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Research Keywords

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ecosystems plant physiology

ecology wood technology





Dr. Stavros Avramidis

Professor

Research Interests: wood physics and drying

Contact Info

Teaching and Research

<u>Publications</u>

Department of Wood Science

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Research Areas:

- Wood-water relations and sorption thermodynamics
- Momentum, heat and mass transfer in wood
- Modeling steady-state and dynamic non-isothermal diffusion in wood
- Application of fractals and artificial neural networks to wood properties modeling.
- Modeling drying stresses in wood and their effect on quality
- Industrial wood kiln drying optimization and development of new drying strategies
- Radio frequency vacuum (RFV) heating and drying of wood and wood products

Research Areas

Wood physics Wood drying Non-destructive evaluation Wood and energy

Projects

 $\label{lem:model} \mbox{Modeling of wood thermo-sorptive behavior with artificial neural networks.}$

Development of timber drying quality prediction models.

Modeling drying stresses in timbers and logs.

Development of new methods to increase wood permeability.

Evaluation of post-drying treatments on timber quality.

RFV drying and heating of wood and wood products.

RF phytosanitation of wood

http://www.forestry.ubc.ca/2013/06/tune-in-to-clean-wood/

NDE evaluation of wet-pockets in hemlock using NIR technology

Superheated steam drying of western hemlock

Unit Associations

Centre for Advanced Wood Processing CAWP

Professional Affiliations

American Society for Testing and Materials ASTM

Fellow International Academy of Wood Science IAWS

Fellow, The Institute of Materials, Minerals and Mines

Forest Products Society FPS

International Association of Wood Anatomists

Registered Professional Forester (EU)

Society of Wood Science and Technology

Current Graduate Students

Mr. Mahdi Shahverdi, PhD

Wood drying modeling

Ms. Jingbo Shi, PhD

Modeling sorption hysteresis

Current Courses

Summer 2013

No WOOD course(s) were found for S2013 term. Summer 2013

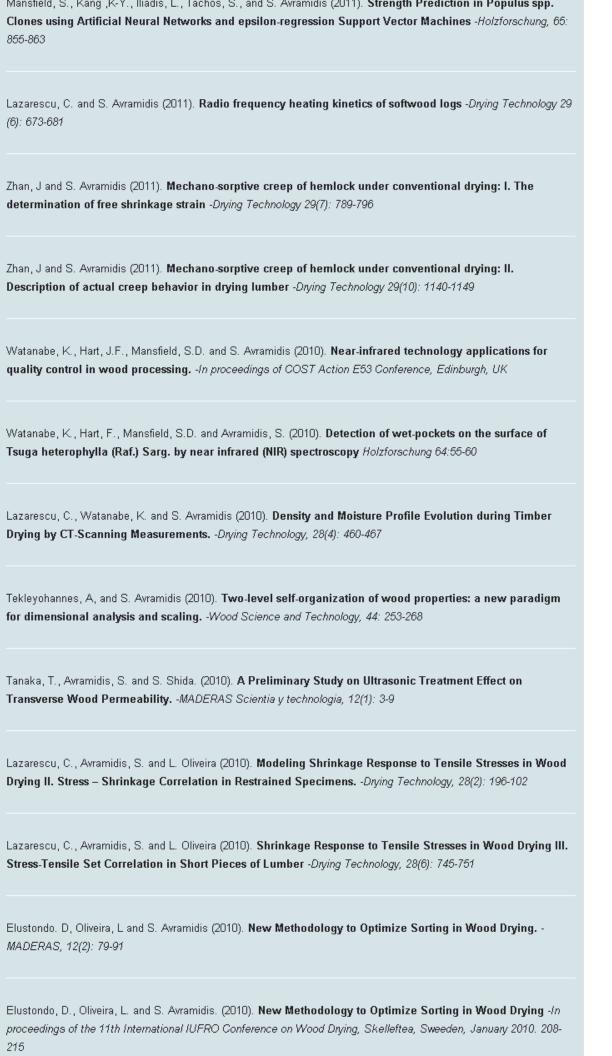
No WOOD course(s) were found for S2013 term. Summer 2013

No FRST course(s) were found for S2013 term.

Selected Publications

lliadis, L., Tachos, S., Avramidis, S., Mansfield, S.D. (2013). Hybrid e-Regression and validation soft computing techniques: the case of wood dielectric loss factor. Neurocomputing. 107:33-39.





