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3rd Annual Biodegradable Plastics in Packaging Applications

Two IntertechPira two day conferences plus two pre-conference workshops

Green Design for Packaging

Two IntertechPira events focusing on the latest trends and innovations for biodegradable plastic packaging and green design packaging



Biodegradable Plastics in Packaging Applications:
Tuesday 3 – Wednesday 4 July 2007
Green Design for Packaging:
Thursday 5 – Friday 6 July 2007
Hilton Munich Park Hotel, Munich, Germany

Including presentations from:

PLUS! Don't miss the pre-conference workshops on Monday 2 July 2007:

- **Workshop 1 – Recycled Plastics in Packaging Applications**
- **Workshop 2 – Exploring Non - packaging Markets for Bioplastics**

With key contributions from BioPlastics speakers:

- Amcor Flexibles
- Cadbury Schweppes
- CIBA Expert Services
- Clarifoil
- Coopbox Europe
- Eosta
- European Bioplastics
- Fost Plus
- Innovia Films
- Keele University
- Keller and Heckman LLP
- Kraft Foods Global
- Michigan State University
- Metabolix
- Natura Packaging
- NatureWorks
- Novamont
- PA Consulting Group
- Plantic Technologies
- PlasticsEurope
- Robins Packaging Consultants
- Symphony Environmental
- Vernique Biotech
- Viridor Waste Management

With key contributions from Green Design speakers:

- Alcan
- Alocoa Europe
- B+ Equipment
- European Plastics Converters (EuPC)
- Innovia Films
- IntertechPira
- Jones Knowles Ritchie Design Agency
- Kraft Foods Global
- Loughborough University
- Marks & Spencer
- Michelman Inc
- Nextek Limited
- STFI-Packforsk
- Stora Enso
- Sun Chemical
- The Waste and Resources Action Programme (WRAP)
- Webb Scarlett DeVlam

Media partners:

Supporting association:





7 reasons to attend

- Understand the **pivotal role of biodegradable plastics** in the environmentally friendly and sustainable packaging industry of the future
- Listen to leaders in the field and **gain insight into the latest research, latest technical advances and implementation strategies** for biodegradable plastics in packaging
- Hear exclusive case studies from leading brand owners, such as **Kraft Foods** and **Cadbury Schweppes** on their approach and future outlook on sustainability and renewable materials
- Learn how **going 'green' with biodegradable materials could maximise your profits** and differentiate your product
- Receive the latest data on **consumer perceptions** for sustainable products
- Explore new opportunities in **designing for the environment** that strengthen your customers brand loyalty
- Meet with key decision makers in the industry to **gain valuable market insight and develop integrated strategies to succeed**

3rd Annual Biodegradable Plastics in Packaging Applications

Now in its third year, **Biodegradable Plastics and Packaging Applications** will encapsulate the entire life cycle of biodegradable plastics, ensuring you understand the bigger picture, from production through to the waste stream. Real life case studies and presentations from key industry leaders will provide you with the tools to evaluate how to make the future market in biodegradable plastic packaging work for your business.

All the indicators suggest the price gap between traditional plastics and their biodegradable alternatives will continue to narrow. Sustainability is becoming a standard for the industry and consumers demand packaging that is as good for the environment as the product it's designed to protect. This presents an excellent opportunity for consumer product companies to differentiate themselves from fierce competition. The whole packaging supply chain can benefit by adding value to the pack through these novel materials. Now is the time to get up to speed with what future bioplastics have for your company – this conference is your tool to find out!

This is your opportunity to attend two conferences covering the hottest topics in the packaging industry - all in one week!

Green Design for Packaging

Green Design for Packaging is your chance to see how the leaders in multiple industries are incorporating green design into their packaging and process applications! With mounting consumer demand and strong media interest, green-friendly materials have the prime opportunity to make a visible impact on global markets. Failure to adapt to this new landscape could mean major loss of market share and customer loyalty. At this conference, you'll find out how to make green design part of your product life-cycle approach.

Join IntertechPira as retailers, brand owners, designers and the pack supply chain experts come together for a practical and solution-heavy conference on green design. You'll learn about the latest materials that are set to make a significant difference in sustainable packaging while better understanding the growing trends for green design. This is your chance to understand the enormous growing market for green-looking products and how to best capitalise on the latest innovations!

Biodegradable Plastics in Packaging Applications

Who should attend?

