

3rd European
conference

Smart and Intelligent Packaging 2006



**Wednesday 29
and Thursday 30
March 2006**
Scandic Ariadne Hotel,
Stockholm, Sweden

Intelligent packaging applications across the industry
Two day Pira International conference



**With presentations from
leading companies:**

- Alto Plastics
- Ball Packaging Europe
- Bang & Olufsen Medicom
- Cranfield University
- Cypak
- DataLase
- Hot Pack
- IBM
- IPIFINI
- Luxcel Biosciences
- Pira International
- Schreiner ProSecure
- Sensible Solutions
- The Aroma Company
- Timestrip
- TNO
- Vitsab
- Webb Scarlett deVlam
- Xink

Including presentations from:



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Don't forget
the half day
pre-conference
workshop taking
place on 28 March



Smart and Intelligent

In a sea of eye-catching packaging, how can you make your's stand out?

It's an on-going challenge for businesses to ensure their product shouts 'buy-me!' to the customer from the shelf, but what if it actually could? By incorporating smart devices, packaging can track delivery from factory to shelf, shout out to the customer and even self heat or chill at the touch of a button. The interactive technology is here, we've heard how to use it, but it's time to start making that change and start really putting the ideas into reality.

Today's consumers require more from packaging than ever before. Intelligent and smart packaging innovations are allowing brand owners and converters of a wide range of products to communicate with the consumer on a whole new level. Giving information on temperature, freshness and shelf life is just the tip of the iceberg for this rapidly expanding technology. Attend this conference to find out what the technology is, what it can do and who's implementing it right now.

Retailer mandates are driving development within this dynamic marketplace, increasing the movement towards smart and intelligent technology. Forget the blue skies, today's packagers, brand owners and retailers need to find out what is happening now in order to take advantage of this fast moving technological development.

Get your technology update

Pira's annual **Smart and Intelligent Packaging** conference brings together the major industry leaders and experts. You'll get a taste of their real life experiences and understand how their smart technology implementations are working in practise – the successes and the failures

You'll find out where the opportunities lie, which technologies will prove viable and which applications will notably improve your competitive edge. This is your chance to get up-to-date quickly with all the know-how you need. Don't get left behind!

You'll discover the major new technological advances in areas including:

- **Diagnostic, active and speaking packaging**
- **Self-heating and cooling containers**
- **Improved drug delivery and recording of use**
- **Dramatic new smart packaging technologies**

How will you benefit from attending?

This is an unrivalled opportunity to meet potential partners, customers and suppliers who can help you succeed in this evolving marketplace.

- **Brand owners and manufacturers of consumer packaged goods (CPG)** – in thriving industries such as food and beverages, pharmaceuticals, cosmetics, clothing, luxury goods, toys and electronics, this is the perfect opportunity to keep abreast of the latest technological possibilities and learn from other's experiences
- **Packaging converters** – discover what you need to do to capitalise on this market development and launch viable products
- **Retailers and supply chain partners** – gain an insight into the whole packaging supply chain and find out how it's being transformed through intelligent packaging. Meet face to face with the market leaders and form the right partnerships to ensure rapid take up
- **Suppliers and manufacturers of smart and intelligent packaging and technology developers** – take advantage of this unique benchmarking opportunity and discover what your potential clients want

6

reasons to attend the conference

- **Ground-breaking technology** – get up to date with the very latest developments in intelligent packaging and hear new industry perspectives and insights
- **Learn what intelligent technologies can do for you** – find out how to use smart and intelligent technologies to take your packaging to the next level
- **Understand intelligent innovations** – from diagnostic to active, from self-cooling to self-heating innovations, find out how to apply these revolutionary technologies in practice
- **Hear case studies from real applications** – discover how end users are making smart technologies a commercial reality
- **Network building opportunities** – meet industry leaders from the entire packaging supply chain and kick start your innovative packaging future
- **Beyond the blue skies** – get concrete examples to help you implement this technology today!

