

**Final Programme, COST Action E35 - 3rd International Symposium on Wood Machining,
Lausanne May 21 – 23, 2007**

**Conference location : EPFL
Lecture Hall : Polydôme Building (see the plan)**

Monday, May 21, 2007

08:00 – 08:45 Welcome Coffee & Registration

08:45 – 09:00 Conference opening

**Andreas Mortensen, Director of the Institute of Materials, EPFL
Stefanie Stanzl-Tschegg, Chair of COST Action E35**

09:00 Session 1

Chairman Lars Berglund

09:00 – 09:40 Keynote : J. Nairn

Numerical Modeling of Deformation and Fracture of Wood including
Heterogeneity and Anisotropy

09:40 – 10:00 C. Modén, L. Berglund

On the softness of wood

10:00 – 10:20 P. Todorovic, D. Vilotic, Z Djurusic, S. Svrzic, N. Atanackov

On Influence of Species of Conifers on Values of Absorption Coefficient for
Gamma Rays in Wood Tissue

10:20 – 11:40 Coffee Break & Poster Presentations

A. Svagan, M. Azizi Samir, L. Berglund

Biomimetic polysaccharide nanocomposites of high cellulose content

M. Henriksson, Lars A. Berglund

Microfibrillated cellulose films

J. Netrval

Dimensional stabilization of wood by reactive poly (ethylene glycol)-diacrylate cell
wall bulking

H. Sehaquin, A. Svagan

Biomimetic cellulose nanocomposite foams

K. Bytebier, R. Arinero, O. Arnould

Mechanical characterization of wood at the submicrometre scale: a prospective study

11:40 Session 2

Chairman Ingo Burgert

11:40 – 12:00 G. Simm, T. Ters, S. Stanzl-Tschegg

Surface Energy and Wettability of Knots and Surrounding Area

12:00 – 12:20 G. Goli, D. Wyeth, A. Atkins, J. Jeronimidis, M. Fioravanti

Orthogonal cutting of wood at high speed using a modified Split Hopkinson Bar and a
High Speed Camera

12:20 – 12:40 K. Orłowski, A. Atkins

Determination of the cutting power of the sawing process using both preliminary
sawing data and modern fracture mechanics

12:40 – 14:00 Lunch

14:00 Session 3

Chairman Rémy Marchal

14:00 – 14:20 J. Sandak, K. Orłowski, M. Negri

More wood, less chips: an effect of the circular saw's rim speed on the kerf width

14:20 – 14:40 G. Kowaluk, I. Frackowiak, P. Beer, B. Palubicki, W. Szymanski

Comparison of the Tool Wear in Milling of the Particleboards Produced from Wood
and Rape Straw

14:40 – 15:00 **U. Heisel, S. Martynenko, M. Schneider**
Influence of Chip Space Filling on Cutting Forces in High-Speed Milling of Wood and Derived Timber Products

15:00 – 16:20 **Coffee Break & Poster Presentations**

R. Hernández, J. Cool

Evaluation of water and solvent-borne coating performance for three surfacing methods on paper birch wood

I. Fuchs, Ch. Raatz, M. Peter, T. Pflüger

Thermo-mechanical processing of wood and wood-materials and the effect of the surface roughness

D. Loidl, S. Puchegger, N. Gierlinger, W. Beikircher, S. Stanzl-Tschegg

Elastic properties of thermally treated wood at elevated temperatures

P. Navi, F. Girardet, Ph. Vulliemin, M. Spycher, F. Heger

Effects of post-treatment parameters on densified wood set-recovery

J. Sandak, G. Sinn

Evaluation of the fracture area by 3D scanning

L.-E. Denaud, L. Bléron, A. Ratle, R. Marchal

On-line measurement of the average lathe checks frequency of peeled veneers

16:20 **Session 4**

Chairwoman Stefanie Stanzl-Tschegg

16:20 – 17:00 **Keynote : P. Morlier, S. Morel, J.-L. Coureau**

Connections between the r-curve and the cohesive crack properties for quasi-brittle materials like wood