From material selection, conversion, technology, performance, functionality and the design and innovation process, **Biodegradable Plastics in Packaging Applications and Green Design in Packaging** will provide you with essential information and a unique opportunity to meet leading players and experts from throughout the packaging supply chain.

Brand owners and retailers:

- See how you can capitalise on how to maximise your profits and differentiate your products by 'going green'
- Gain valuable insight into the consumers and markets shaping the future of biodegradable materials and understand how to capitalise on this trend in your design process
- Learn how growing concerns about the future of the environment will affect consumer demands, industry standards and regulations
- Discover exciting new technologies and meet potential partners and suppliers at the forefront of renewable materials

Packaging converters:

- Profit from an in-depth review of the 'greener plastics' options available to establish what will best suit your needs
- Explore the potential of incorporating sustainability into your innovation process
- Find out how renewable materials can match the performance of traditional packaging materials
- Discover the latest technological advances enhancing biodegradable films and plastics through improved barrier properties, pack functionality and more

Suppliers of polymer resins, biodegradable polymers and all pack materials:

- Hear directly from the end users on how to integrate their needs into your research and development
- Assess market size, potential new applications and future forecasts
- Meet with existing and new customers and partners
- Identify key technological breakthroughs and understand how to leverage them

Your conference organiser

IntertechPira 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

This conference may be the best opportunity in 2007 to show your latest plastics and packaging technology, service or knowledge. To brand yourself among leaders, please contact Natalie King on +44 (0)1372 802164 or natalie.king@pira-international.com to discuss a tailored exhibition or sponsorship package to suit your budget and marketing agenda.

Tuesday 3 July 2007

07.30 Registration and refreshments

08.30 Opening remarks from the chair
Dr Harald Kaeb, Chairman, EUROPEAN BIOPLASTICS, Germany

Market overview: current trends and challenges for biodegradable plastic packaging

08.40 **Biodegradable and bio-based plastics: principles, concepts, standards and technology roadmap**

- What is a bioplastic and why and how are they sustainable and environmentally responsible?
- Exploring how to identify and measure bio-based content in bioplastics
- Assessing how to document and quantify the positive environmental attributes of bio-based plastics: life cycle assessment (LCA)
- Analysing biodegradable plastics: bio-based and biodegradable vs bio-based and durable
- Evaluating the need for biodegradable plastics to be completely biodegradable in a defined time frame in the selected disposal infrastructure (compostation) vs degradable or partially biodegradable
- How mere degradability or partial biodegradability causes irreparable harm to the environment

Dr Ramani Narayan, Professor of Chemical and Biochemical Engineering, MICHIGAN STATE UNIVERSITY, US

09.25 **Incorporating bio-based materials into food packaging**

- Understanding the US market for bio-based materials
- Meeting packaging functional requirements throughout the supply chain
- Opportunities through innovative design

Dr Paola Appendini, Senior Research Scientist, KRAFT FOODS GLOBAL, US

10.00 **Reviewing market developments in Europe for bioplastics**

- Exploring product novelties
- Understanding market trends, drivers and barriers
- Evaluating latest policies and their impact
- Future outlook for commercialising bioplastics for packaging applications

Dr Harald Kaeb, Chairman, EUROPEAN BIOPLASTICS, Germany

10.35 Morning refreshments

10.55 **Bioplastics in confectionary packaging: end user perspective**

- Performance requirements
- Biodegradability of plastics: renewability vs environmental performance
- Evaluating the potential of using biodegradable materials for bottles
- Main development needs

Douglas Hughes, Packaging Development Manager, CADBURY SCHWEPPE, UK

11.30 **Developments in bioplastic packaging for fresh foods**

- Raising material performance to achieve better shelf life for fresh produce
- Addressing moisture permeability
- Evaluating the potential of using starch based biopolymers for fresh food

Jon de Ruijter, Manager, EOSTA, Netherlands

12.05 **Using biodegradable materials in food packaging: food contact considerations**

- Understanding current food contact legislation in the EU
- Food contact compliance
- Future developments in EU food contact legislation
- Exploring FDA regulations and differences with EU

Rob Veraart, Scientist, KELLER AND HECKMAN, Belgium

12.40 Lunch will be served for all speakers and delegates

Bioplastics packaging: consumer perception

13.45 **Sustainability: enhancing and protecting your brand in a commercial environment**

- 'Sweet spots' for brands
- Sustainability as a competitive lever
- Understanding the link between economics and the environmental impact
- Increasing your chance of success in a commercial world

