







IPPS 2009

Latest updates in the panel products industry







16-18 September 2009

La Cité Internationale des Congrès Nantes, France



www.ipps.uk.com



Dear Colleague,

Join us for this year's International Panel Products Symposium in the beautiful city

**IPPS 2009** brings together experts from academic and industrial sectors to discuss the issues we face today and look at future opportunities. The current economic predictions are bleak for our industry with many plant closures and production curtailments. However, this year the focus for IPPS is to look at some of the future opportunities for panel products in the built environment and how this can help with sustainability in construction.

Increasing environmental legislation is having an impact on the practices used in the built environment and companies are challenged by these new measures. Materials that can clearly demonstrate their technical and environmental performance are needed to achieve these demands. Wood based panel products clearly have a role in meeting these needs.

This year, session 1 will therefore focus on sustainable buildings providing an insight into how we can clearly demonstrate the benefits of our materials to the construction sector.

The focus for session 2 will be **formaldehyde**. Tightening regulations presented from a Californian perspective will be highlighted followed by new approaches to reduce the level of formaldehyde in panel products.

Other sessions will look at technical developments in plywood products, light weight panels and machinery and process control whilst the final session will look at alternative feedstocks recycling of our products.

IPPS 2009's packed programme discusses all the key concerns that we face today. Delegates can develop new ideas for future products; take a look at the issues of formaldehyde; discuss the concerns over lack of materials and get an update on the latest production technologies that can

We look forward to seeing you there!

#### **ROBERT ELIAS**

Commercial Manager, Centre for Advanced and Renewable Materials, BIOCOMPOSITES CENTRE, UK

## **Exhibition and sponsorship** opportunities

A range of sponsorship and exhibition based packages are available to organisations looking to develop their business within the wood panels sector. Participation at IPPS 2009 will demonstrate your organisation's expertise in these markets and raise your corporate profile amongst senior decision-makers in leading international companies. For more information on how this conference can benefit your company, please contact Caroline Potapa on +44 (0) 1372 802101 or caroline.potapa@pira-international.com

## Day 1: 16 September

**08:00** Registration and refreshments

09:00

Opening address



**Robert Elias, Commercial** Manager, Centre for Advanced and Renewable **Materials, BIOCOMPOSITES** CENTRE, UK

### Sustainability and Sustainable Buildings

09:20 Kevnote



The wood-based panels industry: Market developments and challenges for the future Kris Wijnendaele, Secretary General, EUROPEAN PANELS FEDERATION and EUROPEAN FEDERATION OF THE PLYWOOD INDUSTRY (FEIC), Belgium

09:50



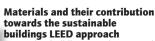
Sustainable times - setting a benchmark for the forest products industry for the 21st Century

• Holistic nature of sustainability from

- a wood products supply perspective Evaluates what it takes to be a
- truly sustainable supplier of wood products
- Focuses on tropical hardwood plywood and outlines the journey that Weyerhaeuser has embarked upon to provide sustainable solutions for this market segment for the 21st Century

John Guerin, European Commercial Director, WEYERHAEUSER PRODUCTS Ltd, Belaium

10:20





- Creating building capacity to recycle what it will produce during its life cycle
- Materials with high recycled content and their to cradle to cradle relation
- Rapid renewable materials and biodiversity
- Certified wood from sustainable forests, an effort to biodiversify and the effect of human expansion
- Low emission materials and their contribution towards the health and wellbeing of people working and living in buildings. Adhesives, paints, floors, composite woods and materials, furniture and seating

Aurelio Ramírez Zarzosa, Founder and President, SPAIN GREEN **BUILDING COUNCIL, Spain** 

10:50

Morning refreshments

11:20

**Environmental product** declaration of wood based panels: an answer to sustainability requirements

- · Life Cycle Assessment (LCA) of main French wood-based panels
- Integration of biomass carbon field in the LCA
- Main results of Environmental Product Declarations (EPD)

Claire Cornillier, Environmental Project Manager, FCBA ENVIRONMENT & HEALTH DEPARTMENT, France Co-Authors: Pacitto P, Michaud C and Vial E