Your event organiser

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 opportunities

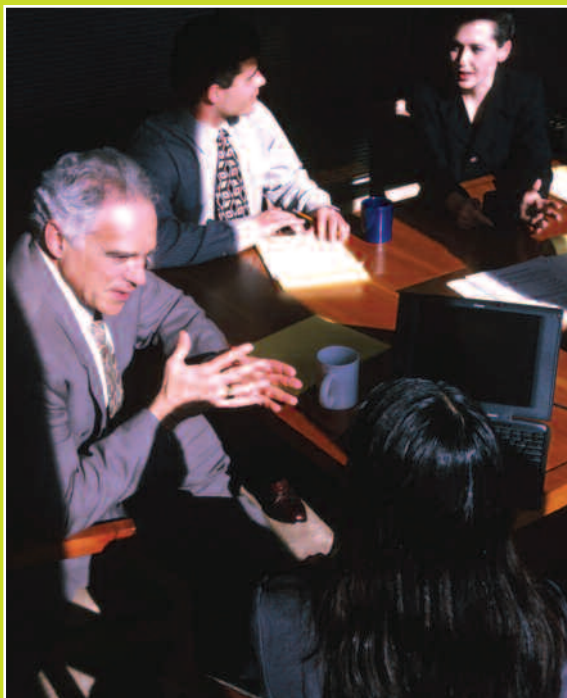
If your company supplies services and technology to the smart and intelligent packaging community, don't miss this opportunity to reach your audience by taking advantage of the limited number of exhibition and sponsorship opportunities available. Sponsorship of the conference will help you realise your marketing objectives and strengthen your company's position as a leading provider in these industries. For more details on our sponsorship and exhibiting opportunities, please contact Caroline Potapa on +44 (0)1372 802101, carolinep@pira.co.uk

gent Packaging

Half day pre-conference workshop

Tuesday 28 March 2006, 13.00 – 17.00

The future of smart and intelligent packaging



Using packaging that differentiates your product is crucial to stay competitive in this consumer driven marketplace. In the past packaging has simply communicated the basic information about the product, but what if the packaging could become a part of the product itself? This workshop investigates the essential ingredients needed to find the best solution for your business needs.

You'll find out about:

- **The world of smart packaging:** why packaging must get smarter
- **Smart packaging today:** how can you make your packaging smarter?
- **Emerging smart packaging technologies:** future opportunities for brands
- **The future of packaging:** where might smart and intelligent packaging be tomorrow?

Our course leader Dr Paul Butler is a materials science specialist with interests and experience spanning smart materials, smart packaging, RFID, printed electronics and nanotechnology. Currently working as a consultant to the packaging industry, specialising in the consumer aspects of packaging innovation and smart packaging, he is also an academic visitor in the Department of Materials at the University of Oxford. He's also used his industry knowledge to write two books on smart packaging entitled, **Smart Packaging** and **Consumer Smart Packaging**.

The future of smart and intelligent packaging will specifically look at non RFID smart packaging, identifying the struggles related to today's packaging, and expanding upon the variety of reasons in which packaging needs to change.

Topics covered include:

- Social and demographic changes
- Bioterrorism and counterfeiting
- Track and trace and error prevention
- Shelf impact and brand: the many uses of smart and intelligent packaging
- Emerging technologies in nanotechnology, self-cleaning surfaces, security devices, biometrics
- The nature of printed electronics
- Case studies exploring the food, beverage, pharmaceutical and house-hold product markets
- Looking ahead to 2010: investigating is the commercial edge

Wednesday 29 March 2006

08.15 Registration and refreshments

09.00 Opening remarks from the chair
David McGowan, BACARDI GLOBAL MANUFACTURING, Packaging Development Europe & Asia, Switzerland

09.10 **Smart and Intelligent packaging of tomorrow**

- A glimpse of the future: what will smart and intelligent packaging mean?
- Discover the consumer and brand owner future possibilities
- Overview of the current and future technologies
- Understanding the supply chain benefits
- Capitalising on trends and predictions

Ann Stirling Roberts, Director, PIRA INTERNATIONAL, UK

09.45 **Current and future European regulations for smart and intelligent packaging**

- European legislation for food contact materials
- European legislation for smart and intelligent packaging: future regulatory directions
- Compliance testing of smart and intelligent packaging
- Future regulatory directions

Rob Veraart, Project Manager Legislative Aspects of Food Contact Materials, TNO, Netherlands

10.20 **Effective and unique intelligent packaging**

- Designing intelligent packaging targeting user needs
- Case study: reporting the key results from a pilot study of a patient compliance device
- Experiences gained from marketed packaging products

