

Curriculum vitae

WILLIAM TAI YIN TZE

University of Minnesota, Department of Bioproducts and Biosystems Engineering
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EDUCATION

Ph.D. Forest Resources (Wood Science) University of Maine, Orono, Aug. 2003
Dissertation: The effects of fiber/matrix interactions on the interfacial deformation micromechanics of cellulose-fiber/polymer composites

Advanced Certificate in Pulp and Paper Management University of Maine, Orono, Aug. 1999

M. S. Forestry (Wood Science) Michigan Technological University, Houghton, Aug. 1998
Thesis: The effects of swelling treatments on the surface chemistry of recycled wood pulp fibers

B. Forestry Sc. (Wood Industry) Universiti Putra Malaysia (UPM; previously Universiti Pertanian Malaysia) Aug. 1992
Thesis: A soda-anthraquinone pulping of sago palm (*Metroxylon sagu* Rottboel) fronds

ACADEMIC AND PROFESSIONAL EXPERIENCE

Associate Professor (Sep. 2011 – todate)
Department of Bioproducts and Biosystems Engineering, University of Minnesota, St. Paul, MN

Assistant Professor (Aug. 2005 – Aug, 2011)
Department of Bioproducts and Biosystems Engineering, University of Minnesota, St. Paul, MN

Faculty Associate (2005 – todate)
School of Forest Resources, University of Maine

Post-Doctoral Researcher (Feb. 2004 – Jul. 2005)
Tennessee Forest Products Center, University of Tennessee, Knoxville, TN

Guest Researcher (Mar. 2000 - Aug. 2000)
Polymers Division, National Institute of Standards and Technology, Gaithersburg, MD

HONORS AND AWARDS (SELECTED)

L. J. Markwardt Wood Engineering Award (for the most outstanding paper on the basic research of wood as an engineering material); Forest Products Society, 2008.

Richard C. Newman Art of Teaching Award (for passion and excellence in the teaching of natural resource sciences and for positive impacts on students); College of Food, Agricultural, and Natural Resource Sciences, University of Minnesota, 2008.

Second Place, Wood Award (for outstanding graduate research in the field of wood and wood products), Forest Products Society, 2004

ACS Graduate Student Award (for excellence in graduate student research on the chemical nature of cellulose, paper, and textile), Division of Cellulose and Renewable Materials, American Chemical Society, 2004

Forest Products Graduate Student of the Year (for professionalism, service, and academic achievement in wood science), University of Maine, 2002

PROFESSIONAL ACTIVITIES (SELECTED)

Panelist, *National Science Foundation*, 2011

Guest Co-editors, Adhesion Aspects of the Paper Industry (Special Issue), *Journal of Adhesion Science and Technology*, 2009 – 2010

Editorial Board, *Journal of Biobased Materials and Bioenergy*, 2010 –2011

Steering Committee, *TAPPI International Conference on Nanotechnology for Renewable Materials*, 2011

Membership Committee Chair, *Society of Wood Science and Technology*, 2009 – 2011.

Marra Award Committee, *Society of Wood Science and Technology*, 2010 – 2011.

Graduate Student Award Committee, Cellulose and Renewable Materials Division, American Chemical Society, 2013

Member, *American Chemical Society*

UNIVERSITY SERVICES (SELECTED)

Newman Teaching Award Selection Committee Chair, *College of Food, Agricultural, and Natural Resource Sciences, University of Minnesota*, 2010

Undergraduate Scholarship Committee, *College of Food, Agricultural, and Natural Resource Sciences, University of Minnesota*, 2008 – 2009; 2013 – 2016.

Faculty Consultative Committee, *Department of Bioproducts & Biosystems Engineering, University of Minnesota*, 2008 – 2010; 2013 – 2015

Student Recruitment & Retention Committee, *Department of Bioproducts & Biosystems Engineering, University of Minnesota*, 2010 – Present

Faculty Search Committee, *Department of Bioproducts & Biosystems Engineering, University of Minnesota*, 2008 – 2009 for bioprocessing faculty; 2010 for life cycle analyses faculty