Ruan Jones, Managing Consultant, PA CONSULTING GROUP, UK

14.20 **Producing plastics from plants to give packaging a competitive edge**

- Assessing latest developments in market applications
- Using starch-based polymers in flexible and rigid packaging applications
- Extending the application portfolio: confectionary, baked foods, pharmaceuticals and cosmetics
- Lessons learnt: track record of working with packaging applications

Dr Frank Glatz, Innovation Manager, PLANTIC TECHNOLOGIES, Australia

14.55 **Compostable packaging through the retail chain: a case study based on Sainsbury's supermarkets**

- Biotechnology in textile processing
- Why make a move to compostable packaging?
- Compostability in the UK context
- Exploring materials employed
- Matching product protection needs with the right packaging choice

Andy Sweetman, Market Development Manager: Sustainable Technologies, INNOVIA FILMS, UK

15.30 Afternoon refreshments

15.50 **Compostable packaging: a logical choice for demanding customers?**

- Exploring what customers want from renewable materials
 - Addressing applications: fruit and vegetable packaging, carrier bags, waste bags and PLA trays
 - Manufacturing on existing machinery
 - Is compostable packaging a logical choice for demanding customers?
 - Future outlook for compostable packaging
- Patrick Gerritsen, Business Unit Manager, NATURA PACKAGING, Germany**

Biodegradable Plastics in Packaging Applications

Wednesday 4 July 2007

The complexity of end of life and waste management

16.25 End of life treatment of bioplastic packaging: the Belgian Green Dot initiative

- Addressing promotional use/misuse of the term biopackaging: does it mean biodegradable?
- Exploring consumer and political pressures: compostable vs renewable resources
- End of life treatment
- The point of view of European green dot organisations
- The Belgian green dot initiative: an R&D programme to gather scientific data
- Addressing the issue of litter

Gaëlle Janssens, Prevention and R&D Manager, FOST PLUS, Belgium

17.00 Managing bioplastics in the waste chain

- Exploring the role of waste management in supply chain design
- Understanding resource efficiency and economic drivers
- Technological shortcomings and possibilities
- Biodegradable vs compostable
- Role of composting industry in the future of biodegradables
- Assessing current role and future developments in recycling

Bill Griffiths, National Recycling Manager, VIRIDOR WASTE MANAGEMENT, UK

17.35 Life Cycle Analysis (LCA) of bioplastic materials: assessing the environmental impact of carrier bags and food trays

- Assessing drivers and current role of LCA of bioplastic pack materials
- Understanding the differences between sustainability and LCA
- Lessons learnt from two UK environment funded LCAs:
 - Retail chain carrier bags
 - Food trays
- Comparing biopolymer vs traditional options

Gary Parker, Sustainability Director, CIBA EXPERT SERVICES, UK

18.10 Closing remarks from the chair

18.20 Drinks reception

All speakers and delegates are invited to a relaxed and informal drinks reception to network and discuss the day's proceedings



NEW-

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08.00 Registration and refreshments

08.30 Opening remarks from the chair Dr Ramani Narayan, Professor of Chemical and Biochemical Engineering, MICHIGAN STATE UNIVERSITY, US

New material innovations: comparison of renewable materials

08.40 Advances in biodegradable and biomass-based plastics: what do bioplastics mean for conventional plastics?

- Economically beneficial use of renewable raw materials
 - The plastics road map
 - The importance of balanced information
- Dr Wolfgang Siebourg, Manager Consumer and Environmental Affairs, PLASTICSEUROPE, Belgium**

09.15 Exploring innovations and possibilities for PLA

- Analysing market drivers and future developments for PLA
 - Managing growth
 - Addressing feedstock concerns and options
 - End of life options
 - Exploring long term commercial viability
 - Evaluating new applications
- Mark Vergauwen, Regional Manager Europe, NATUREWORKS, Belgium**

09.50 Starch and vegetable oil based polymers for packaging applications

- Recent advances in starch and vegetable oils
 - Cutting edge developments in foams and technology advances for films
 - Addressing processing and conversion possibilities
 - Technical performances
- Stefano Facco, New Business Development Manager, NOVAMONT, Italy**

10.25 Morning refreshments

10.50 Manufacture, properties and uses of cellulose diacetate films

- Environmental aspects of the films
 - The advantage of a large and inexpensive natural supply base
 - Exploring end uses of products and applications
 - Future outlook for commercial scale manufacturing of biodegradable materials
- Kevin Parker, Technical Service Executive, CLARIFOIL, UK**

