



Provisional Programme

1st Day

Wednesday, 10 September 2008

08:30 am: Reception to participants and registration

09:30 am: Opening session

Short welcome speeches by:

- Prof. Salvato Trigo, Rector of Fernando Pessoa University (UFP)
- Dr. Álvaro Monteiro, Director of the Faculty of Science and Technology (UFP)
- Prof. Lemos de Sousa, Director of CIAGEB – Centre for Research on Global Changes, Energy, Environment and Bioenergy (UFP)
- Dr. Fernando Caldeira Jorge, Coordinator of the Scientific and Organisation Commissions of ECOWOOD Conferences.
- Prof. Roger M. Rowell, Prof. Emeritus, University of Wisconsin, Madison, WI, USA.

10:30 am: Keynote Address

Development of New Binders for Wood and Cork - Polymer Design Strategy based on Renewable Resources

João Bordado

IBB – Institute for Biotechnology and Bioengineering, Centre for Biological and Chemical Engineering, Instituto Superior Técnico, Av. Rovisco Pais, 1049-001, Lisboa, Portugal; and ICTPOL – Polymer Science and Technology Institute, Instituto Superior Técnico, Torre Sul, Av. Rovisco Pais, 1049-001, Lisboa, Portugal

11:00 am: Coffee break

Session 1 – Adhesion Issues:

Adhesive Improvement, Chemicals from Renewable Sources and Binderless Bonding

11:30 am Investigating the Reactivity of Soy Proteins in Wood Resins

Amy Philbrook^{1,}, Christopher J. Easton¹, John Mills²*

¹Research School of Chemistry, Australian National University, Canberra ACT, Australia

²Hexion Specialty Chemicals, Laverton VIC, Australia

12:00 am Characterization of the Two Different Phases in Urea-Formaldehyde Resins

*João Ferra¹, Jorge Martins^{1,2}, Adélio M. Mendes¹, Mário R. Costa³, Luísa Carvalho^{1,2},
Fernão D. Magalhães²*

¹LEPAE, Chemical Engineering Department, Faculty of Engineering, University of Oporto, Oporto, PORTUGAL; ²DEMad – Department of Wood Engineering, Polytechnic Institute of Viseu, Viseu, PORTUGAL; ³LSRE, Chemical Engineering Department, Faculty of Engineering, University of Oporto, Oporto, PORTUGAL

00:30 pm Study of the Stable State Formaldehyde Emission for Plywood by the Flask Method

Simona Nicoleta Urdea¹, Octavia Zeleniuc¹, Valeriu Petrovici¹, Livia Sangeorzan²

¹Faculty of Wood Industry; ²Faculty of Mathematic and Computer Science; Transilvania University of Brasov, Brasov, Romania

01:00 pm: Lunch

Session 1 (cont.) – Adhesion Issues:

Adhesive Improvement, Chemicals from Renewable Sources and Binderless Bonding

02:30 pm Upgrade of PVAc-Based Glues for their Application in Wet Environments and in Structures. An Industry-Involving Project

S. Fernandes¹, J. Santos², C. Duarte², F. Caldeira Jorge^{3,}, J. A. Santos² and J. Bordado¹*

¹IBB-Institute for Biotechnology and Bioengineering, Centre for Biological and Chemical Engineering, Instituto Superior Técnico, Av. Rovisco Pais, 1049-001 Lisboa, Portugal;

²INETI – National Institute for Engineering, Technology and Innovation, Estrada do Paço do Lumiar, 22, 1649-038 Lisboa, Portugal; ³GAEA – Research Group on Environment and Applied Ecology, CIAGEB – Research Centre on Global Changes, Energy, Environment and Bioengineering, Fernando Pessoa University, Praça 9 de Abril, 349, 4249-004 Oporto, Portugal