Hans J Jensen, Manager New Business, BANG & OLUFSEN MEDICOM, Denmark

10.55 **Discussing smart and intelligent packaging in Europe vs the world**

- Who is active in smart and intelligent packaging?
- Why are some countries more active than others?
- A glimpse of the future

The panel will be hosted by a selection of the days speakers

11.30 Morning refreshments

Enhancing consumer experience by communicating brand value

11.45 **Using smart packaging technology to create enhanced consumer and brand relationships**

- How brands can develop as a friend or mentor: societal trends and consumer needs
- The implications for design and development
- Technology as an enabler to cement product/consumer relationships
- The opportunities for smart and intelligent packaging

Felix Scarlett, Partner, WEBB SCARLETT DEVLAM, UK

12.20 **Branding, smart packaging and the senses**

- Why the current marketing model is broken!
- Why marketers must appeal to the senses at POP and on pack
- Why the sense of smell is so powerful
- A look at existing and emerging technologies for generating sensory engagement with consumers in store and on pack
- Some examples of leading edge technologies already being used by brands

Simon Harrop, Founder and Chief Executive, THE AROMA COMPANY, UK

Thursday 30 March 2006

12.55 Pressure activated devices with added functional value

- Evaluating promotional vs functional added value
- Examining manual vs automatic activation
- Pressure activation
- Understanding foam generation
- Mixing of food ingredients into beverages
- Reviewing the market applications

Dr Bernd Ullmann, Manager New Product Development, BALL PACKAGING EUROPE GMBH, Germany

13.30 Lunch will be served for all speakers and delegates

Sensors in smart and intelligent packaging

14.50 Smart packaging materials and sensing systems for non-destructive monitoring of residual oxygen in packaged products

- Quality control and packaging
- Fluorescence-based sensing of oxygen and smart packaging materials
- Phase-fluorometric oxygen sensor systems for packaging applications
- Non-destructive assessment of packaged foods and pharmaceuticals: medium scale industrial trials, optimisation and validation
- Rapid microbial testing of foods by oxygen sensing and respirometry (destructive)

Dr. Richard Fernandes, CEO, LUXCEL BIOSCIENCE, Republic of Ireland

15.25 Printed action activated sensors: functionality and applications

- Discover the meaning of action activated functionality
- Utilising moisture surveillance applications as the smart diaper or package water watch
- Employing temperature surveillance using action activated functionality
- Applications as a smart power source together with passive secondary printed sensors

Hans-Erik Nilsson, Head of Research and Development, SENSIBLE SOLUTIONS, Sweden

16.00 Afternoon refreshments

16.20 Conductive polymer films as sensors for food spoilage and also medical device packaging

- The development of sensors for meat or dairy product spoilage
- Integration of the sensors into packaging for food
- Evaluating possible medical applications

Seamus Higson, Professor, CRANFIELD UNIVERSITY, UK

16.55 Vitsab smart labels monitoring catered food served onboard British Airways flights

- Smart label application to the chill chain of perishable foods.
- Smart label technology basic principles
- Shelf life and/or food safety
- Application in packaging

Peter Ronnow, Principal Scientist, VITSAB, Sweden

17.30 Packaging with Integrated Time Strips (ITSs)

- Understanding the relevance of time strips
- How does time strip work?
- Measuring the perceived risks of products exceeding their consumable time
- Case study of the range of different applications

Reuben Isbitsky, Managing Director, TIMESTRIP, UK

18.05 Closing remarks from the chair

18.15 Drinks reception

All speakers and delegates are invited to a relaxed and informal drinks reception, providing an exclusive opportunity to network and discuss the day's proceedings.

08.15 Registration and refreshments

09:00 Opening remarks from the chair
Ann Stirling Roberts, Director, PIRA INTERNATIONAL, UK

New technology innovations in smart and intelligent packaging

09.10 Can packaging technology expand the market for self heating meals?

- History of self heating packaging
- Introduction of Hot Pack Self Heating Nutritious Meals®
- The current and possible market for self-heating meals
- Does its packaging expand the number of users of Hot Pack self-heating meals?
- How to commercialise the product

