



Jerrold Everett Winandy, Principal Partner & CTO

Winandy & Associates LLC

960 157th Ave.. NE

Ham Lake, MN 55304 USA

<http://www.winandyassociates.com/>

608-234-8060 (Cell)

email=jerroldwinandy@gmail.com

<http://bbe.umn.edu/adjunct-faculty/jerroldwinandy>

Engineered Composites

List of Publications:

- C1. Winandy JE, Morrell JJ. 2017. Improving the utility, performance and durability of wood- and bio-based composites. *Annals of Forest Science*. 74(1):Article-25. 11pg. doi:10.1007/s13595-017-0625-2. <https://medcraveonline.com/FREIJ/FREIJ-02-00027.pdf>
- C2. Basta AH, El-Saied H, Winandy JE. 2017. Chapter 7: Comparative evaluation of rice bran- and corn starch-modified urea formaldehyde adhesives on improvements of environmental performance of agro-based composites. IN: *Bio-based Wood Adhesives: Preparation, Characterization, and Testing*. Ed: He Z, CRC Press/Taylor & Francis, 326p. ISBN 9781498740746. Pg179-196.
- C3. Sabo, R., Basta, A.H., Winandy, J.E. 2013. Integrated study of the potential application of remediated CCA-treated Spruce Wood to MDF production. *Ind. Eng. Chem. Res*. 52:8962-8968. (refereed). http://www.fpl.fs.fed.us/documnts/pdf2013/fpl_2013_sabo002.pdf
- C4. Li, X., Cai, Z., Horn, E., Winandy, J.E., 2011. Effect of oxalic acid pretreatment of wood chips on manufacturing medium-density fiberboard. *Holzforschung* 65:737-741. (refereed). http://www.fpl.fs.fed.us/documnts/pdf2011/fpl_2011_li005.pdf
- C5. Li, X., Cai, Z., Horn, E., Winandy, J.E., 2011. Oxalic acid pretreatment of rice straw particles and loblolly pine chips: Release of hemicellulosic carbohydrates. *Tappi Journal*, May 2011 pp. 41-45.(refereed). http://www.fpl.fs.fed.us/documnts/pdf2011/fpl_2011_li004.pdf
- C6. Li, X., Cai, Z., Winandy, J.E., Basta, A. 2010. Effect of oxalic acid and steam pretreatment on the primary properties of UF-bonded rice straw particleboards. *Industrial Crops and Products* 33(2011):665-669. (refereed). http://www.fpl.fs.fed.us/documnts/pdf2011/fpl_2011_li002.pdf
- C7. Basta, A.H., El-Saied, H., Winandy, J.E., Sabo, R. 2011. Preformed amide-containing biopolymer for improving the environmental performance of synthesized urea-formaldehyde in agro-fiber composites. *J. Polymers and the Environment* (2011) 19:405-412. (refereed). DOI 10.1007/s10924-011-0286-4. http://www.fpl.fs.fed.us/documnts/pdf2011/fpl_2011_basta001.pdf