REFEREED PUBLICATION

1. Zhao, X., X. Lu, **W. T. Y. Tze**, J. Kim, and P. Wang. 2013. Cellulosic carbon fibers with branching carbon nanotubes for enhanced electrochemical activities for bioprocessing applications. *ACS Applied Materials & Interfaces* 5:8853-8856.
2. Lee, H.-J., T.-J. Chung, H.-J. Kwon, H.-J., Kim, and **W. T. Y. Tze**. 2012. Fabrication and evaluation of bacterial cellulose-polyaniline composites by interfacial polymerization. *Cellulose* 19:1251-1258.
3. **Tze, W. T. Y.**, J. Yao, M. Taylor, and J. Simonsen. 2010. Raman spectroscopic studies of load transfer in nano-cellulose-filled poly(lactic acid) composites. *World Journal of Engineering* 7(Suppl. 2):159-1 – 159-3
4. Moya, L., **W. T. Y Tze**, and J. E. Winandy. 2010. Predicting the bending stiffness of randomly oriented hybrid panels. *Wood and Fiber Science* 42(4):536-549.
5. Zhao, X., X. Lu, **W. T. Y. Tze**, and P. Wang. 2010. A single carbon fiber microelectrode with branching carbon nanotubes for biochemical processes. *Biosensors and Bioelectronics Journal* 25:2343-2350.
6. Moya, L., **W. T. Y. Tze**, and J. E. Winandy. 2009. The effect of cyclic relative humidity changes on moisture content and thickness swelling behavior of oriented strandboard. *Wood and Fiber Science* 41(4):447-460.
7. Moya, L., J. E. Winandy, **W. T. Y. Tze**, and S. Ramaswamy. 2008. Use of fire-impacted trees for oriented strandboards. *Forest Products Journal* 58(6):45-52.
8. Mills, R. H., **W. T. Y. Tze**, D. J. Gardner, and A. van Heiningen. 2008. Inverse gas chromatography for the determination of the dispersive surface free energy and acid-base interactions of a sheet molding compound. I. Matrix material and glass. *Journal of Applied Polymer Science* 109:3519-3524.
9. **Tze, W. T. Y.**, S. Wang, T. G. Rials, G. M. Pharr, and S. S. Kelley. 2007. Nanoindentation of wood cell walls: Continuous stiffness and hardness measurements. *Composites: Part A* 38:945-953.
10. **Tze, W. T. Y.**, S. C. O'Neill, C. P. Tripp, D. J. Gardner, and S. M. Shaler. 2007. Evaluation of load transfer in the cellulosic-fiber/polymer interphase using a micro-Raman tensile test. *Wood and Fiber Science* 39(1):184-195.
11. **Tze, W. T. Y.**, G. Bernhardt, D. J. Gardner, and A. W. Christiansen. 2006. X-ray photoelectron spectroscopy of wood treated with hydroxymethylated resorcinol (HMR). *International Journal of Adhesion and Adhesives*. 26 (7): 550-554.
12. **Tze, W. T. Y.**, D. J. Gardner, C. P. Tripp, and S. C. O'Neill. 2006. Cellulose-fiber/polymer adhesion: Effects of fiber/matrix interfacial chemistry on the micromechanics of the interphase. *Journal of Adhesion Science and Technology*. 20(15):1649-1668.
13. **Tze, W. T. Y.**, M. E. P. Wålinder, and D. J. Gardner. 2006. Inverse Gas Chromatography for Studying Interaction of Materials Used for Cellulose-fiber/Polymer Composites. *Journal of Adhesion Science and Technology*. 20(8):748-759.
14. Son, J., **W. T. Y. Tze**, and D. J. Gardner. 2005. Thermal behavior of hydroxymethylated resorcinol (HMR)-treated maple veneer. *Wood and Fiber Science Journal* 37(2):220-231.