11.25 Oxo-biodegradable plastics: learning from nature

- The development of biodegradable hydrocarbon-based packaging from either fossil or biological resources
 - The scientific approach to greener packaging
 - Compliance with EU directives
- Michael Stephens, Technical Director, SYMPHONY ENVIRONMENTAL, UK**

12.00 Lunch will be served for all speakers and delegates

Working with bioplastics: process developments and technology advances

13.00 A converter's perspective on using biodegradable polymers

- Packaging applications: working with flexible and rigid pack materials
 - Using bioplastics for demanding applications
 - Challenges of working with PLA
- Peter Ettridge, Development Manager for Fresh Produce, AMCOR FLEXIBLES, UK**

13.35 Commercial scale manufacturing for biodegradable materials

- The challenges of reaching commercial scale
 - Sourcing of raw materials
 - Processing considerations
 - Future projects
- Daniel Gilliland, Director of Business Development, METABOLIX, US**

14.10 Afternoon refreshments

14.30 Foamed bioplastics for fresh meat packaging: achieving better barrier properties

- Bioplastics vs standard polymers in rigid packaging applications
 - Protective atmosphere packaging, prospective for biodegradable materials
 - Can bioplastics trays run on standard top sealing and wrapping packaging machines?
 - Exploring key issues
 - Lessons learnt from implementations at **Bodin** (French chicken meat packer) and **Iper** (Italian retailer)
- Cesare Vannini, Packaging System R&D, COOPBOX EUROPE, Italy**

15.05 Epoxy resins and plasticisers derived from plant sensors

- Issues with phthalate plasticisers and bis-phenol A resins
- Epoxy oils derived from the vernonia galamensis plant
- Use of vernonia oil for low VOC resins, binders, coating and plasticisers
- Economics of bio-based polymers and extenders

Adjunct Professor Edward Kosior, Director, VERNIQUE BIOTECH, UK and Professor Jim Howell, KEELE UNIVERSITY, UK

15.40 Closing remarks from the chair

15.50 End of conference

PLUS - Post-conference link to all presentations

On the day you'll receive a CD of presentations and an information pack. Soon after the conference you'll receive a link to the final presentations so you can get maximum benefit from having all the information available back at the office.

Workshop 1: Recycled Plastics in Packaging Applications

Half day pre-conference workshop
Monday 2 July 2007
8.30 – 12.00

This workshop will compliment your conference experience by examining recycled plastics technology and its potential for packaging applications as one of the alternative routes to greener plastics.

This is your unique opportunity to better understand how the process of recycling and reusing plastics works in practice and how it can be applied to your company. Recycled plastics can be your answer to meeting new industry requirements on the road to sustainability and this technology may ultimately help your company differentiate its products from the competition.

Agenda:

- **Market for recycled plastics:**
 - Current state of the market for recycled plastics
 - Legislation in place
 - Consumer understanding of the technology
- **Infrastructure in place for recycling and using recycled plastic:**
 - Recycled plastic materials
 - Technology behind recycled plastics
 - From recycling to reusing
- **Performance and processing of recycled plastics:**
 - Processing for recycled plastics
 - Markets for recycled plastics: is packaging one of them?
- **Comparison and contrast of traditional, recycled and biodegradable plastics with regards to technology, cost and performance**

Your workshop leader:

**Terry Robins, Managing Director,
ROBINS PACKAGING CONSULTANTS, UK**



Terry worked for Sainsbury's for over 30 years, initially as a food technologist. Terry became Technical Manager and Innovation Manager of Packaging for the whole of Sainsbury's. As of late, much of the development work encompassed environmental projects including the development of containers made of potato starch, the world's first biodegradable cellulose and trays manufactured from forest leaves that otherwise would have been burnt. During 2003, Terry started his own packaging consultancy and much of his work takes place in the introduction and development of bio packaging.

Workshop 2: New Markets for Bioplastics

Half day pre-conference workshop
Monday 2 July 2007
13.00 – 16.30

Never before have bioplastics been so high up the political, environmental and consumer agenda. Bioplastics have immense potential, beyond the remit of packaging. This workshop will teach you the principles and concepts of bioplastics, and their drivers. You'll discuss bio feedstocks and technology conversion platforms and how they can be applied to your business functions. You'll also review current and potential new bioresins as well as their performance properties and applications in consumer electronics, engineering, automotive and industrial sectors. This workshop is your unique opportunity to tap into this potential market and understand the bigger picture of bioplastics and how to benefit from their development.