11:50

#### Sustainability tools used in the UK for construction materials and products

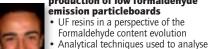
- Construction sector embracing new methods such as MMC, modular units, energy efficiency, thermal bridging and sustainability
- BRE in UK leading way in developing tools to understand modern requirements
- Talk will outline tools such as Ecohomes, Code for Sustainable Homes, Smartwaste, BREEAM, The Green Guide
- It will look at the potential of panel products within these tools and for sustainable construction

Dr Dennis Jones, Project Manager, WOODKNOWLEDGE WALES, & Senior Consultant BRE WALES, UK

Lunch will be served for all speakers and 12:20

### **Indoor Air Quality and Formaldehyde**

- Formaldehyde in the built environment: the Californian perspective
  - Government and Industry overview Maureen F. Gorsen, Director - Department of Toxic Substances Control, CALIFORNIA EPA, US
- 14:10 Development of a system for the production of low formaldehyde



- resins and scavengers Chemical and structural perspective of
- scavengers Application of formaldehyde scavengers
- to wood particleboards

Filipe José Celestino Silva, PhD Student RCP - Network for Competence in Polymers, Department of Chemical Engineering, Faculty of Engineering, UNIVERSITY OF PORTO, Portugal Co-Authors: Pereira J, Ferra J, Mena P, Liberal JP, Magalhaes F, Mendes A, Martins J and Carvalho L

14:40 Afternoon refreshments

15:10 Liquefied wood as a formaldehyde scavenger for wood-based panels

 Description of the wood liquefaction process Reduction of formaldehyde emissions

observed in particleboards and plywood Sergej Medved, Head of Laboratory for Wood Based Composites, UNIVERSITY OF LJUBLJANA, Slovenia

15:40 An investigation of the origin of formaldehyde found in poplar

veneers · How to reduce the formaldehyde release

of the wood based panels Level of formaldehyde emission of poplar veneers and to find the origin of this

formaldehyde release

Formaldehyde emission in wood based panels and the regulations

Baha Guezguez, PhD Student, ECOLE SUPERIEURE DU BOIS, France Co-Authors: Irle M, Belloncle C

Poster session and networking 16:10 reception





# Latest updates in the panel products industry

Three day conference: 16-18 September 2009 La Cité Internationale des Congrès, Nantes, France

## Day 2: 17 September

**08:00** Registration and refreshments

## Plywood and Laminated

08:30

Physical, mechanical properties and burning behaviours of beech plywood made of thermally modified veneers

- Thermal modification of beech veneers in overheated steam
- · Plywood sheets made in the laboratory Mechanical and physical plywood properties testing
- Burning behaviour and heat transmission coefficient determination

**Marek Grzeskiewicz, Faculty** of Wood Technology, WARSAW UNIVERSITY OF LIFE SCIENCES - SGGW, Poland Co-Authors: Borysiuk P and Jaskolowski W

08:55

#### Microwave drying of Pinus radiata D. Don. Veneer



- The use of microwave processing for plywood manufacture including:
  - the microwave heating of veneer logs prior to peeling
  - the microwave drying of veneer modification of refractory peeler cores for value added products
- The drying of rotary peeled veneer using microwaves

**Prof Peter Vinden, Chair, Forest Industries, THE UNIVERSITY OF** MELBOURNE, Australia Co-Authors: Torgovnikov G, Subarudi and Wahudi

09:20

#### Improvement of the properties of birch plywood by thermal modification



Improving natural durability and hydrophobic properties of wood and wood products by thermo-modification

- Thermo-modification of birch plywood, products' mechanical properties and resistance to rot fungi depending on the modification temperature
- · Changes to wood composition and structure by thermal treatment processes as a key for understanding and optimising thermo-modification

Vladimirs Biziks, Researcher, **LATVIAN STATE INSTITUTE OF WOOD CHEMISTRY, Republic of** 