15. Kanan, S. M., **W. T. Y. Tze**, and C. P. Tripp. 2002. A method to double the surface concentration and control the orientation of adsorbed (3-aminopropyl) dimethylethoxysilane on silica powders and glass slides. *Langmuir* 18:6623-6627.
16. Gardner, D. J., **W. T. Tze**, and S. Q. Shi. 2001. Adhesive wettability of hydroxymethyl resorcinol (HMR) treated wood. Pp. 321-327 in *Wood Adhesives 2000*, Proceedings (peer-reviewed), Forest Products Society, Madison, WI.
17. **Tze, W. T.** and D. J. Gardner. 2001. Swelling of recycled wood pulp fibers: effect on hydroxyl availability and surface chemistry. *Wood and Fiber Science Journal* 33(3):364-376.
18. **Tze, W. T.** and D. J. Gardner. 2001. Contact angle and IGC measurements for probing surface-chemical changes in the recycling of wood pulp fibers. *Journal of Adhesion Science and Technology* 15(2):223-241.
19. **Tze, W. T. Y.**, Paridah Md. Tahir, Jamaludin Kassim, and Mohd. Nor Mohd. Yusoff. 1999. Soda-anthraquinone pulps from sago palm (*Metroxylon sagu*) fronds. Part 2. Three-stage bleaching. *Journal of Tropical Forest Products* 5(1):1-8.
20. **Tze, W. T. Y.** 1999. Recovery and quality of lumber from mature trees of teak species (*Tectona grandis*) planted in Sabah, Malaysia. *Journal of Tropical Forest Products* 5(2):115-123.
21. Trockenbrodt, M. and **W. T. Y. Tze**. 1999. A note on the sawing and planing properties of Binuang (*Octomeles sumatrana*) and Sentang (*Azadirachta excelsa*) from Sabah, Malaysia. *Journal of Tropical Forest Products* 5(2):216-219.
22. **Tze, W. T. Y.** 1998. Some regression models for variation in basic density along the stem of wild *Calamus subinermis*. *Journal of Tropical Forest Products* 4(1):93-96.
23. Paridah Md. Tahir, **W. T. Y. Tze**, Mohd. Nor Mohd. Yusoff, and Jamaludin Kassim. 1998. Soda-anthraquinone pulps from sago palm (*Metroxylon sagu*) fronds. Part 1. Pulping potential. *Journal of Tropical Forest Products* 4(2):120-129.
24. Trockenbrodt, M. and **W. T. Y. Tze**. 1997. Initial moisture content, density and shrinkage of Binuang (*Octomeles sumatrana*) from Sabah. *Holz als Roh- und Werkstoff* 55(3):202.

NON-REFEREED PUBLICATION

- (1) Hafez, I., H. Yang, and **W. T. Y. Tze**. 2014. Applications of enzymatic saccharification residues as a fully biobased adhesive. 4 pp. Conference paper in the *TechConnect World Conference and Expo 2014 – Nanotech, Microtech, Biotech, Cleantech Joint 2014 Conferences*.
- (2) Wang, S., S. H. Lee, **W. T. Y. Tze**, T. Rials, and G. M. Pharr. 2006. Nanoindentation as a tool for understanding nano-mechanical properties of cell wall and biocomposites. 7 pp. Conference paper in the *2006 TAPPI International Conference on Nanotechnology for the Forest Products Industry*. Published in CD, TAPPI, Atlanta, GA.
- (3) Wang, S., S. H. Lee, **W. T. Y. Tze**, T. Rials, and G. M. Pharr. 2006. Investigating nano-mechanical properties of the wood and its composites by continuous nanoindentation. Pages 328-333 in the *Proceedings of the 8th Pacific Rim Bio-based Composites Symposium*. Yusoff, M. N. M. et al. (eds.), Forest Research Institute Malaysia, Kuala Lumpur, Malaysia (ISBN 983-2181-87-9).
- (4) **Tze, W. T. Y.**, S. C. O'Neill, D. J. Gardner, C. P. Tripp, and S. M. Shaler. 2004. Coupling polystyrene and cellulose fibers with hydrophilic and hydrophobic silanes: effects on interfacial properties. *Proceedings of the 7th International Conference on Woodfiber-Plastic Composites*. Forest Products Society, Madison, WI. Pp. 29-35.
- (5) **Tze, W. T. Y.**, D. J. Gardner, C. P. Tripp, S. M. Shaler, and S. C. O'Neill. 2002. Interfacial adhesion studies of cellulose-fiber/polymer composites using a micro-Raman technique. *Proceedings of the 6th International Conference on Woodfiber-Plastic Composites*. Forest Products Society, Madison, WI. Pp. 177-183.
- (6) Gardner, D. J., S. Q. Shi, and **W. T. Tze**. 2000. Comparison of acid-base characterization techniques on lignocellulosic surfaces. Pp. 363-383 in Mittal, K.L. (Ed.) *Acid-base Interactions: Relevance to Adhesion Science and Technology, Volume 2*. VSP, Zeist, Netherlands. 624 pp.
- (7) Gardner, D. J., **W. T. Tze**, and S. Q. Shi. 1999. Surface energy characterization of wood particles by contact angle analysis and inverse gas chromatography. Pp. 263-293 in Argyropoulos, D.S. (Ed.) *Advances in Lignocellulosics Characterization*. TAPPI Press, Atlanta. 382 pp.