Lazarescu, C., Avramidis, S. and L. Oliveira. (2010). **Shrinkage response to tensile stresses during hemlock** (Tsuga heterophylla) drying -In proceedings of the 11th International IUFRO Conference on Wood Drying, Skelleftea, Sweeden, January 2010, 122-130.

Watanabe, K., Son, E., Lazarescu, C., Breuil, C. and S. Avramidis (2010). **Radio Frequency Heating for Green Wood Phytosanitation** -In proceedings of the 11th International IUFRO Conference on Wood Drying, Skelleftea, Sweeden, January 2010, 307-312.

Tanaka, T. Avramidis, S., Shida, S (2009). **Evaluation of Moisture Content Distribution in Wood by Soft X-ray Imaging** *-Wood Science Journal*, *55*: *69-73*.

Lazarescu, C., Plattner, A., Hart, F., Breuil, C., and S. Avramidis (2009). **Pasteurization of Hemlock by Radio Frequency Heating: a preliminary study** *-Forest Products Journal, 59*(*4*):79-83

Elustondo, D., Avramidis, S. and R. H. Keery (2009). **RFV drying schedule development for western red cedar timbers** - *Journal of the Institute of Wood Science*, 18(2):68-74.

Lazarescu, C. and S. Avramidis (2008). **Drying Related Strain Development in Restrained Wood** -Drying Technology, 26(5): 544-551

Watanabe, K., Saito, Y., Avramidis, S. and S Shida (2008). **Non-destructive measurement of moisture distribution in wood during drying using digital X-ray microscopy** *-Drying Technology, 26(5): 590-595*

Rayirath, P., Avramidis, A., Mansfield, S. D. (2008). **The effect of wood drying on crystallinity and microfibril angle in black spruce (Picea mariana)** *Journal of Wood Chemistry and Technology.* 28: 167-179.

Rayirath, P., Avramidis, S. (2008). **Some aspects of western hemlock air permeability** *-MADERAS: Ciencia y Technologia, 10(3): 185-193*

Hart, F., Avramidis, S. and S.D. Mansfield (2008). **Detection of Wet-pockets in Hemlock Using Near Infrared Spectroscopy** -In proceedings, COST E53 Conference, Delft, Holland, 28-31 October, 105-113

Lazarescu, C., and S. Avramidis (2007). Evaluation of Hygrothermal Shrinkage Strain in Tsuga heterophylla.

Lazarescu, C. and S. Avramidis (2007). **Drying stress development paterns in restarined wood** -IUFRO Wood Drying Conference, Bangor, Maine, 44-49.



Avramidis, S., Shida, S., Koumoutsakos, A. and D. Kobayashi (2005). **Stability study of square timbers in simulated house frame service in Japan** - *Forest Products Journal, 55(10): 84-91.*

Papadopoulos, A., Avramidis, S. and D. Elustondo. (2005). **The sorption of water vapour by chemically modified softwood: analysis using various sorption models.** *-Holz als Roh- und Werkstoff, 39*: 99-112

Avramidis, S. and L. Iliadis (2005). **Wood-Water Sorption Isotherm Prediction with Artificial Neural Networks: a preliminary study.** *-Holzforschung,* 59: 336 – 341

Avramidis, S. and B. Hao (2005). **Industrial scale moisture class assessment of Pacific coast hemlock kild drying.** *-UBC-Wood Science report to the Coastal Forest and Lumber Association and the ZAIRAI Lumber Partnership, Vancouver, BC. 25pp.*

Elustondo, S., Avramidis, S. and L. Oliveira. (2005). **Industrial evaluation of re-dry strategy for softwood lumber.**-MADERAS: Ciencia y Technologia, 7(2):65-78.

Parfit, L.J., Hartley, I.D. and S. Avramidis (2005). **Acoustic constant property of interior spruce (Picea spp.) from the central interior of British Columbia** *-Forest Products Journal, 55*(9):74-76

Avramidis, S. and L. Iliadis (2005). **Predicting wood thermal conductivity using Artificial Neural Networks.** - Wood and Fiber Science, 37(4): 682-690.