03:00 pm Application of Oxidizing Enzymes for Bonding Lignocellulosic Composites

Jolanta Batog, Ryszard Kozłowski, Alojzy Przepiera

Institute of Natural Fibres, Poznan, Poland

03:30 pm: Coffee break

Session 2 – Wood Processing and Coating Issues

**04:00 pm Processing Roughness of New Eco- Panels
with Unconventional Cross Grain Display**

Lidia Gurau, Marina Cionca, Alin Olarescu, Octavia Zeleniuc

Wood Technology Department, Faculty of Wood Industry, Transilvania University, Brasov, Romania

**04:30 pm Punching as a Dust- and Chip-Free
Production Process in Wood Machining**

Hans-Werner Hoffmeister, Torsten Looß

Department Production Engineering, Institute of Machine Tools and Production Technology (IWF), Technische Universität Braunschweig, Braunschweig, Germany

**05:00 pm Impact of Impregnation with Boron Compounds on the Red Color Tone
of Some Hardwoods and Varnishes**

Musa Atar¹, Hakan Keskin², Zeki Candan³

¹Gazi University, Technical Education Faculty, Department of Furniture and Decoration, Besevler, Ankara, Turkey; ²Gazi University, Industrial Arts Education Faculty, Department of Industrial Technology, Gölbası, Ankara, Turkey; ³Istanbul University, Forestry Faculty, Department of Wood Mechanics and Technology, Bahçeköy, İstanbul Turkey

05:30 pm: Posters session with drinks reception

2nd Day

Thursday, 11 September 2008

10:00 am: Keynote Address

Sustainable Development: What is it and how do we Deal with it?

Roger M. Rowell

Pioneering Scientist, Retired, USDA, Forest Service, Forest Products Laboratory, Madison, WI, and Professor Emeritus, University of Wisconsin, Madison, WI, USA

Session 3: LCA and Materials Flow Issues

10:30 am **A System Approach to Analysing the Environmental Performance of Wood Products**

Roger Sathre, Leif Gustavsson

Ecotechnology, Mid Sweden University, Östersund, Sweden

11:00 am: Coffee break

11:30 am **Wood Fiber Flows in the British Columbian Forest Products Industry**

Jérôme Alteyrac, Emmanuel Ackom, Paul McFarlane

Department of Wood Science, Faculty of Forestry, University of British Columbia, Vancouver, Canada

12:00 am **Innovative Methodologies in Wood Tracking: The Chemi-Code Concept**

Bryce Smiley¹, Robert Franich², Paul McFarlane¹

¹Department of Wood Science, Faculty of Forestry, University of British Columbia, Vancouver, Canada; ²Scion, Te Papa Tipu Innovation Park, Rotorua, New Zealand

00:30 pm: Lunch

01:30 pm: Keynote Address

The Cleanliness of Recovered Wood

Mark Irle

Ecole Supérieure du Bois, Nantes, France

Session 4: Value-Addition to Less-Known Raw Materials and Waste

02:00 pm **Production of Environmentally Compatible Particleboard with a High Recycled Wood Content**

João Pereira², Brígida Pinto², Jorge Martins^{1,2}, Luísa Carvalho^{1,2}, Carlos Costa²

¹DEMAd – Department of Wood Engineering, Polytechnic Institute of Viseu, Viseu, Portugal; ²LEPAE - Laboratory of Process, Environment and Energy Engineering - University of Porto, Porto, Portugal

- 02:30 pm **Non-Wood Resin-Bonded Particleboard Made from Coconut Shell of the Palm Tree *Babaçu* (*Orbignya* sp.)**
*Rafael Gonçalves de Oliveira*¹, *Divino Eterno Teixeira*²,
*Cláudio Henrique Soares Del Menezzi*¹, *Gerson Henrique Sternadt*²
¹ *Department of Forest Engineering, Faculty of Technology, University of Brasília (UnB), Campus Darcy Ribeiro;* ² *Forest Products Laboratory (LPPF), Brazilian Forest Service (SFB); Brasília, DF, Brazil*
- 03:00 pm **Bioconversion of Amazonian Wood By-Product into Edible Mushrooms *Pleurotus ostreatus* (JACQ. ex FR.) KUMMER - Oyster Mushroom**
Ceci Sales-Campos, Basílio Frasco Vianez, Maria Aparecida de Jesus, Meire Cristina Nogueira de Andrade
National Institute for Amazon Research –INPA, Department of Forest Products – CPPF, Aleixo, Manaus, AM, Brazil
- 03:30 pm **Ecocycle of Papermaking Fibres: from Forest to Tree Rising**
Elena Bobu, Popa I. Valentin, Florin Ciolacu
Pulp and Paper Engineering Department, “Gheorghe Asachi” Technical University of Iasi, Iasi, Romania