BOOKS & EDITORSHIP

- I. Kim, H.-J., B.-H. Lee, H.-J. Lee, T.-J. Chung, H.-J. Kwon, D. Cho, and **W. T. Y. Tze**. 2013. Application and future scope of green composites, Pages 467-483 (Chapter 13) in Thomas, S., K. Joseph, S. K. Malhotra, K. Goda, and M. S. Sreekala, eds. *Polymer Composites Volume 3 – BioComposites*, John Wiley & Sons.
- II. Severtson, S. J. and **W. T. Y. Tze** 2011. Special Issue (guest edit) on “Adhesion Aspects in the Paper Industry”. *Journal of Adhesion Science and Technology* 25(6-7):539-542.

ORAL PRESENTATION

(name in bold font is the presenting author)

Invited oral presentations

1. **Tze, W. T. Y.** Nano-cellulose: Tapping its reinforcement benefits and understanding load transfer in its composites. Talk invited by Seoul National University Department of Biosystems and Biomaterials Science and Engineering, Seoul, Korea. Nov 23, 2011.
2. **Tze, W. T. Y.** Tapping the Reinforcement Benefits of Nanocrystalline Cellulose. Talk invited by Andersen Corporation (Windows), Bayport, MN. Jun 16, 2011.
3. Babcock, L., W. Tze, U. Tschirner, **S. Ramaswamy**. Traditional bioproducts in biobased materials: Back to the future. USDA BioPreferred Forums: Biobased Intermediate Materials and Feedstocks, Ames, IA. Apr. 1, 2010.
4. **Tze, W. T. Y.** Characterization of Interphase in Cellulosic Composites. Presentation invited by the Kyoto University/National Institute of Advanced Industrial Science & Technology joint-research team on cellulose nanofiber nanocomposites research, Uji, Kyoto, Japan. Nov. 26, 2008.
5. **Tze, W. T. Y.** Research in Biocomposites. Talk invited by Aspen Research Corporation, St. Paul, MN. Aug. 29, 2007.

Oral presentations in conferences

6. **Schilling, J.S.**, F.J. Liew, H.S. Yang, I. Hafez, and W. T. Y. Tze. Only the strong survive: Saccharification residues and their qualities as lignocellulose by-products. 2013 AIChE Annual Meeting, San Francisco, CA, Nov 3-8, 2013.
7. **Tze, W.T.Y.**, H.-S. Yang, F.J. Liew, and J. Schilling. Binderless films as coproducts of biomass saccharification 25th Annual Meeting of the Association for the Advancement of Industrial Crops, Washington, DC, Oct 12-16, 2013.
8. **Yang, H.-S.**, W. T. Y. Tze, J. Schilling, and S. Duncan. Co-products of bioenergy system: characterization of saccharification residuals. 2011 AIChE Annual Meeting, Minneapolis, MN. Oct 16-21, 2011.
9. **Tze, W. T. Y.**, S. Koerner, J. Yao, M. Taylor, and J. Simonsen. A Raman/tensile study of load transfer in microfibrillated cellulose/poly(lactic acid) composites. 2011 TAPPI International Conference on Nano for Renewable Materials, Arlington, VA. Jun 6-8, 2011.
10. **Tze, W. T. Y.**, J. Yao, M. Taylor, and J. Simonsen. Raman spectroscopic studies of load transfer in nano-cellulose-filled poly(lactic acid) composites. 18th Annual International Conference on Composites/Nano Engineering, Anchorage, AK. Jul. 4-10, 2010.
11. **Tze, W. T. Y.** and L. Zhou. Cellulose self-reinforced composites from partial dissolution. Forest Products Society 64th International Convention, Madison, WI. Jun. 20-22, 2010.
12. **Moya, L. M.**, J. E. Winandy, and W. Tze. Using fire-impacted trees for OSBs. Forest Products Society 61st International Convention, Knoxville, TN. Jun. 10-13, 2007.
13. **Wang, S.**, S. H. Lee, W. T. Y. Tze, T. Rials., and G. M. Pharr. Investigating nano-mechanical properties of the wood and its composites by continuous nanoindentation. 8th Pacific Rim Bio-based Composites Symposium, Kuala Lumpur, Malaysia. Nov. 20-23, 2006.