Co-Authors: Andersons B, Zudrags K, Andersone I, Grinninsh J and Sansonetti E

09:45

#### **Possibility of using Arundinaria** alpina bamboo based panel boards for interior applications



resistance properties similar to those of wood based boards Bamboo panel boards bonded with

both PF and UF cannot be used for exterior applications

Mathias Lugoye, College of Engineering and Technology,
UNIVERSITY OF DAR ES SALAAM, Tanzania Co-Authors: Tesha J.V, Nyahumwa C and Karlsson S

10:10

# Enhancing the environmental and mechanical properties of LVL



- How to drastically decrease the glue rate into LVL using very thick veneer Determination of lathe checks
- influence on LVL mechanical properties
- Research of a compromise between mechanical and environmental (glue consumption) concerns
- Valorize second quality woods

Rémy Marchal, Materials and **Process Laboratory (LABOMAP** - EA 3633) Department of Wood Material and Machining, ECOLE NATIONALE SUPERIEURE D'ARTS ET **METIERS, France** Co-Authors: Deschamps Clement, Butaud Jean-Claude and Cottin

**10:35** Morning refreshments

#### **Lightweight Panels**

11:20

#### Kaurit® Light - the solution for lightweight furniture



- New, 30% lighter board on existing equipment using existing technology
- Low investment and minimum risk
- Savings in energy, transport and packaging costs
- Eco-efficiency: equal to state of the art wood based boards

Maxim Peretolchin, Research Scientist, BASF, Germany

11:45

#### **Perceptions of Austrian furniture** customers of lightweight materials



- Analysis of the acceptance, perception and image of different lightweight solutions among respondents
- Product requirements for and benefits of lightweight applications
- Identification of market entry barriers and market opportunities
- Characterisation of applications most promising for the use of lightweight materials

Asta Eder, Senior Researcher, **COMPETENCE CENTRE FOR WOOD COMPOSITES AND WOOD** CHEMISTRY (WOOD K PLUS), Austria

Co-Author: Peter Schwartzbauer, Institute of Marketing & Innovation, Department of **Economics and Social Sciences,** BOKU – University of Natural Resources and Applied Life Sciences, Austria

12:10

#### The continuous production of sandwich panels with paper honeycomb core for furniture applications

- Paper honeycomb technology and panel production processes
- Design of low cost sandwich panels with thin skin layers and paper honeycomb core
- Development of a continuous in-line production process
- The scope of the new sandwich panels and important material properties

Max Britzke, Research Assistant, Faculty of Mechanical Engineering, **Institute of Wood and Paper** Technology, Professorship of Wood and Fibre Materials Technology, DRESDEN UNIVERSITY OF TECHNOLOGY, Germany Co-Authors: Herold J, Korn C, Wagenfuhr A

12:35 Lunch will be served for speakers and delegates

#### **Machinery, Process Control and Machining**

14:00 Keynote

#### Benchmarking in the wood based panel business - determining your plant's competitive position

- Definition of benchmarking
- Benefits and uses of benchmarking
- Characteristics of a good
- benchmarking study
   Sample contents of a benchmarking study

Jussi Silventoinen, Head of Forest Industry, INDUFOR OY, Finland

14:25

Online monitoring of the processing of strand based wood composites: a real time option for optimised production

- Overview of the concept and methodology used in the development of a software application for online monitoring of the processing of strand based wood composites
- Samples of simulations
- Future development and potential for mill applications

Dr Azzeddine Oudjehane, President, AZZO & ASSOCIATES **CONSULTING, Canada** 

14:50



**High energy and maintenance** savings by improving tribology in continuous MDF/OSB/PB Presses

- Optimised tribology on a continuous PB/MDF/OSB press line can save:
  - Reasonable energy quantities
- High maintenance efforts
- High wear of moving parts While at the same time increase

readiness, productivity and work place and environmental safety

Achim Offerman, Senior Manager, IDEMITSU LUBE EUROPE GmbH, Germany

Co-Author: Jansen U

**15:15** Afternoon refreshments







15:45



**Effect of formaldehyde scavengers** on the machining of particleboard Jorge Martins, Coordinator **Professor, ESTV-POLYTECHNIC INSTITUTE OF VISEU, Portugal** Co-Authors: Garrido N, Pereira J, Martins J, Mendes J, Costa C and