04:00 pm: Coffee break

Session 5: Novel and Improved Methods for Wood Protection

- 04:30 pm **The Use of Sand Barriers to Prevent Subterranean Termite Attack on Wood Structures**
Basílio Frasco Vianez, Raimunda Liege Souza de Abreu, Ceci Sales-Campos, Felipe Rodrigo dos Anjos Cruz
National Institute for Amazon Research – INPA, Department of Forest Products – CPPF, Manaus, AM, Brazil
- 05:00 pm **Anti Fungal Effectiveness of Some New Environmental Friendly Wood Protection Agents contra Traditional Agents – A Screening Trial**
*Elias Raiser*¹, *Erik Larnøy*², *Holger Militz*¹
¹ *Burckhardt – Institute, Section Wood Biology and Wood Products, Faculty of Forestry, University of Göttingen, Germany;* ² *Norwegian Forest and Landscape Institute, Section Wood Technology, Ås, Norway*
- 05:30 pm **Effects of Heartwood Extract (HWE) of Teak and Cuprinol Clear on Weight Loss and Compressive Strength of Two Hardwood Species from Nigeria**
O.Y. Ogunsanwo, A. O. Adegeye, S. O. Olajuyigbge
Department of Forest Resources Management, University of Ibadan, Nigeria

06:00 pm Preliminary Data on the Antifungal Potential of Extracts of Amazon Leguminosae against Wood Decay Fungi

Maria Aparecida de Jesus¹, Tiago Pereira Cirino¹, Cristiano Souza do Nascimento¹, Luiz Augusto de Souza², Ana Paula Barbosa¹ (in memoriam)

National Institute for Amazonian Research – INPA, ¹Department of Forest Products - CPPF, ²Department of Natural Products - CPCA, Manaus, AM, Brazil

**08:00 pm: Conference Banquet at *Solar do Vinho do Porto*
(Port Wine House)**

Please note: the bus will leave Fernando Pessoa University main gate at 07:30 pm

3rd Day

Friday, 12 September 2006

10:00 am: Keynote Address

A Shift in Thinking: from Wood Composites to Biomaterials

Roger M. Rowell

Pioneering Scientist, Retired, USDA, Forest Service, Forest Products Laboratory, Madison, WI and Professor Emeritus, University of Wisconsin, Madison, WI, USA

Session 6: Advanced Processes for Materials and Energy

10:30 am Oriented Strand Board (OSB) from Hot Water Extracted Wood

Juan Jacobo Paredes Heller, Stephen M. Shaler

Advanced Engineered Wood Composites Center (AEWC), School of Forest Resources, University of Maine, Orono, ME, USA

11:00 am Effect of Sulfuric Acid Concentration and Hydrolysis Time on the Glucose Yield Hydrolysed from Lignocellulosic Materials in Malaysia

H'ng Paik San¹, K.L. Chin¹, B.T. Tey², M.T. Paridah³

¹ Faculty of Forestry; ² Faculty of Engineering; ³ Institute of Tropical Forestry and Forest Product: Universiti Putra Malaysia, UPM Serdang

11:30 am: Coffee break

12:00 am **Rapid Thermal Wood Modification by Electroheating**

*Armando G. McDonald, Anand Mangalam, Carla D. Blengeri Oyarce, Steven Shook
Department of Forest Products, University of Idaho, Moscow, ID, USA*

00:30 pm **Glass-Fibre Wood: The Composite Material Used in the Reduction of Wood in the Wood Laminated Industry**