17:00 – 17:20 **M. Sedighi-Gilani, P. Navi**

Mechanism of fracture in heterogeneous microstructure of softwood

17:20 – 17:40 **D. Keunecke, S. Stanzl-Tschegg, P. Niemz**

Mode I fracture parameters and failure characteristics of yew and spruce loaded in the RT and TR crack propagation system by means of a micro wedge splitting test

17:40 – 18:00 **T. Ramanantoandro, F. Eyma, J.-Y. Paris, J. Denape**

Linear measurement of friction parameters on oak pedunculate as related to wood ligneous plane.

Tuesday, May 22, 2007

16:20 **Session 4 (continued)**

Chairwoman Stefanie Stanzl-Tschegg

08:30 – 08:50 **L. Salmén, J. Stevanic, A.-M. Olsson, L.-Å. Hammar**

Properties of the cell wall primary wall layer in relation to fibre separation

08:50 – 09:10 **M. Eder, S. Stanzl-Tschegg, I. Burgert**

In-situ ESEM study on wood cells under tension

09:10 – 09:30 **M. Bergensträhle, L. Berglund, K. Mazeau**

Inherent properties of cellulose.

09:30 – 10:50 **Coffee Break & Poster Presentations**

10:50 **Session 5**

Chairman Anthony Atkins

P. Todorovic, S. Svrzic, D. Vilotic, G. Radosevic, Z. Djurisc, D. Lukacev, M. Furtula

Some Examples of Determinations of Absorption Coefficient for Gamma Rays in Tissue of Some Softwood Species

P. Todorovic, D. Vilotic, Z. Djurisc, S. Svrzic, N. Atanackov, G. Radosevic, D. Lukacev, M. Furtula

Studies of Relationship between Values of Absorption Coefficient for Gamma Rays in Wood Tissue and the Selected Hardwood Species

I. Bjurhager, L. Berglund, S. Bardage

"Green" properties of green materials: tensile strength and Young's modulus of juvenile hybrid aspen (*Populus tremula* x *Populus tremuloides*)

J. Martins, C. Coelho, P.-J. Méausoone, D. Masson, L. Carvalho, C. Costa

A model for predicting the quality of a finished surface from machining conditions

P. Sawosz, W. Szymanski, P. Beer

Scratch a special quality defect of surface and edge of wood and particleboard

T. Astrup, K. Kristensen, J. F. Olesen, S. Svensson

Inverse analysis of cohesive fracture in CT-tests

10:50 – 11:10 **A. Rougie, P.-J. Méausoone, S. Auchet, P. Triboulot**

Cutting analysis of hedge's growth sprouts

11:10 – 11:30 **D. Wyeth, G. Goli, A. Atkins, G. Jeronimidis, M. Fioravanti**

Friction in orthogonal cutting of Douglas fir at varying grain orientations: measurements and consequences

11:30 – 11:50 **H. Aknouche, A. Zerizer, C. Nouveau, Y. Benlatreche**

Study of the wear behaviour of carbide-tipped tools untreated and CRN-treated in the field of the breaking up of the pine of Alep

11:50 – 13:10 **Lunch**

13:10 **Session 6**

Chairman George Jeronimidis

13:10 – 13:50 **Keynote: A. Griner, M. Simonetta**

Italian woodworking machinery industry and safety standardization

13:50 – 14:10 **E. Csanády**

Thermal load in wood cutting tools

14:10 – 14:30 **H. El-Haouzali, R. Marchal, L. Bleron, J.-C. Butaud, F. Cottin**

Peeling of poplar: cultivars and forest stations effects on cutting forces and veneer quality

14:30 – 15:50 **Coffee Break & Poster Presentations**

P. Haller

Manufacturing of wooden profiles by forming

B. Palubicki, K. Olejniczak, G. Kowaluk, J. Hric, P. Beer

The Change of Laminated Particleboard Edge Quality while Sawing with Progressing Teeth Wear