Avramidis, S., Shida, S., Koumoutsakos, A. and D. Kobayashi (2005). **Stability study of square timbers in simulated house frame service in Japan.** - Forest Products Journal, 55(10): 84-91

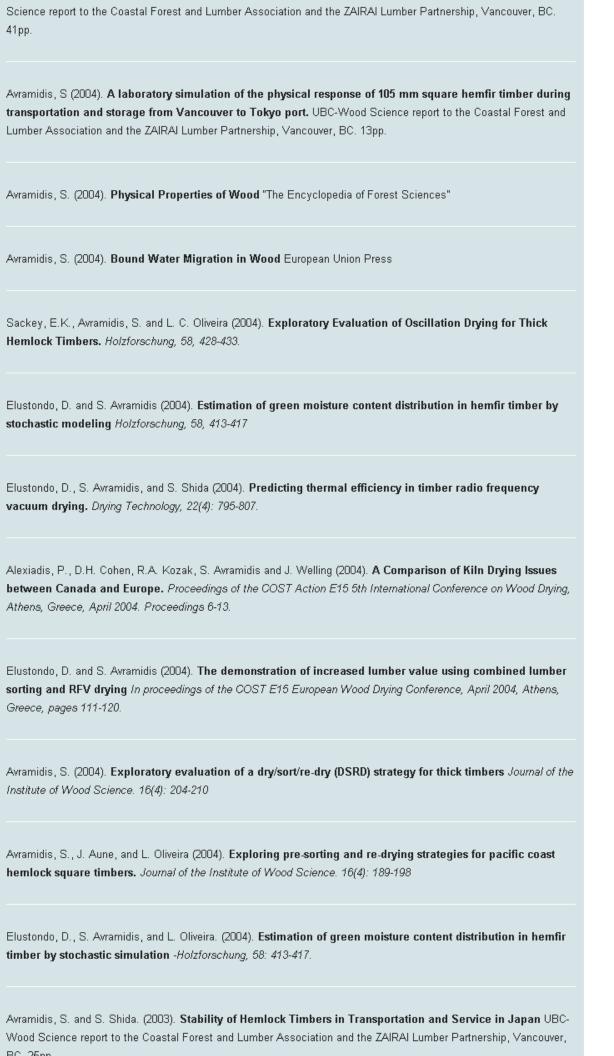
Avramidis, S. and Mansfield, S. D. (2005). **On Some Physical Properties of Six Aspen Clones.** *Holzforschung. 59* (1):54-58

Elustondo, D. and S. Avramidis (2005). **Comparative analysis of three methods for stochastic lumber drying simulation.** *-Drying Technology, 23(1&2): 131-142.*

Shida, S., Ikeda, T. and S. Avramidis (2005). **Surface checking in air-drying of boxed-heart softwood in Japan.** - Forest Product Journal, 55(1): 67-71.

Elustondo, D., Avramidis, S. and R. L. Zwick (2005). **The demonstration of increased fiber utilization using optimized lumber sorting and radio frequency vacuum drying.** *-Forest Products Journal, 55(1): 76-83.*

Avramidis, S. and B. Hao (2004). Pacific coast hemlock stability and moisture class assessment UBC-Wood



вс. 23рр.
Avramidis, S. and B. Hao (2003). AUTOMATED LUMBER SORTING FOR STABILITY (ALSOS): Effect of Slope of Grain and Annual Ring Orientation on the Drying Characteristics of Hemlock Baby Squares UBC-Wood Science report to the Coastal Forest and Lumber Association and the ZAIRAI Lumber Partnership, Vancouver, BC. 27pp.
Elustondo, D. and S. Avramidis (2003). Simulated comparative analysis of sorting strategies for RFV drying. Wood and Fiber Science, 35(1): 49-55
Elustondo, D., Koumoutsakos, A. and S. Avramidis (2003). Non-deterministic description of wood drying: stochastic dispersion of data in radio frequency vacuum drying. <i>Holzforschung, 57(1): 88-94</i>
Elustondo, D., Oliveira, L. and S. Avramidis (2003). Evaluation of three semi-empirical superheated steam timber drying models. <i>Drying Technology, 21(5): 875-893.</i>
Wallace, J.W., Hartley, I.D. and S. Avramidis (2003). Conventional kiln drying and equalization of western hemlock to Japanese equilibrium moisture content. <i>Holz als Roh- und Werkstoff, 61: 257-263.</i>
Koumoutsakos, A, Avramidis, S. and S. Hatzikiriakos (2003). Radio frequency vacuum drying. Part III. Two-dimensional model, optimization and validation. <i>Drying Technology, 21(8): 1399-1410.</i>
Hao, B. and S. Avramidis (2003). Wood sorption fractality in the hygroscopic range. Part 2. New model development and validation. <i>Wood and Fiber Science, 35(4): 601-608.</i>
Garcia, P., Avramidis, S. and F. Lam (2003). Horizontal gas pressure and temperature distribution responses to OSB flake alignment during hot-pressing. <i>Holz als Roh- und Werkstoff, 61(6): 425-431</i>
Elustondo, D. and S. Avramidis (2003). Stochastic numerical model for conventional kiln drying of timbers. Japanese Journal of Wood Science, 49(6): 485-492.
Koumoutsakos, A. and S. Avramidis (2002). Mass transfer characteristics of western hemlock and western red cedar <i>Holzforschung</i> , <i>53</i> (2):185-190
Avramidis, S. (2002). Stability response of square timbers: a laboratory simulation of shipping and storage Journal of the Institute of Wood Science, 16(1): 36-43
Hartley, I. and S. Avramidis (2002). Sorption hysteresis of western Canadian softwood species Journal of the Institute of Wood Science, 16(1): 63-64