Nuno Calçada Loureiro¹, José Luís Esteves²

¹Institute of Mechanical Engineering and Industrial Management – Composite Materials and Structures Research Unit, Leça do Balio, Portugal; ²Department of Mechanical Engineering and Industrial Management, Oporto University, Engineering Faculty, Oporto, Portugal

01:00 pm: Closing session

Short speeches by:

- Prof. Salvato Trigo, Rector of Fernando Pessoa University (UFP).
- Dr. Álvaro Monteiro, Director of the Faculty of Science and Technology (UFP)
- Prof. Lemos de Sousa, Director of CIAGEB – Centre for Research on Global Changes, Energy, Environment and Bioenergy (UFP)
- Dr. Fernando Caldeira, Coordinator of the Scientific and Organisation Commissions of ECOWOOD Conferences
- Prof. Roger M. Rowell, *Pioneering Scientist, Retired, USDA, Forest Service, Forest Products Laboratory, Madison, WI and Professor Emeritus, University of Wisconsin, Madison, WI, USA*

01:30 pm: Lunch

02:30 pm – 06:00 pm: **Tourist Tour in Oporto Region**
(optional, needs registration)

Poster Presentations

1. Adhesives

- 1.1. **Aminoplast Structural Adhesive with Technical Lignin for Glue Laminated Timber**
Simona Nicoleta Urdea, Ana Maria Varodi, Octavia Zeleniuc, Valeriu Petrovichi
Transilvania University of Brasov, Faculty of Wood Industry, Brasov, Romania
- 1.2. **New Adhesive Compositions based on Lignin and Furanic Resin for Glue Laminated Timber**
Valeriu Petrovici, Anca Maria Varodi, Octavia Zeleniuc, Lidia Gurau
Transilvania University of Brasov, Faculty of Wood Industry, Brasov, Romania
- 1.3. **New Binders based on Laccase Modified Lignins. Two Case-Studies: Bonding of Wood Fibres for MDF and Cork Granules for Cork Panels Production**
Vera Lourenço¹, Gabriela Sena-Martins¹, Carlota Duarte², Paulo Cortiço³, Luís Gil³, José Santos², José Cardoso Duarte¹
INETI-National Institute of Engineering, Technology & Innovation, Lisbon, Portugal: ¹DB/ UME, ²DMTP/GTM, ³DTIQ/UTC
- 1.4. **Influence of Lignin and Furanic Resin on the Wood Gluing Quality**
Octavia Zeleniuc, Anca Maria Varodi, Valeriu Petrovici, Kinga Judith David
Transilvania University of Brasov, Faculty of Wood Industry, Brasov, Romania
- 1.5. **Investigation on the Possibility of Resin Replacement with Alder (*Alnus subcordata*) Bark Extractives in the Particleboard Manufacture**
Javad Torkaman¹, K. Doosthosini²
¹ *Department of Forestry, Faculty of Natural Resources, Guilan University;* ² *Department of Wood Science and Technology, Faculty of Natural Resources, Tehran University, Iran*
- 1.6. **Tannins of Bark of Two Amazonian Forest Species for Production of Wood Adhesives**
Adriana Souza dos Santos¹, Basilio Frasco Vianez², Maria de Jesus Coutinho Varejão², Ana Paula Barbosa (in memorian)
¹ *Amazonas Federal University;* ² *National Institute for Amazonian Research – INPA, Department of Forest Products – CPPF, Aleixo, Manaus, AM, Brazil.*

2. Coatings

- 2.1. **Impact of Impregnation with TimkberCare-Aqua on the Surface Adhesion Strength of Synthetic, Acrylic, Polyurethane and Water-Based Varnishes**
Hakan Keskin¹, Musa Atar², Zeki Candan³
¹ *Gazi University, Industrial Arts Education Faculty, Department of Industrial Technology, Gölbası, Ankara, Turkey;* ² *Gazi University, Technical Education Faculty, Department of Furniture and Decoration, Besevler, Ankara, Turkey;* ³ *Istanbul University, Forestry Faculty, Department of Wood Mechanics and Technology, Bahçeköy, İstanbul, Turkey*

