

Technical Sessions Program

Monday, August 27

- 8-8:45 Application of Wood Drying Simulation Models in Industrial Lumber Manufacturing
Mark A. Stanish
- Session I Physics of Drying. Moderator: M. Milota
- 8:45-9:30 Wood Material Behavior During Drying: Moisture Dependent Tensile Stiffness and Strength of Radiata Pine at 70-150 C
C. Lenth, R. Sargent
- 9:30-10:15 The Dynamic of Shrinkage/Moisture Content Behavior Determined During the Drying of Micro-Samples
G. Almeida, C. Assor, P. Perre
- 10:15-10:30 Coffee Break
- 10:30-11:15 Determination of Fiber Saturation Point as Function of Temperature for Seven Different Wood Species
I. Marinescu, M. Campean
- 11:15-12:00 Features of Convective Drying of Thick Sliced Veneer
N. Skuratov
- 12:00-13:00 Lunch
- Session II Physics of Drying II. Moderator: Mihaela Campean
- 13:00-13:45 Specific Gravity and Equilibrium of Moisture Content Changes in Heat Treated Fir (*Abies nordmanniana* subsp. *bornmülleriana* Mattf.) Wood
G. Gündüz, P. Niemz, D. Aydemir
- 13:45-14:30 Full-Field Optical Measurement of Deformations in Early Stages of Drying Oregon White Oak and Western Hemlock Lumber
H. Kang, L. Muszynski, M. Milota
- 14:30-15:15 Drying Stress Development Patterns in Restrained Wood
C. Lazarescu, S. Avramidis
- 15:15-15:30 Coffee Break
- 15:30-16:15 A Sensor for the Direct Measurement of Internal Stress in Wood During Drying: Experimental Tests Towards the Industrial Application.
O. Allegretti, S. Ferrari, L. Travan.

16:15-17:00 Rheological Properties of Spruce Wood in High Temperature Environment
R. Lagana, M. Babiak

17:00-18:00 Social Hour Sponsored by the Nyle Corporation

18:00 Dinner

Wednesday, August 29

Session III Modeling Heat and Mass Transfer. Moderator: Mark Stanish

8-8:45 A Percolation Approach to the Free Water Drying Process
Jari-Gunnar Salin

8:45-9:30 A Method for Studying Dynamic Sorption Behavior of Small Wood Samples
S. Riley, G. Emms, R. Sargent, L. Schottle

9:30-10:15 Simulation of Drying Using a Kiln Model
A. Berverović, M. R. Milota

10:15-10:30 Coffee Break

Session IV Applied Drying Session I. Moderator: Bob Little

10:30-11:15 Effects of Press Pressure and Temperature on the Moisture Content, Vertical
Density Profile and Janka Hardness of Pine Wood Panels
O. Unsal, Z. Candan

11:15-12:00 Research and Application of Heat-Treatment of Solid Wood Flooring
G. Lianbai, L. Tao, T. Dengyun, J. Ning

12:00-13:00 Lunch

13:00-13:45 Drying of Beech Wood in Different Conditions and Clime
A. Bajraktari

13:45-14:30 Study Concerning the Possibility of Removing Water from Wood Through
Freezing-Defreezing Cycles
M. Campean

14:30-14:45 Coffee Break

14:45-15:30 Development of Moisture Meter Correction Factors for Use with Preservative
Treated Wood.
W B. Smith, H. Yeo, B. Morey, C. Stark, C. Tascioglu, P. Schneider, D.
Herdman, M. Freeman.

- 15:30-16:15 Microwave Moisture Measurement System for Lumber Drying
W. Moschler, G. Hanson
- 16:15-18:00 Poster Session II Social Hour sponsored by USNR/Irvington Moore
- 18:00 Dinner

Thursday, August 30

- Session V Energy and Environmental Aspects. Moderator: Lianbai Gu
- 8:30-9:15 Environmentally Friendly Temporary Anti-Mould Treatment of Packaging Material Before Drying
J. Welling, G. Lambertz
- 9:15-10:00 Strategies to Reduce Energy Consumption in Kiln Lumber Drying
D. Elustondo, L. Oliveira
- 10:00-10:15 Coffee Break
- 10:15-11:00 Energy Saving in the Timber Industry
H. Horn
- 11:00-11:45 Comparative DOC Estimates From The Heartwood And Sapwood Of Five Hardwoods
R. W. Rice, M. Susan Erich
- 12:00-13:00 Lunch
- Session VI Applied Drying Studies II. Moderator: Bill Smith
- 13:00-13:45 Potential of High Frequency Heating for On Line Drying of Norway Spruce
P. Perre, R. Remond
- 13:45-14:30 High Temperature Drying of Spruce & Pine
L. Cai, L. Oliveira
- 14:30-14:45 Coffee Break
- 14:45-15:30 Moisture Sorption and its Dynamics in Commercial, Kiln Dried Softwood Boards
P. Gjerdrum
- 15:30-16:15 Kiln Drying Properties of Red-bud Maple (*Acer trautvetteri* Medw.) Lumber
S. Korkut, B. Guller, M. Budakci
- 16:15-16:30 Adjourn
- 17:00++++ Beer and Pizza

Poster Sessions

Poster Session I - Sunday August 26

Sponsored by Delmhorst Instrument Company, Boonton, NJ

Environmental Impact of Producing Hardwood Lumber Using Life-Cycle Inventory

R. D. Bergman, S. A. Bowe

Quality Management System Applied to Timber Drying

G. Budau, M. Campean

Color Changes of Birch Wood During High Temperature Drying

V. Mottonen, T. Karki

Non-destructive Measurement of Moisture Content in Wood During Drying Using Digital X-ray Microscope

K. Watanabe, S. Shida

The New England Kiln Drying Association

Bill Smith and Peter Garrahan.

Numerical and Experimental Study of Microwave Drying of White Oak (*Quercus Alba*)

D. Jia, M. T. Afzal

Poster Session II - Wednesday, August 29

Sponsored by USNR/Irvington Moore, Jacksonville, FL

A New Technique to Determine the 3rd Elasticity Tensor of Wood as Applied to Drying Stress Modeling

A. Laghdir, Y. Fortin, M. Sánchez, R. Hernández

Modeling of Water Distribution in Wood During Drying Using the Second Order Boundary Conditions

R. Lagana, M. Babiak

Drying Strategies Able to Reduce the Stress Level of a Stack of Boards as Defined by a Comprehensive Dual Scale Model

R. Remond, P. Perre

Drying Kinetics of Reaction Woods; Compression Wood in *Picea abies* and Tension Wood in *Fagus sylvatica*

A. Tarmian, R. Remond, F. Huber, P. Perre