Philip Goding, Founder/Director, HOT PACK SELF HEATING MEALS, UK

09.45 Effective brand protection with label solutions

- Benefits of security labeling: anti-counterfeiting, tamper-evidence, tracking and tracing
- Integrated technologies: overt, covert and forensic features: how to make the right choice
- Case study 1: anti-counterfeiting for building-materials
- Case study 2: tamper evidence in the pharmaceutical industry
- Case study 3: tracking and tracing of consumer electronics

Richard Stooss, Business Development Manager, SCHREINER PROSECURE, Germany

10.20 Secure laser marking using novel colour change ink technology

- Tamperproof encapsulated imaging
- Digital holographs
- Digital colour laser imaging potential
- Handheld lasers and 'laser pens'

Andrew Jackson, Applications Marketing Manager, Datalase, UK

10.55 Morning refreshments

11.25 Programmable liquid containers: customer selectable variations at the point of use

- Using buttons to releases additives (flavours, dyes, frequencies, drugs) into the container
- Exploring the possibility of one container, many varieties
- Understanding consumer attraction
- Robust patent application
- Defining the applicable markets

Dr Tod Woolf, Founder and President, IPFINI, US

12.00 Innovative packaging solutions from down under

- Research and development based on consumer need
- Innovation and functionality
- Breakthrough designing
- Smart closure technology on a global platform

Steve Davis, Business Development Manager, ALTO PLASTICS, New Zealand

12.35 Lunch will be served for all speakers and delegates

The newest developments in RFIDs

13.55 RFID tagging at item-level: enabling the consumer driven supply chain

- An overview of RFID market current status
- Examining the scenarios and industries where RFID can be applied (with positive ROI) at item-level
- Examples of companies using RFID at item-level

Sebastian A. Taylor, RFID Solution Leader North/East Europe, IBM, Norway

14.30 Grasping computerised packaging

- New technology combining RFID, microprocessors, clocks and sensors
- Case studies in the pharmaceutical, diagnostic and courier industry
- Authentication solutions to protect product and data integrity

Stina Ehrensvar, Founder and VP Marketing, CYPACK, Sweden

15.05 Intelligent and active packaging (IAP)

- State of the technology: more than smart packaging
- Overview of smart sensor technology implementations
- Role of RFID in intelligent packaging
- Commercial use of intelligent blisters for pharmaceuticals
- Other intelligent and active packaging implementations

Cost and market forecasts 2006 to 2015 for IAP
Micheal Peterson, Chief Operating Officer, XINK, US

15.40 Closing remarks from the chair and close of conference

PLUS – Free CD!

A CD-Rom of all presentations will be sent free of charge after the conference. You'll get the maximum benefit from the proceedings by having the information permanently available back at the office, all at no additional cost!

What people say about our packaging conferences

"A very interesting conference, I learnt a lot more about RFID"

JTI, Switzerland
(Smart and Intelligent Packaging 2004)

"Very enthusiastic presentations"

Alpro, Netherlands
(Future of Packaging 2005)

"Dealt with a wide range of interesting and relevant topics"

Smurfit Cartons, US
(Future of Packaging 2005)

"Very useful, good contacts made; good balance of content"

Crown Packaging UK
(Intelligent and Smart Packaging 2005)

3 for 2 on all books and journals ordered online

Pira publications in the spot-light



active & intelligent pack news

The latest news and updates delivered direct to your computer every 2 weeks

5 reasons why you should be reading **active and intelligent pack news**:

- **New products** – global coverage of all new active and intelligent packaging concepts and devices, new materials and technical developments. Plus how devices perform in the market place.
- **New pack launches** – every time a brand owner, retailer or packaging developer decides to incorporate active or intelligent technology in their packaging, you'll read about it first here.
- **Supplier intelligence** – insider info on the technology developers' and vendors' sales strategies. Read about what they are launching and where, how their products are performing, who they are supplying and which markets are most profitable.
- **Market opportunities** – Exclusive reports on consumer and technology trends, growth rates, sector values and opportunities for active and intelligent packaging.
- **New legislation** – details of new packaging legislation with an impact on active and intelligent packaging.

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Low-cost Smart Packaging in Pharmaceuticals and Cosmetics

Author: William Llewellyn

This study evaluates the new raft of low-cost enabling technologies, including printing of electronics, profiles new products being launched or developed, and gives you vital updates on hot new applications. Also featuring case studies, showcasing successful implementation in the cosmetics and pharmaceuticals industries, this is your essential guide to implementing these new technologies.