14. **Wang, S.**, S. H. Lee, W. T. Y. Tze, T. Rials., and G. M. Pharr. Nanoindentation as a tool for understanding nano-mechanical properties of cell wall and biocomposites. 2006 TAPPI International Conference on Nanotechnology for the Forest Products Industry, Atlanta, GA. Apr. 26-28, 2006.
15. Tze, W, **T. Rials**, S. Wang, S. Kelley, and G. Pharr. 2005. The wood-resin interphase: characterization by nanoindentation and chemical imaging. Wood Adhesives 2005. San Diego, CA. Nov. 2-4, 2005.
16. **Rials, T. G.**, W. Tze, S. Wang, S. Kelley, and G. Pharr. 2005. Structure-property relationships in the loblolly pine cell wall: Interaction with synthetic polymers. XVII International Botanical Congress. Vienna, Austria. Jul. 17-23, 2005.
17. **Tze, W. T. Y.**, S. C. O'Neill, D. J. Gardner, C. P. Tripp, and S. M. Shaler. 2003. Coupling polystyrene and cellulose fibers with hydrophilic and hydrophobic silanes: Effects on interfacial properties. 7th International Conference on Woodfiber-Plastic Composites, Madison, WI. May 19-20, 2003.
18. **Tze, W. T. Y.**, D. J. Gardner, C. P. Tripp, S. C. O'Neill, and S. M. Shaler. 2003. Cellulose-fiber/polystyrene composites: Effects of fiber/matrix compatibility on interfacial microdeformation. American Chemical Society 225th National Meeting, New Orleans, LA. Mar. 23-27, 2003.
19. **Tze, W. T. Y.**, D. J. Gardner, C. P. Tripp, S. M. Shaler, and S. C. O'Neill. 2002. Raman micro-spectroscopic study of cellulose fibers at the fiber/polymer interface. American Chemical Society 223rd National Meeting, Orlando, FL. Apr. 7-11, 2002.
20. **Tze, W. T. Y.**, D. J. Gardner, C. P. Tripp, S. M. Shaler, and S. C. O'Neill. 2001. Interfacial adhesion studies of cellulose-fiber/polymer composites using a micro-Raman technique. 6th International Conference on Woodfiber-Plastic Composites, Madison, WI. May 15-16, 2001.
21. **Rials, T. G.**, L. H. Groom, W. Tze, D. J. Gardner, and R. Snell. 2001. Effect of refining on the surface characteristics of loblolly pine fibers. American Chemical Society 221st National Meeting, San Diego, CA. Apr. 1-5, 2001.
22. **Gardner, D. J.**, S. Q. Shi, W. T. Tze, and T. G. Rials. 1999. Contact-angle determination of lignocellulosic fibers by column-wicking measurements. American Chemical Society 218th National Meeting, New Orleans, Louisiana. Aug. 22-26, 1999.
23. **Tze, W.** 1995. Recent and future wood products research in Sabah: its relations with biodiversity conservation. Twelfth Malaysian Forestry Conference, Miri, Sarawak, Malaysia. Nov. 20–26, 1995.
24. **Tze, W.** 1993. Forest products research link: the experience in Sabah, and recommendations for ASEAN. Fifth ASEAN Forest Products Research Coordination Seminar, Los Banos, Philippines. Apr. 20–21, 1993.

POSTER PRESENTATION

(name in bold font is the presenting author)