3. Wood for Sustainable Development

3.1 The Sustainable Use of Wood

M. A. P. Dinis

*CIAGEB – Global Change, Energy, Environment and Bioengineering R&D Unit,
Fernando Pessoa University, Oporto, Portugal*

3.2 Wood Innovation in the Green Building Construction Sector

Helga Neves, M. A. P. Dinis

Fernando Pessoa University, Oporto, Portugal

4. Protection against Biodeterioration

4.1. Preliminary Bioassay of Antifungal Potential of Extractives from Bark of Amazon Wood to Decay Fungi

*Cristiano Souza do Nascimento¹, Maria Aparecida de Jesus², Rita de Cássia Ferreira Palmeira²,
Basílio Frasco Vianez², Ana Paula Barbosa² (in memoriam)*

*¹ Amazonas Federal University, Manaus, Brazil; ² National Institute for Amazonian Research – INPA,
Department of Forest Products – CPPF, Manaus, AM, Brazil*

4.2. Knowledge of the Potential of Limonene as Agent to Preserve the *Pinus pinaster* Wood

Samira Francês¹, Ofélia Anjos¹, Miguel Pestana² Helena Machado²

*¹ Superior Agrarian School of Castelo Branco, Quinta da Senhora de Mércules, Castelo Branco,
Portugal; ² INRB - National Institute for the Biological Resources, Quinta do Marquês, Oeiras,
Portugal*

4.3. Montan Wax Reduces Boron Leaching from Impregnated Wood

Boštjan Lesar¹, Polona Kralj², Franc Pohleven¹, Miha Humar¹

*¹ University of Ljubljana, Biotechnical Faculty, Department of Wood Science and Technology,
Jamnikarjeva, Ljubljana, Slovenia; ² University of Ljubljana, Faculty of Chemistry and Chemical
Technology, Department of analytical chemistry, Ljubljana, Slovenia*

4.4. Antimicrobial Finishing of Lignocellulosic Non-Wovens

Judyta Walentowska, Ryszard Kozłowski

Institute of Natural Fibres, Poznan, Poland

5. New Process, Products, and Characterisation Methods, or their Improvement

5.1. Effects of Post Thermal-Treatment on Wettability, Surface Roughness, and Adhesive Bonding Performance of Exterior Medium-Density Fiberboard

Nadir Ayrilmis¹, Jerrold E. Winandy² and Theodore L. Laufenberg²

*¹ Department of Wood Mechanics and Technology, Forestry Faculty, Istanbul University, Sariyer,
Istanbul, Turkey; ² USDA Forest Service, Forest Products Laboratory, Madison, WI, USA*

5.2. **Sorption Properties of Laminated Veneer Lumber (LVL) Treated with Various Fire Retardants and Dried at Different Temperatures**

Turker Dundar¹, Nadir Ayrimis¹, Zeki Candan¹, H. Turgut Sahin²

¹ Department of Wood Mechanics and Technology, Faculty of Forestry, Istanbul University, Bahcekoy, Istanbul, Turkey; ² Department of Forest Products Chemistry, Faculty of Forestry, Suleyman Demirel University, Cunur, Isparta, Turkey

5.3. **Technical Viability of Tucumã-i Fibre (*Astrocaryum acaule*) for Production in Textile Industry**

Karla Mazarelo Ferreira Maciel¹, Claudete Catanhede Nascimento², Almir de Souza Pacheco¹, Maria de Jesus Coutinho Varejão²

¹ Amazonas Federal University, Coroado, Manaus, AM, Brazil; ² National Institute for Amazonian Research, Manaus, AM, BRAZIL

5.4. **A New Method for Bulk Measurement of Water Content in Woody Biomass**

Ana Marta Paz

School of Sustainable Development of Society and Technology, Mälardalens University, Västerås, Sweden

6. Wood Modification

6.1. **Influence of ASA Treatments on Bending Properties of Maritime Pine (*Pinus pinaster* Ait.)**