Agenda:

- **Exploring drivers, demand and the potential for bioplastics in durable high value applications:**
 - Primer on bioplastics: what they are, how to identify and quantify bio content, how to document and report on the positive environmental profile, the opportunity to obtain carbon credits
- **Review and analysis of biofeedstocks in manufacturing bioplastics:**
 - Conversion technologies for producing bioplastic resins
 - Processing options for bioplastic resins: moulding (injection, compression), extrusion cast film, thermoforming, others
 - Performance properties and comparative analysis with existing fossil carbon based products
- **Examining the potential for bioplastics in consumer electronics applications**
- **Bioplastics in engineering applications: automotive, industrial**
- **Potential of bioplastics in carpets and home textiles**

Your workshop leader:

**Dr Ramani Narayan, Professor of Chemical and Biochemical Engineering,
MICHIGAN STATE
UNIVERSITY, US**



Ramani Narayan, is Professor of Chemical and Biochemical Engineering in the Department of Chemical Engineering and Materials Science at **Michigan State University**, US and was named a University Distinguished Faculty. He has 115 referenced publications in leading journals to his credit, 18 patents, edited three books and one expert dossier in the area of bio-based polymeric materials. His research encompasses design and engineering of sustainable, biobased products, biodegradable plastics and polymers, reactive extrusion polymerization and processing, studies in polymer biodegradation and composting, Life Cycle Assessment (LCA) protocols for assessing a product's environmental footprint and biofibre: reinforced composites. He has won several awards and is also a successful entrepreneur having been responsible for commercialising several technologies.

A unique opportunity to meet leading players and experts from throughout the packaging supply chain.



Green Design for Packaging

Thursday 5 July 2007

07.00 Registration and refreshments

07.50 Opening remarks from the chair:
Dr Tracy Bhamra, Reader in Sustainable Design and Research Coordinator, Department of Design and Technology, LOUGHBOROUGH UNIVERSITY, UK

Brand and design issues

08.00 **Design emphasis of promoting the look of green design**

- Putting the spotlight on the value of your green designed product
- Cross-industry collaboration
- Using colour and material to emphasise your brand image
- Proper shelf-impact techniques

Charlotte Raphael, Senior Design Manager, Packaging, MARKS & SPENCER, UK

08.35 **Communicating your brand through sustainable packaging**

- Retailers' expectations from sustainable packaging
- Trends in retail packaging and sustainability
- What role can retailers play in promoting sustainable packaging?
- Waste management strategies
- Cost effective strategies for reducing, reusing and recycling

Alan Kinnear, Packaging Strategy Consultant, INTERTECHPIRA, UK

09.10 **Green is also the colour of money**

- Green noise and packaging
- Mission brand activity
- Mainstream brand activity
- The landscape over the next 24 months
- How to marry design and green compellingly

Robert Monaghan, Innovation Consultant and Judith Allan, Production Director, JONES KNOWLES RITCHIE DESIGN AGENCY, UK

09.45 **Current trends in green design for packaging**

- What is green design? How should we define a green designed product?
- Who are the leaders in green design for packaging?
- What green packaging materials are making the biggest impact in the overall green design process?
- Understanding the role of green design in sustainability
- Major green design initiatives from brand owners

Dr Tracy Bhamra, Reader in Sustainable Design and Research Coordinator, Department of Design and Technology, LOUGHBOROUGH UNIVERSITY, UK

10.20 Morning refreshments

10.40 **Bridging the gap: using design to connect your brand, consumer and packaging**

- The designer's role in packaging development
- How the design process is built to react positively to change
- The role green packaging plays in defining the consumer experience
- Having it all: keeping your brand strong and consumers loyal while going green

Ronald de Vlam, Partner and Maria Weber, Senior Industrial Designer, WEBB SCARLETT DEVLAM, US

11.15

How best to sell green design packaging to an uninformed consumer

Join the debate on how best to design, market and sell green packaging to a market segment that may not be environmentally savvy. Hear case studies on the successes and also the problems that arise in communicating your message effectively
A selection of the day's speakers

PANEL DISCUSSION

Material selection

11.50

Incorporating environmental considerations into the packaging development process

- Opportunities and challenges: building a business case
- Importance of cross-industry dialogue
- Overcoming inertia through innovative design
- Case studies