- (1) **Hafez, I.**, H.-S. Yang, and W. T. Y. Tze. Electrically conductive paper coated with PEDOT:PSS. Poster presentation in the 67th Forest Products Society International Convention, Jun 9-11, 2013, Austin, Texas.
- (2) **Yang, H.-S.** and W. T. Y. Tze. Mechanical properties of sheet products made of nano-fibrillated woody biomass. Poster presentation in the 67th Forest Products Society International Convention, Jun 9-11, 2013, Austin, Texas.
- (3) **Yang, H.-S.**, W. T. Y. Tze, J. Schilling, and S. Duncan. Saccharification residues for bioproducts: Reactivity and accessibility characterization. Poster presentation in the Society of Wood Science and Technology Convention, Jun 9-11, 2013, Austin, Texas.
- (4) **Tze, W. T. Y.**, S. Duncan, S.-H. Lee, H.-S. Yang, J. Schilling, and T. Endo. Nanofibers from biomass saccharification residues: Inferences from chemical and crystallinity studies. International Nanofiber Symposium / N3M – Nanofibers for the 3rd Millennium 2012 (Nanofibers2012)[®], Tokyo, Japan. Jun. 4-5, 2012.
- (5) **Liew, F. J.**, H. S. Yang, S. M. Duncan, J. S. Schilling, and W. T. Y. Tze. Only the strong survive: Incomplete hydrolysis of lignocelluloses yields building blocks. Forest Products Society 66th International Convention, Washington, DC. Jun. 3-5, 2012.
- (6) **Tze, W. T. Y.**, K. Wu, J. Yao, M. Taylor, and J. Simonsen.. Dynamic Mechanical Thermal Analysis and Raman Spectroscopy of Cellulose Nanocomposites. USA' International Conference on Surfaces, Coatings and Nanostructured Materials (NANOSMAT-USA), Tampa, FL. Mar. 27-30, 2012.
- (7) **Yang, H.-S.**, W. T. Y. Tze, J. Schilling, and S. Duncan. Co-products of bioenergy system: characterization of saccharification residuals. Fall 2011 Department of Bioproducts and Biosystems Engineering Advisory Council Meeting, St. Paul, MN. Oct. 27, 2011.
- (8) **Tze, W. T. Y.**, J. Schilling, S. Duncan, and H.-S. Yang. Characterization of solid residues from enzymatic saccharification of woody biomass. NIFA Sustainable Bioenergy & Bioproducts Meeting, Arlington, VA. Oct 24-26, 2011.
- (9) **Tze, W. T. Y.** and J. Lund. Characterization of bio-based nanomaterial reinforcement of polymer: Isolating effects of adhesion from dispersion. Forest Products Society 64th International Convention, Madison, WI. Jun. 20-22, 2010.
- (10) **Tze, W. T. Y.** and J. Lund. Characterization of bio-based nanomaterial reinforcement of polymer: Isolating effects of adhesion from dispersion. Forest Products Society 64th International Convention, Madison, WI. Jun. 20-22, 2010.
- (11) **Yao, J.**, W. T. Y. Tze, M. Taylor, and J. Simonsen. Nano-cellulose/PLA adhesion: Evaluation using a micro-Raman tensile technique. Forest Products Society 64th International Convention. Madison, WI. Jun. 20-22, 2010.
- (12) **Lund, J.** and W. T. Y. Tze. Preparation of nanocomposites by polymer infusion for investigating adhesion effects on the nanocrystalline cellulose reinforcement of polymer. 5th Annual Minnesota Nanotechnology Conference, Minneapolis, MN. Nov. 17-18, 2009.
- (13) **Yao, J.** and W. T. Y. Tze. Effect of nano-cellulose on the stress relaxation behavior of PLA. 5th Annual Minnesota Nanotechnology Conference, Minneapolis, MN. Nov. 17-18, 2009.

