electronic paper into common use. **Details.**



Indicators are smart to add Monitoring Functions

New smart indicators are intelligent devices that operate like standard neon indicators, but with added functionality. **Details.**

Multi-axis sensors aid Automotive Industry

Development of smart sensing based on novel manufacturing technologies has lowered prices while bringing new levels of intelligence and control to a wide range of applications. **Details.**

Engineering set for Smart Revolution

In a few years from now, the structures in your town will be made from concrete that can bend, the bridges will alert authorities when maintenance is needed, and buildings will tell their occupants whether it is safe to re-enter after an earthquake. **Details.**

Methanol-powered Artificial Muscles start to flex

Methanol-powered artificial muscles have been created by researchers aiming to create battery-free robotic limbs and prosthetics. **Details.**

Smart Concrete could improve Levees

Material's sensing ability makes it useful for homeland security. **Details.**



Intelligent Plastics change shape with Light

An MIT engineer and his German colleagues have created the first plastics that can be deformed and temporarily fixed into shape by light. **Details.**

EU Smart Construction Materials to Absorb Pollution

Innovative construction materials that can absorb air pollution are being tested and developed. **Details.**

Smart Gels finding New Medical Applications

Smart gels are now poised to become a useful new material for medical device applications. **Details.**

Electronic Nose could spell end of Landfill Pongs

Scientists at the University of Manchester have invented a new device which remotely monitors bad odours. **Details.**

Ferroelectric Material reveals Unexpected, Intriguing Behaviour

Electronic devices could benefit from new ways of using relaxor ferroelectric materials. **Details.**

Clever Car keeps an eye on Stray Pedestrians

A prototype vehicle capable of spotting pedestrians who stray into the road has been built by Volkswagen and other companies. **Details.**

DNA-Wrapped Carbon Nanotubes could target Specific DNA Sequences

The tiny tubes could act as sensors within cells to detect where molecules or drugs go when they are introduced to a cell. **Details.**

New CardioMEMS Device helps Aneurysm Patients

Implantable wireless pressure sensor is based on Georgia Tech innovation. **Details.**

SMART LABEL SUMMIT EUROPE

15-16 November 2006
Amsterdam, The Netherlands
[Details](#)

SMART MATERIALS & PACKAGING WORKSHOP

14 July
Carlton House Terrace, London
[Details](#)

NEW TECHNOLOGIES & SMART TEXTILES FOR INDUSTRY & FASHION

11-12 October 2006
London
[Details](#)

Printed Electronics Europe 06

19-21 April 2006
Churchill College,
Cambridge

The fourth IDTechEx event on Printed Electronics covers the latest technologies and applications of printed, flexible and organic electronics. Printing transistors, displays, sensors, power and other components is now possible: the next stage is integrating and using this new electronics toolkit. Learn all about the technologies, applications and opportunities at this unique event.

For a 20% discount on the registration fee, quote PEE06.

Further details on the event can be found [HERE](#).

Welding Helmets feature Smart Technology

New innovative welding helmets said to set the benchmark for all similar welding PPE. [Details](#).

Fake Muscles work like the Real Thing

A new breed of 'fuel-cell' artificial muscles are being developed where by a chemical fuel such as hydrogen or methanol are circulated through the system. [Details](#).

Locusts may provide Solution to Minute Microphones

Studying the ear drum of a locust could lead to the development of minute microphones which could be used for sensors that could detect nano-sounds. [Details](#).

SURFACES NEWS

Self-cleaning Bathroom on the Way

Scientists in Australia have developed an environmentally friendly coating containing special nanoparticles that could do the job of cleaning and disinfecting for us. [Details](#).

Red Hot Lids

Smart Lid Systems in Sydney has commercialised a colour-changing, single-use coffee cup lid. [Details](#).

Active Smart Coatings System for Military Vehicles

The U.S. Army are developing smart coatings for military vehicles that will self repair, alert logistics staff when requiring more extensive repair and resist corrosion. [Details](#).

'Smart' Coating to deliver Drugs

US scientists have developed a smart coating to deliver drugs precisely when and where they are needed in the body. [Details](#).