16:10



- Advanced multisensory camera scanners and vision-controlled ultra-fast XYZ robotic manipulators to physically repair panels
- Roadmap for the next step in automatic panel repair technology
- 'Green' wood panel factory

Dr Robert Massen, Advisor, **BAUMER INSPECTION GmbH,** Germany Co-Authors: Marc O. Kuehn Joerg **Eberhardt** 



- the manufacturing process
- Online measuring technologies to survey, detect and forecast the quality of the raw materials
- · Optimisation of production to save material and energy

Dr Joerg Hasener, R&D Manager MT, FAGUS-GRECON GRETEN GmbH & Co. KG, Germany

Closing remarks from the Chair

18:00



## Day 3: 18 September

**08:30** Registration and refreshments

## **Wood Based Panels -Recycling and Novel Feedstocks**

09:00

**COST Action E49: Processes and** performance of wood-based panels

- Contribution from WBP to the environment and research that aims to reduce any negative impacts Overview of COST Action E49
- · Outline of current research work being conducted on these negative impacts

Mark Irle, Research Director, **ECOLE SUPERIEURE DU BOIS and** Chairman of E49, France

#### 09:25 ► MDF/HDF production from plantation wood species



- Establishing the raw material base for the newly built MDF/HDF production line in Mohács, Hungary - these raw materials should be obtained from wood plantations
- Laboratory experiments were done on production of MDF and HDF boards with the following raw materials: 5 and 10 years old Pannonia poplar, 1214 poplar, black locust and Austrian pine
- The following characteristics of the boards were tested: bending strength, internal bond, modulus of elasticity, thickness swelling, density, moisture content, formaldehyde content

Tibor Alpar and Tamas Faczan, Faculty of Wood Sciences, Institute of Wood and Paper Technology, UNIVERSITY OF WEST HUNGARY, Hungary Co-Authors: Katoli G, Racz I

09:50

#### The potential for utilisation of corn stalk in medium density fibreboard production



- Corn stalk is used as raw material for MDF production utilising different press time and temperature
- Mechanical properties (MOR, MOE & IB) of the produced boards were superior to the EN standard
- Surface smoothness and density profile was comparable to MDF from wood

Dr Abolfazl Kargarfard, Research **Assistant Professor, Wood and** Forest Products Research Division, **IRAN RESEARCH INSTITUTE OF FORESTS AND RANGELANDS, Iran** Co-Author: Nourbakhsh A

10:15

#### **Properties of fibreboard pulps** manufactured from selected types of recovered wood



- Classification of recovered wood resources: the type of origin product (palettes, boxes, containers and other), content of softwood, hardwood and exotic wood and the content of other materials
- Overview of pulp characteristics used for production of different fibre panel products
- Characteristics of experimental pulps produced from recovered wood

Marcin Klimczewski, Assistant **Professor and Lecturer, Faculty** of Wood Technology, WARSAW UNIVERSITY OF LIFE SCIENCES, **Poland** 

Co-Authors: Danecki Lech, Nicewicz D

10:40

#### **Recycling of UF-bonded fibreboards**



- Recycled fibres are different in physical and chemical behaviour compared to virain fibres
- Virgin fibres can be partially substituted by recycled fibres
- Boards made with about 30% recycled fibres are more or less of the same quality as boards from virgin fibres
- The use of recycled fibres has no negative effect on the formaldehyde release of the boards

Dr Edmone Roffael, Professor, UNIVERSITY OF GÖTTINGEN, Germany Co-Authors: Behn C, Dix B and Bär G

**11:05** Morning refreshments

Resins



Formaldehyde-free dimethoxyethanal-derived resins for wood based panels Dr Milena Properzi, Research Associate and Lecturer HF, BERNER **FACHHOCHSCHULE, Switzerland** 