J. Chladil

Tool Accompanying Phenomenons in Wood Machining Processes

E. Csanády, S. Németh, M. Varga

Investigation of clamping on a CNC router

Ch. Kohlhauser, K. Hofstetter, Ch. Hellmich, J. Eberhardsteiner

Determination of orthotropic elastic stiffness tensor components of wood with ultrasonic waves of different frequencies

K. Watanabe, E. Landis

An Acoustic Emission-Based Study of Energy Dissipation in Radially Loaded Spruce

15:50 **Session 7**

Chairman Eric Landis

15:50 – 16:10 **H. Wust, P. Haller, G. Wiedemann**

Experimental study of the effect of a laser beam on the morphology of wood surfaces

16:10 – 16:30 **A. Outahyon, R. Marchal, J.-C. Butaud, R. Collet**

Influence of cutting speed and storage time on Douglas-fir surfaces wettability

16:30 – 16:50 **J. Johansson, D. Sandberg**

Preparation of wood with pulsed UV-laser ablation for characterisation of the wood structure

16:50 – 17:10 **T. Astrup, K. Kristensen, J. Olesen, S. Svensson**

Experimental determination of strain field in CT-specimens during crack propagation

Conference Dinner

Wednesday, May 22, 2007

09:00 **Session 8**

Chairman Peter Niemz

09:00 – 09:20 **K. Hofstetter, Ch. Hellmich, J. Eberhardsteiner**

Mechanical relevance of structural features of wood at different observation scales: investigations based on multistep homogenization

09:20 – 09:40 **J. Ljungdahl, L. Berglund**

Why are the radial properties of archeological Vasa oak reduced compared with recent oak?

09:40 – 10:00 **M. Roohnia, J. Gril, I. Bremaud, N. Manouchehri**

Sound Velocity for Evaluating a Piece of Wood in Acoustical Performances

10:00 – 10:20 **P. Mazzanti, L. Uzielli**

Preliminary analysis of compression set shrinkage on Poplar wood across the grain

10:20 – 11:40 **Coffee Break & Poster Presentations**

11:40 **Session 9**

Chairman Frieder Scholz

P. Niemz, M. Wyss, M. Fuhr

Exploratory analysis of failure behaviour of glued joints at tensile shear loading

F. Scholz, A. Riegel, J. Ratnasingam

Assessment of Sanded Surfaces

J. Honkanen, M. Hughes

Challenges in the Characterization of the Wood Surface: A Simulation Approach

C. Labidi, L.-E. Denaud, C. Nouveau, R. Collet, L. Henry

Effect of the sand-blasting of edge peeling tools on the cutting forces and wear resistance

N. Garrido, J. Martins, L. Carvalho, J. Mendes, C. Costa

Influence of the sawing conditions on particleboard edge quality

11:40 – 12:00 **P. Simon, D. Fozao, H. Maigre, D. Eyheramendy, J.-F. Jullien, E. Vidal-Salle, F. Morestin**

Study of the transverse structure of wood at different scales and consequences on the fracture modes

12:00 – 12:20 **P. Czarniak, J. Wilkowski, J. Górski**

Influence of tool wear on vibration and noise signals for variable feed and rotation spindle speed

12:20 – 12:40 **A. Hemmasi**

Prediction of Orthogonal Parallel Cutting Force of Sugar Maple in Saturated and Dry Moisture Content

12:40 – 14:00 **Lunch**

14:00 – 15:00 **WG Meetings** will be held at the IMX (Institute of Materials) at EPFL

WG1 : Room MXD 118

WG2 : Room MXG 237

WG3 : Room MXG 337

15:00 – 15:30 **Coffee break**

15:30 – 17:30 **MC- Meeting & Evaluation** : Polydôme Building (see the plan)