Electrochromics: Finally a Technology for Large Scale Applications?

It seems the time has come for large-scale applications of electrochromics in buildings, automobiles and elsewhere. [Details](#).

Airline Special Flight Labels

British Airways has created a SmartLabel monitoring system for tracking chilled modules of perishable prepared foods during flight and handling. [Details](#).

DuPont 'Smart' Materials

Since the invention of Neoprene synthetic rubber and nylon in the 1930s, DuPont has led the way in developing innovative materials/fibers/textiles. [Details](#).

Smart Clothes can improve Occupational Safety

Smart clothes design offers new material technology applications to make work apparel safer. [Details](#).

This Suit is made for Walking (on Mars)

Researchers at MIT are combining and old idea with technology to develop the BioSuit, a form-fitting second skin. [Details](#).

Best Dressed Companies wearing 'Smart Fabrics'

Several companies have separately developed thin conductive materials that manufacturers can sew into clothing and other consumable products to house electronic controls for devices. [Details](#).

Smart Screens sample DNA

An intelligent liquid crystal display which could bring mobile DNA fingerprinting a step closer has been developed by scientists. [Details](#).

Scientists confirm role of Nano-hairs in self-cleaning Lotus Leaf

Studying the effect of nano-hairs, the same self-cleaning mechanism that the leaf of a water lily called the lotus uses, could provide inspiration for future self-cleaning surfaces. [Details](#).



PATENT WATCH!

ELECTRONIC ELONGATION SENSING ROPE

The present invention relates to systems and methods for measuring elongation or curvature experienced globally or locally by an elongate fibrous tension member.

Full details of the patent application can be found by clicking [HERE](#)

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INSTITUTE MEMBERS - you are able to update your contact details online and set up your personal interests profile by visiting the new members' area [HERE](#)

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Lotus leaves provides solution for Paint

Water-repellant leaves help develop a paint called Lotusan.

[Details.](#)

New Textiles tap Polymer Science to trap and kill Toxins

A new fabric is developed for military and medical applications that can kill bacteria, block toxins and breathe to allow moisture escape. [Details.](#)

Space Suit Technology can protect Workers from Heatstroke

Three technologies are used and include a 3D textile, a cooling system and a water binding polymer. [Details.](#)

'Nano Skins' show Promise as Flexible Electronic Devices

Flexible, conductive 'nano skins' have been developed with applications such as electronic paper and sensors for detecting biological and chemical agents. [Details.](#)

Thin Oxide Films could lead to new type of Refrigeration

Scientists have found the films made from the mineral perovskite, which cool when an applied electric field is removed, are 100 times more effective than similar materials. [Details.](#)

Smart Lubricant saves Engine Oil

A new smart lubricant that forms a protective film when it meets two surfaces rubbing together means engines need less oil. [Details.](#)

Self Healing Spacecraft Skin is being developed at Bristol University

A material that could enable spacecraft to automatically heal punctures and leaks is being tested in simulated space conditions on Earth. [Details.](#)

Smart Glasses switch focus in an Instant

Glasses that change from 'long distance' to 'reading' mode could prove a revelation for many wearers. [Details.](#)

REPORTS

American Research Consultants (BCC) have published 'Smart Materials - A Technical and Market Assessment'. They describe the current market as estimated at £8bn, forecast to grow to over £12bn by 2010. [Details.](#)

Smart Green Materials set for Major Growth: Survey. BCC suggests the global market for smart materials is estimated to rise at an AAGR of 8.6 percent. [Details.](#)

Abstract for a web-based 'Structural Health Monitoring of an FRP composite bridge' article is available. Full text also available for purchase. [Details.](#)

This month's papers from the smart materials and structures journal are free for 30 days as a service to the authors. Up and coming papers to be published in the next issue can also be viewed. [Details.](#)

SMART.mat is a DTI funded project and is part of the Materials Knowledge Transfer Network (KTN) concentrating on 'smart' technology. SMART.mat is a partnership of QinetiQ, NAMTEC and the Institute of Materials, Minerals and Mining.

[Click Here to visit the Materials KTN Website](#)

The next issue of the SMART.mat newsletter will be distributed in July 2006.