Dr Paola Appendini, Senior Research Scientist, KRAFT FOODS GLOBAL, US

BRAND OWNER PERSPECTIVE

12.25

Lunch will be served for all speakers and delegates

13.25

Balancing the environmental impact with functional demands in packaging

- Evaluate whether a package complies with EU environmental legislation, the so-called 'essential requirements'
- Life Cycle Analysis (LCA) of packages and their value chain
- In co-operation with STFI-Packforsk's Environmental Testing Laboratory, developing resource-optimised packages with complete documentation to assure free access to the EU market
- Investigations and mappings to form the basis for strategic decisions connected to packaging, recycling and future legislation

Dr Michael Lindström, Research Manager New Materials and Composites, STFI-PACKFORSK, Sweden

14.00

Using material selection for your green design

- Examples of current recycling processes
- Developing your product from day one with an aspect of green design in mind
- Case study of London's closed loop program

Edward Kosior, Managing Director, NEXTEK LIMITED, UK

14.35

Material selection in green design: can you overcome the cost of new materials with advanced design and how you can best mitigate the risk?

Cost drives nearly all aspects of business and new products so incorporating new materials into your mainstay products may seem costly and inefficient. On the other hand, the environmental and consumer benefits may easily overshadow any up-front costs

- How do you know which material is your best option?
- How much should you incorporate into your product line?

Join the discussion with your own thoughts and concerns in this interactive panel conducted by a selection of the day's speakers

PANEL DISCUSSION

15.10

Afternoon refreshments

Plastic vs paper vs bioplastics

15.30

Ecological, economic and social ramifications for green design in plastics

- Current markets for green friendly plastic packaging
- Cost/benefit analysis in emerging consumer driven markets for sustainable plastics
- Common misconceptions of green plastics
- How to best use plastics to your advantage in green design
- Educating the consumer on your new green process

Bernard Merckx, President, EUROPEAN PLASTICS CONVERTERS (EuPC), Belgium

16.05

Green design for paper products

- Current performance of paper in sustainability
- How recycled paper has changed
- Can there be a top-down approach to sustainable paper in packaging?
- Where are the next markets for green design in paper?

Lars Sandberg, Manager, New Business Solutions, STORA ENSO, Sweden

16.40

Advances in biodegradable films for pressure-sensitive labelling applications

- Current trends in packaging and labelling
- A review of candidate biodegradable films for pressure-sensitive labelling
- Specific challenges and technical assessments
- Life Cycle Analysis (LCA) considerations

Dr Mike Taylor, Business Development Manager, INNOVIA FILMS, UK

17.15

Closing remarks by the chair

17.20

Drinks reception

All speakers and delegates are invited to a relaxed and informal drinks reception to network and discuss the day's proceedings

Friday 6 July 2007

07.30 Registration and refreshments

07.50 Opening remarks from the chair:
Gerald Rebitzer, Manager, Product Steward, ALCAN, Switzerland

Packaging considerations

08.00 **Green design in aluminium**

- Current industry analysis of metals in green design
- How industry can cut costs through innovative metal substitutes
- Applications for metals in green design
- Future trends for metals in sustainable packaging

Miguel Pinedo, Sales and Marketing Manager, ALCOA EUROPE, Spain

08.35 **Green inks and solvents: is it possible or cost prohibitive?**

- Traditional inks and implications for the environment
- Developing new inks and solvents with sustainability in mind
- Naturally-based inks and biosolvents in packaging
- Ionic liquids as alternative solvents
- RFID inks and their sustainability

Malisa Troutman, Senior Research Chemist, SUN CHEMICAL, Europe

09.10 **Protective shipping boxes for retail order distribution shall and can be environmentally friendly**

- How shipping boxes will be protective because logistics have accelerated
- How shipping boxes used for retail order distribution get out of the distributor's control after delivery and therefore can alter the brand's image if the wastes are badly disposed of
- Cost impact of processing the waste
- State of the art low cost protective boxes for retail order distribution
- Review of the sustainability regulation in major industrial countries
- Trends for shipping boxes in retail order distribution

Bernard Dominici, Territory Sales Manager, B+ EQUIPMENT, France

09.45 Morning refreshments

10.05 **Increasing the use of sustainable packaging through the application of barrier performance enhancement treatments: a step in the continuum**

- Advances in sustainability: biodegradability vs other routes to sustainable solutions
- Recyclability as a natural extension of renewability
- Improving barrier properties of renewable materials to meet packaging needs
- Priorities in the continuum of sustainability
- Examples of successful solutions
- The future of green design in packaging

Robin Cooper, New Business Development Manager, MICHELMAN INC, Belgium

Waste management

10.40 **Life Cycle Management (LCM) in your green design process**

- Engineering for the environment
- Case example of Alcan's sustainability programme
- Utilising design advances