- C8. Moya, L., Tze, W.T.Z., Winandy, J.E. 2010. Predicting bending strength of randomly oriented hybrid panels. *Wood and Fiber Science* 42(4):536-549. (refereed).
http://www.fpl.fs.fed.us/documnts/pdf2010/fpl_2010_moya001.pdf
- C9. Li, X., Cai, Z., Winandy, J.E., Basta, A. 2010. Selected properties of particleboard panels manufactured for rice straws of different geometries. *Bioresource Technology* 101 (2010) pg 4662-4666. (refereed). http://www.fpl.fs.fed.us/documnts/pdf2010/fpl_2010_li003.pdf
- C10. Moya, L., Tze, W.T.Z., Winandy, J.E. 2009. The effect of cyclic relative humidity changes on moisture content and thickness swelling behavior of oriented strandboards. *Wood and Fiber Science* 41(4):447-460. (refereed).
http://www.fpl.fs.fed.us/documnts/pdf2009/fpl_2009_moya001.pdf
- C11. Ayrilmis, N., Laufenberg, T.L., Winandy, J. E. 2009. Dimensional stability and creep behavior of heat-treated exterior medium density fiberboard. *Eur. J. Wood Prod.* 67:287-295. DOI 10.1007/s00107-009-0311-7. Springer-Verlag. (refereed).
http://www.fpl.fs.fed.us/documnts/pdf2009/fpl_2009_ayrilmis002.pdf
- C12. Ayrilmis, N., Winandy, J. E. 2009. Effects of post heat-treatments on surface characteristics and adhesive bonding performance of medium density fiberboard. *Materials and Manufacturing Processes* 24:594-599. (refereed).
http://www.fpl.fs.fed.us/documnts/pdf2009/fpl_2009_ayrilmis001.pdf
- C13. Cai, Z., Birkeland, M., Wescott, J.M., O'Dell, J., and Winandy, J.E. 2009. Effects of press sizes on internal steam pressure during particleboard hot-pressing process. *Forest Prod. J.* 59(4):40-44. (refereed).
http://www.fpl.fs.fed.us/documnts/pdf2009/fpl_2009_cai001.pdf
- C14. Winandy, J.E.; Stark, N.M.; Horn, E. 2008. Wood-plastic composites using thermomechanical pulp made from oxalic-acid-pretreated red pine chips. In: *Proceedings of the 7th Global WPC and Natural Fibre Composites Congress; 2008, June 18-19; University of Kassel, Germany: A16-1-A16-7.*
http://www.fpl.fs.fed.us/documnts/pdf2008/fpl_2008_winandy002.pdf
- C15. Sabo, R., Clausen, C.A., Winandy, J.E., Basta, A. 2008. Remediation and recycling of WBP-treated lumber for use as flakeboard. *Proc. American Wood Protection Association.* Vol. 104. (In-Press). AWPB Birmingham, AL.
http://www.fpl.fs.fed.us/documnts/pdf2008/fpl_2008_sabo002.pdf)
- C16. Williams, R.S, Winandy, J.E. 2008. Effect of flakeboard manufacturing variables on composite properties: Part 1. Effect of resin content, wax content, pressing conditions, and edge treatments on paint performance. *Proc. American Wood Protection Association.* Vol. 104:146-160. AWPB Birmingham, AL.
http://www.fpl.fs.fed.us/documnts/pdf2008/fpl_2008_williams001.pdf)
- C17. Winandy, Jerrold E.; Krzysik, Andrzej M. 2007. Thermal degradation of wood fibers during hot-pressing of MDF composites: Part I. Relative effects and benefits of thermal exposure. *Wood and Fiber Science.* 39(3): 450-461. (refereed).
http://www.fpl.fs.fed.us/documnts/pdf2007/fpl_2007_winandy002.pdf
- C18. Winandy, Jerrold E.; Smith, W. Ramsay. 2007. Enhancing composite durability: Using thermal treatments. *Forest Products Society, Publication No. 7229 ISBN 1-892529-48-3.* pg195-199. http://www.fpl.fs.fed.us/documnts/pdf2007/fpl_2007_winandy001.pdf
- C19. Hughes, Mark; Winandy, Jerrold E. 2007. Issues related to durability and protection affecting the acceptance and use of engineered wood composites in Europe. *Forest Products Society, Publication No. 7229 ISBN 1-892529-48-3.* pg. 173-178.
http://www.fpl.fs.fed.us/documnts/pdf2007/fpl_2007_hughes001.pdf