Thibaud Surini¹, Olivier Pignole², Carlos Vaca-Garcia², Patrick Castera¹, Stéphane Grelier¹

¹ INRA, Université Bordeaux 1, CNRS - UMR US2B, Talence, France; ² Laboratoire de Chimie Agro-Industrielle, ENSIACET, Toulouse, France

7. Recycling and Alternative Raw Materials

7.1. **Production of Polyethylene (HDPE) Composites Reinforced with Furniture Industry Wood and Wood Composites Residues**

Éverton Hillig¹, Mara Zeni², Clovis Roberto Haselein³

¹ Forest Engineering Department, State University of West Center, Irati, Paraná, Brazil; ² Chemical Engineering Department, University of Caxias do Sul, Caxias do Sul, Rio Grande do Sul, Brazil;

³ Forest Engineering Department, Federal University of Santa Maria, Santa Maria, Rio Grande do Sul, Brazil

7.2. **Waste Thermoplastics as Raw Material in Particleboard Manufacturing**

Piotr Borysiuk, Mariusz Mamiński, Janusz Zawadzki, Tomasz Zielenkiewicz, Aleksander Zado

Warsaw University of Life Sciences – SGGW, Faculty of Wood Technology, Warsaw, Poland

7.3. **Properties of *Gliricidia* (*Gliricidia sepium*) Wood at Different Ages**

Mohd Helmy Ibrahim, Mohd Nazip Suratman

Faculty of Applied Sciences, Universiti Teknologi MARA, Shah Alam, Malaysia

- 7.4. Viscoelastic Properties of Hybrid-Poplars**
Marie-Pierre Laborie, Isabela Reiniati
Wood Materials and Engineering Laboratory, Washington State University, Pullman, WA, USA
- 7.5. Oriented Strand Board (OSB) from Fast Growing *Leucaena leucocephala* Wood**
W.M Nazri¹, K. Jamaludin¹, S. Rahim², M.Y Nor Yuziah³
¹ *Universiti Teknologi MARA, Jengka, Pahang, Malaysia;* ² *Forest Research Institute Malaysia (FRIM), Kepong, Selangor, Malaysia;* ³ *Malayan Adhesive and Chemical Sdn. Bhd. Shah Alam, Selangor, Malaysia*
- 7.7. Potential and Limitations of *Arundinaria alpina* Bamboo Panel Boards for Structural Applications**
M. N. Lugoye¹, J.V. Tesha¹, C. Nyahumwa¹, S. Karlsson²
¹ *University of Dar es Salaam, P.O. Box 35131, Dar es Salaam Tanzania;* ² *Kungliga Tekniska Högskolan (KTH), S-10044, Stockholm Sweden*
- 7.8. Utilization of Eucalyptus Clones as Substrate for the Cultivation of Edible Mushroom Shiitake**
Meire Cristina Nogueira de Andrade¹, Marli Teixeira de Almeida Minhoni², Diego Cnha Zied², Ceci Sales-Campos¹, Basilio Frasco Vianez¹
¹ *National Institute for Amazon Research –INPA, Department of Forest Products – CPPF, Manaus, AM, Brazil;* ² *Department of Vegetable Production, Universidade Estadual Paulista (UNESP), Fazenda Lageado, Botucatu-SP, Brazil*
- 7.9. Effects of Pressing Parameters on the Flexural Properties of Tannin-Formaldehyde-Bonded Rice Husk Particleboards**
Bwire S. Ndazi
Department of Engineering Materials, University of Dar es Salaam, Dar es Salaam, Tanzania
- 7.10 Composite Materials Based on Lignocelulosic Fibres Used as Nutritive Supports in Seedling Manufacturing**
Petronela Nechita¹, Vasile Epure¹, Elena Dobrin²
¹ *Pulp and Paper Research and Development Institute – CEPROHART, Braila, Romania;* ² *University of Agronomic Sciences and Veterinary Medicine, Dept. of Horticulture, Bucharest, Romania*