Elustondo, D. and S. Avramidis (2002). **Stochastic numerical model for radio frequency vacuum drying of timbers** *Drying Technology, 20*(9): 1827-1842

Koumoutsakos, A., Avramidis, S. and S.G. Hatzikiriakos (2002). **Fundamental phenomena in wood RFV drying with 50-ohm amplifier technology** *MADERAS: Ciencia y Technologia, 4(1): 15-25*

García, P.J., Avramidis, S. and F. Lam (2002). **A regression model for horizontal temperature and gas pressure distributions.** *In Proceedings of the 6th Pacific Rim Bio-based Composites Symposium, Portland, OR*

Garcia, P., Avramidis, S. and F. Lam (2002). **Three-Dimensional Heat and Mass Transfer During Oriented-Strandboard Hot-Pressing.** *In Proceedings of the 6th Pacific Rim Bio-based Composites Symposium, Portland, OR,* 268 – 277.

Zwick, R.L., Dergousoff, T. and S. Avramidis (2002). **Design considerations of a commercial Q-Sift installation for re-drying hemlock lumber.** *52nd annual meeting of the Western dry Kiln Association, Reno, Nevada, USA, 58-64.*

Elustondo, D. and S. Avramidis (2002). **Modeling a timber dry/sort/re-dry strategy using combined conventional and dielectric technologies** *In Proceedings "Wood Drying"* -, COST E15 Conference on Wood Drying, Santiago de Compostela, Spain, 138-148.

Zwick, R.L., and S. Avramidis (2002). **Commercial RFAV kiln drying – recent successes.** In Proceedings of the 51st annual meeting of the Western Dry Kiln Association, Reno, Nevada, USA, 36-44.

Avramidis, S (2001). **Evaluation of conventional and radio frequency vacuum drying and re-drying of pacific coast hemlock hashira and hirakaku timbers. (CARP-2)** UBC-Wood Science report to the Coastal Forest and Lumber Association and the ZAIRAI Lumber Partnership, Vancouver, BC. 42pp.

Fang, F., J.N.R. Ruddick and S.A. Avramidis. (2001). **Application of radio frequency heating to utility poles. Part 1. RF/V drying of round wood.** *Forest Products Journal, 51(7/8):6-60.*

Fang, F., J.N.R. Ruddick and S. Avramidis. (2001). **Application of radio frequency heating to utility poles. Part 2. Accelerated fixation of chromated copper arsenate.** *Forest Products Journal, 51*(9):53-58.

Fang, F., J.N.R. Ruddick and S. Avramidis. (2001). **Application of radio frequency heating to utility poles. Part**3. The use of RF heating to eradicate decay fungi in pole material. *Forest Products Journal*, 51(11/12):51-55.

Stavros AVRAMIDIS (2001). **Q-sift – a novel processing approach to meet the end-user's requirements for wood moisture content.** "Advances in Wood Drying", COST-E15 annual conference, Helsinki, Finland. pp. 94-103.

Koumoutsakos, A., S. Avramidis and S. Hatzikiriakos. (2001). Radio frequency vacuum drying. Part I.

Theoretical model. Drying Technol. 19(1-2):67-86.

Koumoutsakos, A., S. Avramidis and S. Hatzikiriakos. (2001). Radio frequency vacuum drying. Part II.

Experimental model evaluation. Drying Technol. 19(1-2):87-97.

Garcia, P., S. Avramidis and F. Lam. (2001). Internal temperature and pressue responses to flake alignment during hot-pressing. Holz als und Werstoff. 59:272-275.

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