12:00

#### **Evaluation of adhesive cure by ABES and IPATES for two UF resins**



- Production of the new generation UF resins, by improving the polymerisation reactions and mainly optimising the synthesis process
- Determination of molecular weight distribution of the UF resins produced by different processes
- Evaluation of the adhesive cure by IPATES and ABES for UF resins

produced by different process

Joao Ferra, PhD Student, **Department of Chemical Engineering - Faculty of** Engineering, UNIVERSITY OF PORTO, Portugal **Co-Authors: Ohlmeyer M, Mendes** A.M, Costa M.R, Carvalho L, Magalhaes F.D

12:25

## Urea formaldehyde particleboard resins prepared with cornstarch and mimosa tannin

- · Physical properties of cornstarchtannin-urea formaldehyde adhesives
- Mechanical properties of particleboard manufactured using cornstarch-tanninurea formaldehyde resins
- Cornstarch-mimosa tannin-UF resin is a good wood adhesive for particleboard applications

Dr Amine Moubarik, Dr in **Chemistry and Polymer Physics,** UNIVERSITE DE PAU ET DES PAYS **DE L'ADOUR, France** 

12:50 Closing remarks and end of conference, followed by 'lunch to go'.





#### THE VENUE

This year's IPPS conference will be held in the beautiful and historic city of Nantes in the heart of the Loire Valley. Easily reached by train (direct TGV connections to Paris/Charles de Gaulle Airport in 2 hrs, or Lyon/Lille in 4 hrs), road (3h15 to Paris on the motorway) and air (Nantes-Atlantique airport, the leading air travel hub in Western France with 67 domestic and international destinations).

#### **GETTING THERE**

Nantes International Convention Centre is located in town right opposite the highspeed train station and is directly accessible from the ringroad or from the airport by shuttle (15mins). You can easily walk to the city centre, take a bus or the tram.

La Cité Internationale des Congrès Nantes - Métropole 5, rue de Valmy, BP 24102 44041 Nantes Cedex 1 T: 02 51 88 20 00 / F: 02 51 88 20 20 E: info@congres-nantes.fr / www.congres-nantes.fr

#### ACCOMMODATION

Delegates are responsible for organising their own travel and accommodation. A limited number of rooms have been reserved at three local hotels by our booking agent Pro-ven. To take advantage of this special rate delegates must reserve their room no later than 15 June 2009. Wherever possible accommodation should be reserved early as rooms cannot be guaranteed and rates are subject to change

Pro-ven will be happy to book your accommodation at these or an alternative hotel if you prefer, simply contact them on:

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Please quote 'IPPS conference' when booking.

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The event fee includes entry to the conference/workshop 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 the day's E/E/\$ exchange rate at the time of the transaction. Please see note in Step 3 for further details.

#### **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 nor fees refunded thereafter. Substitutions may be made at any time, please notify the Operations Manager, Jenny Fehrenbach +44 (0)1372 802166 or jenny.fehrenbach@pira-international.com

#### NOTE

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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 International can do nothing further to assist this process.

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#### Three day event: 16-18 September 2009

La Cité Internationale des Congrès Nantes France

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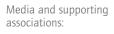


3 day conference: 16-18 September 2009 La Cité Internationale des Congrès Nantes, France



The BioComposites Centre Deiniol Road Bangor, Gwynedd LL57 2UW, UK











#### Speakers include:

- AZZO & Associates Consulting
- BASE
- Baumer Inspection GmbH
- Berner Fachhochschule
- California EPA
- BioComposites Centre
- Competence Centre for Wood Composites and Wood Chemistry (Wood K plus)
- Dresden University of Technology
- Ecole Nationale Supérieure d'Arts et
- Ecole Supérieure du Bois
- ESTV Polytechnic Institute fo Viseu
- European Panels Federation
- Fagus-GreCon Greten GmbH & Co. KG
- FCBA Environment & Health Department

- Idemitsu Lube Europe GmbH

- Indufor Ov
- Iran Research Institute of Forests and Rangelands
- Latvian State Institute of Wood Chemistry
- Spain Green Building Council
- The University of Melbourne
- Université de Pau et des Pays de l'Adour
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