- C20. Ayırlmis, N., Korkut, S., Tanrıtanır, E., Winandy, J.E., Hiziroglu, S. 2007. Effect of various fire retardants on plate shear and five-point flexural shear strength of plywood. *Forest Products Journal* 57(4):44-49.
http://www.fpl.fs.fed.us/documnts/pdf2007/fpl_2007_ayrilmis001.pdf
- C21. Winandy, J.E. 2006. Thermal load histories for North American roof assemblies using various cladding materials including wood-thermoplastic composite shingles. In: *Proceedings of the 6th global wood and natural fibre composites symposium*; 2006 April 5-6; Kassel, Germany. Kassel, Germany: B13-1-B13-8.
http://www.fpl.fs.fed.us/documnts/pdf2006/fpl_2006_winandy001.pdf
- C22. Ayırlmis, N., Korkut, S., Tanrıtanır, E., Winandy, J.E., Hiziroglu, S. 2006. Effect of various fire retardants on surface roughness of plywood. *Building and Environment* 41 (2006):887-892. http://www.fpl.fs.fed.us/documnts/pdf2006/fpl_2006_ayrilmis001.pdf
- C23. Winandy, J. E., Hunt, J.F., Turk, C., Anderson, J.R. 2006. Emergency housing systems for three-dimensional engineered fiberboard: Temporary building systems for lightweight, portable, easy-to-assemble, reusable, recyclable, and biodegradable structures. General Technical Report FPL-GTR-166. Madison, WI: United States Department of Agriculture, Forest Service, Forest Products Laboratory: 10p.
http://www.fpl.fs.fed.us/documnts/fplgtr/fpl_gtr166.pdf
- C24. Cai, Z., Muehl, J. H., Winandy, J.E. 2006. Effects of panel density and mat moisture content on processing medium density fiberboard. *Forest Products Journal* 56(10):20-25. http://www.fpl.fs.fed.us/documnts/pdf2005/fpl_2005_wang003.pdf
- C25. Cai, Zhiyong; Wescott, James M.; Winandy, Jerrold E. 2006. Strandboard made from soy-based adhesive with high soy content. In: *Proceedings of Wood Adhesives*. 2005 November 2-4; San Diego, California: Forest Products Society Proceedings No. 7230: 531-537. http://www.fpl.fs.fed.us/documnts/pdf2006/fpl_2006_cai006.pdf
- C26. Cai, Zhiyong; Muehl, James H.; Winandy, Jerrold E. 2006. Effects of pressing schedule on formation of vertical density profile for MDF panels. IN: *Proc. of International Wood Composites Symposium*. Washington State University.
http://www.fpl.fs.fed.us/documnts/pdf2006/fpl_2006_cai003.pdf
- C27. Winandy, J.E., Wellwood, R.W., Hiziroglu, S. 2005. *Using wood composites as a tool for sustainable forestry*: Proceedings of Scientific Session 90, XXII IUFRO World Congress. Gen. Tech. Rep. FPL-GTR-163. Madison, WI: U.S. Department of Agriculture, Forest Service, Forest Products Laboratory. 91 pg.
https://www.fpl.fs.fed.us/documnts/fplgtr/fpl_gtr163.pdf
- C28. Ayırlmis, Nadir; Kartal, S. Nami; Laufenberg, Theodore L.; Winandy, Jerrold E.; White, Robert H. 2005. Physical and mechanical properties and fire, decay, and termite resistance of treated oriented strandboard. *Forest Products Journal* 55(5): 74-81.
http://www.fpl.fs.fed.us/documnts/pdf2005/fpl_2005_ayrilmis001.pdf
- C29. Winandy, J.E.; Stark, N.M.; Clemons, C.M. 2004. Considerations in recycling of wood-plastic composites. In: *Proceedings of the 5th global wood and natural fibre composites symposium*; 2004 April 27-28; Kassel, Germany. Kassel, Germany: A6-1-A6-9. http://www.fpl.fs.fed.us/documnts/pdf2004/fpl_2004_winandy001.pdf
- C30. Winandy, Jerrold E.; Kamke, Frederick A. 2004. Fundamentals of composite processing: proceedings of a workshop. General Technical Report FPL-GTR-149. Madison, WI: United States Department of Agriculture, Forest Service, Forest Products Laboratory: 118 p. http://www.fpl.fs.fed.us/documnts/fplgtr/fpl_gtr149.pdf
- C31. Hunt, John F.; Winandy, Jerrold E. 2003. 3D Engineered Fiberboard: Engineering Analysis of an Innovative New Building Product. In: *Proceedings of the 2nd Eco-*

- Composites Conference, Paper 8.02. European Society for Composite Materials. London UK, 1-2 Sept 2003. <http://www.fpl.fs.fed.us/documnts/pdf2003/hunt03a.pdf>
- C32. Hunt, John F.; Winandy, Jerrold E. 2003, Lam I-joists: A New Structural Building Product From Small-diameter, Fire-prone Timber. USDA Forest Service Forest Products Laboratory, Res. Note FPL-RN-0291
<http://www.fpl.fs.fed.us/documnts/fplrn/fplrn291.pdf>
- C33. Hunt, J.F., Winandy, J.E. 2002. 3D Engineered Fiberboard: A new structural product. Proc. of 6th European Panel Products Symposium. Held Oct 8-11, 2002. University of Wales, Bangor-Gwynedd, Wales. October 2002. Pg. 106-117.
<http://www.fpl.fs.fed.us/documnts/pdf2002/hunt02a.pdf>
- C34. Winandy, J. E. 2002. Emerging Materials: What will durable materials look like in 2020. Proc. of the Forest Products Society Conference on “Enhancing the durability of lumber and engineered wood products”. Held in Kissimmee, FL on February 11-13, 2002. Forest Products Society Publ No. 7249. September 2002. pg. 13-18.
<http://www.fpl.fs.fed.us/documnts/pdf2002/winan02c.pdf>
- C35. Hunt, J.F., Winandy, J.E. 2002. Using wood-based structural products as forest management tools to improve forest health, sustainability and reduce forest fuel: A research program of the USDA Forest Service under the National Fire Plan. Proc. of the 6th Pacific Rim Bio-based Composites Symposium. Held Nov 10-13, 2002. Portland OR. Vol. 1: 316-322. <http://www.fpl.fs.fed.us/documnts/pdf2002/hunt02c.pdf>