Gerald Rebitzer, Manager, Product Steward, ALCAN, Switzerland

11.15 **Environmental assessments for packaging**

- Overview of Life Cycle Assessment (LCA) studies for a range of products
- Environmental impact statement
- Environmental sensitivity and productivity analysis
- Environmental and social costs, consumer surplus benefits and alternative energy
- Analysis case studies

Peter Skelton, Materials Development Manager, Plastics, THE WASTE AND RESOURCES ACTION PROGRAMME (WRAP), UK

11.50 Closing remarks by the chair

12.25 Lunch will be served for all speakers and delegates



Biodegradability in Plastics Packaging

Retailers and brand owners are under pressure to deliver healthy, safe and environmentally friendly products. Being 'green' is an image worth cultivating, providing potential marketing benefits in the minds of consumers. But users of biodegradable packaging still demand high performance, shelf impact, barrier properties, strength and it is here that vital new technologies are being developed. This study examines the technologies involved in producing biodegradable packaging, analysing relative merits across the range of different polymers. It also considers different applications and the cost/legislative drivers to increased environmental acceptability.

£295/€440/\$550



Biopack news

Get all the latest biodegradable packaging industry news sent to you every two weeks. Our team of journalists investigate the latest developments in materials technology, production and company activity to bring you Biopack news. Every story is guaranteed to be exclusive - if you read it anywhere else, you get your money back! Keep ahead of your competitors and find out what they're up to by subscribing to this vital publication.

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Biopack e-journal

This monthly journal brings you up to date on the issues affecting the biodegradable packaging industry. Each issue consists of three technical articles which focus on key areas of development whether it be materials, regulatory, primary market data and forecasts or brand owner/supplier profiles. These in-depth consultancy-level insights can be used to help your business develop both strategically and technically.

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Conference registration form

3rd Annual Biodegradable Plastics in Packaging Applications Green Design for Packaging

Two IntertechPira two day conferences plus two half day pre-conference workshops

Biodegradable Plastics in Packaging Applications: Tuesday 3 - Wednesday 4 July 2007
Green Design for Packaging: Thursday 5 - Friday 6 July 2007

Hilton Munich Park Hotel, Munich, Germany

Workshop 1- Recycled Plastics in Packaging Applications

Half day pre-conference workshop - **Monday 2 July 2007, 8.30 - 12.00**

Workshop 2- New Markets for Bioplastics

Half day pre-conference workshop - **Monday 2 July 2007, 13.00 - 16.30**

Step 1 Your details

Title.....First Name:.....Surname:.....
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Company business:.....
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Step 2 Event options and fees

Biodegradable Plastics conference fee:	£999 <input type="checkbox"/>	€ 1449 <input type="checkbox"/>	\$ 1899 <input type="checkbox"/>
Green Design conference fee:	£999 <input type="checkbox"/>	€ 1449 <input type="checkbox"/>	\$ 1899 <input type="checkbox"/>
Attend both conferences and save!	£1599 <input type="checkbox"/>	€ 2319 <input type="checkbox"/>	\$ 3039 <input type="checkbox"/>
Workshop 1 fee:	£399 <input type="checkbox"/>	€ 579 <input type="checkbox"/>	\$ 759 <input type="checkbox"/>
Workshop 2 fee:	£399 <input type="checkbox"/>	€ 579 <input type="checkbox"/>	\$ 759 <input type="checkbox"/>
Attend both conferences and both workshops for the best value!	£1999 <input type="checkbox"/>	€ 2899 <input type="checkbox"/>	\$ 3799 <input type="checkbox"/>
Academic rate:	£189 <input type="checkbox"/>	€ 269 <input type="checkbox"/>	\$ 349 <input type="checkbox"/>
Tabletop display + delegate spot*	£1319 <input type="checkbox"/>	€ 1919 <input type="checkbox"/>	\$ 2509 <input type="checkbox"/>
Industry Insight	£75 <input type="checkbox"/>	€ 110 <input type="checkbox"/>	\$ 150 <input type="checkbox"/>

Early Bird offer!

Book your place before **18 May 2007** and get 10% off the prices above!

UK VAT will be charged where appropriate at 17.5% unless an EU VAT number is supplied. Where UK VAT is not applicable, local VAT will be charged where appropriate.