- (14) **Lund, J.** and W. T. Y. Tze. A polymer infusion approach for preparing nano-cellulose/polymer composites. Fall 2009 Department of Bioproducts and Biosystems Engineering Advisory Council Meeting, St. Paul, MN. Oct. 22, 2009.
- (15) **Yao, J.** and W. T. Y. Tze. Stress relaxation studies of nano-cellulose/PLA composites. Fall 2009 Department of Bioproducts and Biosystems Engineering Advisory Council Meeting, St. Paul, MN. Oct. 22, 2009.
- (16) **Zhou, L.** and W. T. Y. Tze. X-ray diffraction studies of cellulose/cellulose composites. Fall 2009 Department of Bioproducts and Biosystems Engineering Advisory Council Meeting, St. Paul, MN. Oct. 22, 2009.
- (17) **Tze, W. T. Y.** and J. Yao. Characterization of nano-cellulose/PLA composites using Raman spectroscopy – Spectral analysis. 2009 International Conference on Nanotechnology for the Forest Products Industry, Edmonton, Canada, Jun. 23-26, 2009.
- (18) **Yao, J.** and W. T. Y. Tze. Raman spectroscopic study of nano-cellulose-reinforced PLA bioplastics – Preliminary spectral analysis. Bioproducts and Biosystems Engineering Department Centennial Poster session, St. Paul, MN. Mar. 26, 2009.
- (19) **Zhou, L.,** J. Yao, and W. T. Y. Tze. Cellulose self-reinforced nanocomposites prepared in an ionic liquid. Bioproducts and Biosystems Engineering Department Centennial Poster session, St. Paul, MN. Mar. 26, 2009.
- (20) **Lund, J. D.** and W. T. Y. Tze. Nanomaterials from Cellulosic Biomass – Characterization of Their Reinforcement Effects in Polymeric Composites. 4th Annual Minnesota Nanotechnology Conference, Minneapolis, MN. Nov. 11-13, 2008.
- (21) Tze W. T. Y. and **L. Zhou.** Cellulose self-reinforced nanocomposites prepared in a cellulose-dissolving agent. Fall 2008 Department of Bioproducts and Biosystems Engineering Advisory Council Meeting, St. Paul, MN. Oct. 23, 2008.
- (22) **Tze, W. T. Y.** and J. D. Lund. Reinforcement effects of cellulose nanocrystals in compatibilized cellulose-polystyrene composites. Fall 2008 Wood Based Composites Center Industry Advisory Board Meeting, Corvallis, OR. Oct. 15, 2008.
- (23) **Tze, W. T. Y.** and J. D. Lund. Effects of compatibilizers on the mechanical properties of cellulose nanocrystal-reinforced polystyrene composites. 2008 International Conference on Nanotechnology for the Forest Products Industry, St. Louis, MO. Jun. 25-27, 2008.
- (24) **Lund, J. D.** and W. T. Y. Tze. Cellulose nanocrystals reinforced composites through preparation in organic phases. 3rd Annual Minnesota Nanotechnology Conference, Minneapolis, MN. Nov. 13-14, 2007.
- (25) **Lund, J. D.** and W. T. Y. Tze. Single-step extraction of cellulose into organic media. Fall 2007 Department of Bioproducts and Biosystems Engineering Advisory Council Meeting, St. Paul, MN. Oct. 18, 2007,
- (26) **Tze, W. T. Y.** and J. D. Lund. Sorption behaviors of cellulose nanocrystal-filled polymer composites. 2007 International Conference on Nanotechnology for the Forest Products Industry, Knoxville, TN. Jun. 13-15, 2007.
- (27) **Tze, W. T. Y.** Creep studies of adhesive glue line based on nanoindentation measurements. Spring 2007 Wood Based Composites Center Industry Advisory Board Meeting, Vancouver, Canada. May 16, 2007.

- (28) **Tze, W. T. Y.** Nanoindentation and chemical imaging of wood bondline. Spring 2006 Wood Based Composites Center Industry Advisory Board Meeting, Blacksburg, VA. Mar. 22-23, 2006.
- (29) **Tze, W. T. Y.** Micron-scale analyses: Enhancing our knowledge and performance control of bio-based composites. Poster presentation at the Fall 2005 Wood Based Composites Center Industry Advisory Board Meeting, Blacksburg, VA. Sep. 28-29, 2005.
- (30) **Tze, W. T. Y.,** D. J. Gardner, C. P. Tripp, S. M. Shaler, and S. C. O'Neill. 2004. Evaluation of load transfer at the cellulose-fiber/polymer interphase using a micro-Raman tensile test. Forest Products Society 58th Annual Meeting. Grand Rapids, MI. Jun. 27-30, 2004.
- (31) **Tze, W. T. Y.** 2002. A study of strain distribution within the cellulose-fiber/polymer interphase using a Raman micro-spectroscopic technique. Forest Products Society 56th Annual Meeting. Madison, WI. Jun. 23-26, 2002.
- (32) **Tze, W. T. Y.,** S. C. O'Neill, D. J. Gardner, C. P. Tripp, and S. M. Shaler. 2002. Cellulose-fiber/polymer adhesion: Evaluation using the Raman-microbond technique. American Chemical Society 223rd National Meeting, Orlando, FL. Apr. 7-11, 2002.
- (33) **Tze, W. T. Y.,** M. E. P. Wålinder, and D. J. Gardner. 2001. Inverse gas chromatography studies of bonding in cellulose-fiber/polymer composites. 1st International Conference on Inverse Gas Chromatography, London, U.K. Sep. 17-19, 2001.
- (34) **Tze, W. T.** and D. J. Gardner. 1999. Effects of swelling treatments on fiber surface chemistry. American Chemical Society 218th National Meeting, New Orleans, Louisiana. Aug. 22-26, 1999.
- (35) **Tze, W. T.** and D. J. Gardner. 1999. An attempt to predict the bond strength of wood-fiber/polymer composites using surface energy data. First International Conference on Advanced Engineered Wood Composites, Bar Harbor, ME. Jul. 5-8, 1999.