Contents include:

Executive summary, introduction, intelligent and smart packaging technologies, applications, company profiles, case studies, regulations and legislation, future developments and uses

Published December 2004 £295/€429/\$529



Low-cost Smart Packaging in Food and Drink

Author: Ashley Grange

This study gives you an overview of intelligent packaging technologies revolutionising the food and drink supply chain, including RFID, electromagnets, electronic chemical technologies and much more. You'll read about what's driving the technology and potential applications. Also included are a range of in-depth examples of successful commercial implementation of intelligent packaging technology in the food and drinks industry, to help you get to grips with what these technologies can do for your business.

Contents include:

Executive summary, introduction, development drivers, customer attitudes, adding value, minimising costs, intelligent packaging technologies, concept development and product launches, case studies, outlook

Published December 2004 £295/€429/\$529

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Conference registration form

Smart and Intelligent Packaging

Two day Pira International conference

Wednesday 29 and Thursday 30 March 2006

Scandic Ariadne Hotel, Stockholm, Sweden

The Future of Smart and Intelligent Packaging

Pre-conference half day workshop - Tuesday 28 March 2006, afternoon

Step 1 Your details

Title:.....First Name:.....Surname:.....

Organisation:.....Position:.....

Company business:.....

Address:.....

.....

.....Postcode:.....

Telephone:.....Fax:.....

Email:.....

Purchase Order No:.....

Step 2 Event options and fees

Conference fee:	£999 <input type="checkbox"/>	€1456 <input type="checkbox"/>	\$1769 <input type="checkbox"/>
Workshop fee:	£399 <input type="checkbox"/>	€727 <input type="checkbox"/>	\$883 <input type="checkbox"/>
Workshop + conference fee:	£1299 <input type="checkbox"/>	€1894 <input type="checkbox"/>	\$2301 <input type="checkbox"/>

Pira members save 10% - enter your 9 digit membership number here:.....

VAT at the prevailing rate will be charged as applicable.

Step 3 Payment method

Cheque/banker's draft (made payable to Pira International) Invoice my company

Charge my credit card: Visa MasterCard American Express

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Step 4 How to book

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Fax this form back to: **+44 (0)1372 802243**

By phone on: **+44 (0)1372 802101**

Online at: **www.piranet.com**

Conference information



Venue details:

Situated directly on the waterfront, the modern Scandic Ariadne Hotel is just 4km from the picturesque Stockholm city centre. With great conference and restaurant facilities, the hotel also provides great communication resources and plenty of parking places. For further information please visit: www.scandichotels.com.

Getting there:

Scandic Ariadne is located at the Värta harbour docks in Stockholm, next to the Silja Line and Tallink ferry terminal. The hotel is situated 50km from the airport and just a short distance from the city centre, where you can find a number of great city and intercity links. A detailed map and instructions will be sent to the delegates approximately three weeks before the event.

Accommodation:

Delegates are responsible for booking their own travel and accommodation. A limited number of rooms have been reserved for conference delegates. Pira's booking agents Origin will be happy to help and organise special rates at a range of local hotels. Whenever possible accommodation should be reserved by **1 March 2006** as rooms cannot be guaranteed and rates are subject to change after this date. To book your accommodation or travel please contact:

T: +44 (0)1506 412 214

E: info@originevents.co.uk

Please quote "Pira International Conference" as a reference.

Conference fees

The conference fee includes entry to the conference sessions and the exhibition, full documentation, lunch and refreshments. However, fees do not include delegate travel and accommodation. All credit card orders are processed at that day's £/€/€/\$ exchange rate at the time the transaction goes through.

Cancellations

Cancellations will be accepted and fees will be refunded (less 20% handling charge) only if made in writing and received ten working days before the event. Bookings cannot be cancelled or fees refunded thereafter. Substitutions may be made at any time, please notify Jenny Fehrenbach.

Note

Pira International does not accept liability for any loss of or damage to the personal effects of delegates attending the conference. Pira reserves the right to cancel, defer or modify the event proceedings without prior notice.

Visas

Delegates requiring visas should request a visa invitation letter from Pira International at the time of registering for the event, ensuring sufficient time is left for applications to be completed. Delegates are then responsible for contacting the relevant/appropriate embassy themselves. Pira can do nothing further to assist in this process.

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