* For more information on our many exhibition opportunities that can meet your business goals, please contact Natalie King on +44 (0)1372 802164 or natalie.king@pirainternational.com

Step 3 Payment method

Purchase Order No: VAT No:

UK VAT will be charged at 17.5% unless an EU VAT number is supplied. Where UK VAT is not applicable, local VAT will be charged where appropriate.

Charge my credit card: Visa MasterCard American Express

Security Code

PLEASE NOTE: Credit card details will be necessary if your booking is made less than 10 days prior to the start of the conference, or if your invoice remains unpaid at the start of the event.

Card number:..... Expires:.....

Cardholder name and address:.....

Cheque/banker's draft (made payable to Intertech-Pira) Please invoice my company

Invoices cannot be issued without receipt of a purchase order at the time of booking.

Banker's information for credit transfer payments

Sterling A/C:	HSBC Bank plc, 100 King Street, Manchester M60 2HD Branch Sort Code: 40-31-24 Swift Code (BIC): MIDLGB22	Account No: 62182610 IBAN: GB88 MIDL 4031 2462 1826 10
Euro A/C:	Deutsche Bank AG London Branch Sort Code: 23-30-55 Swift Code (BIC): DEUTGB3L	Account No: 13116600 IBAN: GB35 DEUT 4050 8113 1166 00
US Dollar A/C:	Citibank NY Swift Code (BIC): CITIUS33	Account No: 30569898 ABA No: 021000089

Signature:.....Date:.....

Pira Reg. No. 3858209 Pira VAT No. 677 3667 81

Brochure registration code: **WEB**

Step 4 How to book

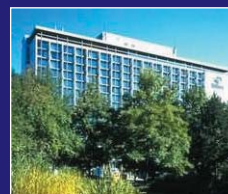
Post this form to: **IntertechPira, Cleve Road,
Leatherhead, Surrey KT22 7RU, UK**

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

By phone on: **+44 (0)1372 802164**

Online at: **www.intertechpira.com**

Conference information



Venue details

Stay in central Munich at the Hilton Munich Park hotel. Just 30 minutes' drive from the airport, the Hilton Munich Park hotel offers 21 meeting rooms for up to 1020, business centre, Executive Lounge and wireless internet access. Enjoy a steak at the Hilton Munich Park hotel's Tivoli Restaurant and Club. Sip a beer in the

People's Bar or a coffee in Kaffeeeklatsch Lobby Café. De-stress with a workout, a swim in the pool or a sauna and massage at the Hilton Munich Park hotel's health club.

Accommodation

Delegates are responsible for organising their own travel and accommodation. A limited number of rooms have been reserved for conference delegates wishing to stay at the Hilton Munich Park hotel at a reduced rate. Wherever possible, accommodation should be reserved by **1 June 2007** as rooms cannot be guaranteed and rates are subject to change after this date. To book your accommodation, please contact Origin Events on:

T: +44 (0)845 301 9002

E: info@originevents.co.uk

Please quote 'IntertechPira conference' as a reference when booking.

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. **PLEASE NOTE:** Credit card details will be necessary if your booking is made less than 10 days prior to the start of the conference, or if your invoice remains unpaid at the start of the event.

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 Jo Stone.

Note

IntertechPira does not accept liability for any loss of or damage to the personal effects of delegates attending the conference. IntertechPira reserves the right to cancel, defer or modify the event proceedings without prior notice. If you have sent a booking to us but have not received joining instructions at least one week prior to the event, please contact Jo Stone urgently on:

T: +44 (0)1372 802044 or

E: jo.stone@pirainternational.com

Visas

Delegates requiring visas should request a visa invitation letter from IntertechPira 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 embassy themselves. IntertechPira can do nothing further to assist in this process.

For further information on these events, please contact:

Booking enquiries: Natalie King
T: +44 (0)1372 802164
F: +44 (0)1372 802243
E: natalie.king@pirainternational.com

Biodegradable Plastics:

Conference Producer: Henrietta Bean
T: +44 (0)1372 802055
E: henrietta.bean@pirainternational.com

Green Design:

Conference Producer: Heath Clendenning
T: +1 207 781 9629
E: heath.clendenning@pirainternational.com

Conference Co-ordinator: Jo Stone
T: +44 (0)1372 802044
F: +44 (0)1372 802243
E: jo.stone@pirainternational.com

Marketing and Press: Lisa Valentine
T: +1 207 781 9627
E: lisa.valentine@pirainternational.com

Exhibition and Sponsorship: Natalie King
T: +44 (0)1372 802164
F: +44 (0)1372 802243
E: natalie.king@pirainternational.com

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