Richard P. Chandra

Curriculum Vitae

LinkedIn: https://ca.linkedin.com/in/richard-chandra-108768
Google Scholar: https://scholar.google.ca/citations?user=xdtroCwAAAAJ

ACADEMIC ACCOMPLISMENTS

Peer reviewed publications: 76
Citations: 9526
H- Index: 37
I- 10 Index: 60
Classes taught: GBPR 501, "Biomass Conversion Chemistry" and Wood 249 "Contemporary Topics in Forestry and Wood Products" (ran course for one year while Instructor was on sabbatical)
Graduate students supervised/co-supervised: 10
Graduate student advisory/examination committees: 8
Undergraduate student supervised: 10
Successful research grants written: 11 (while at UBC)
Industrial experience: Kimberly Clark Corporation

RESEARCH AND TEACHING INTERESTS

Research: Enzymes, fungi, biorefinery development, conversion of renewable, sustainable, carbon-friendly streams such as lignocellulosic biomass to environmentally friendly materials, chemicals and fuels.

Teaching: Plant, wood and soil science, environmental science, microbiology, fermentation, chemistry, biochemistry,

EDUCATION

Georgia Institute of Technology/ Institute of Paper Science and Technology (now Renewable Bio-products Institute at Georgia Tech), Atlanta, GA
Doctor of Philosophy (PhD) with focus on Organic chemistry
6 peer reviewed publications
May, 2004

University of British Columbia, Vancouver, B.C., Canada
Master of Science (M.Sc.) in Wood Science, with focus on microbes/fungi
4 peer reviewed publications
January, 1999

University of British Columbia, Vancouver, B.C., Canada
Bachelor of Science (B.Sc.), in Microbiology
May, 1995

ACADEMIC HONORS

2014 Wallenberg Young Researchers Award,
Excellence in Cellulose related research. Awarded for my work on enzyme treatment of dissolving pulp.
2003 American Chemical Society Graduate Student Award
CELL (Cellulose, Textiles and Renewable Materials) Division.
Excellence in Cellulose or Renewable Materials Research

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EXPERIENCE

Jul 2019-present	**Trinity Western University, Associate Provost Research, (Director of Research from July 2019-May 2021).** Lead Research Administrator. Represents University on SSHRC and NSERC Leaders. Leads Research Office, works with Faculty to find funding opportunities, procure research funding through proposal development, contract negotiation, workshops mentorship, build research programs, host events to promote research accomplishments and opportunities.
October '18-July '19	**Alberta Innovates/Innotech Alberta (Government of Alberta), Research Scientist** The development of microbial, enzymatic and chemical strategies to valorize the cellulose, hemicelluloses and lignin contained in biomass to produce nanomaterials.
January-April 2016	**University of British Columbia, Chemical and Biological Engineering, Instructor:** Developed and delivered course entitled "Biomass Conversion Chemistry" for the Masters of Engineering in Green Bioproducts Program
August '06-Oct 2018	**University of British Columbia, Bioenergy Group**, **Research Associate (**2007-2018) and Postdoctoral fellow (2006-07): Pretreatment and enzymatic hydrolysis of wood/agricultural biomass to convert to higher value products/biojet fuel. Pulp fibre modification, nanocellulose, dissolving pulp, novel fibre characterization techniques. Student supervision (>10), grant writing, laboratory management, purchasing, supervision of students/lab technicians.
March '05-August '06	**University of British Columbia**, **Department of Wood Science,** Post-Doctoral Fellow. Development of novel methods for determining cellulose/lignin properties.
July '03-March '05	**University of British Columbia, Department of Chemistry,** Post-Doctoral Fellow Nuclear Magnetic Resonance and Mass spectrometry testing for the development of novel bleaching agents
Aug-Dec 2002	**Kimberly Clark Corporation**, Absorbent Core Technology, Roswell, GA. Intern
Jan-May 2002	**Kimberly Clark Corporation**, Environmental Technology, Neenah, WI. Intern
May-Oct 1995	**University of British Columbia**, Forest Products Biotechnology Laboratory, Vancouver, B.C., Summer student

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PEER-REVIEWED PUBLICATIONS

Manuscripts in Preparation:

Chandra, R.P., Wu, A., Lin, M., Saddler, J.N. (2022) Valorizing cell wall components when utilizing mechanical pulping methods as "front-ends" for a biological conversion based biorefinery. Review article for submission to Biotechnology Advances.

Chandra, R.P., Wu, A., Saddler, J.N. (2022) Enzymatic treatments to inhibit fibre hornification. Article for submission to ACS Sustainable Chemistry and Engineering.

Submitted Manuscripts:

Zhong N., **Chandra, R.P.**, Yamamoto, M., Granström, T., Saddler, J.N., (2022) Submitted to ACS Sustainable Chemistry and Engineering. The potential of using sulfite during steam pretreatment to boost sugar and ethanol production when processing softwood derived "whole slurries"

Liu,C-G, Liu, L.; **Chandra, R.**, Tang, Y., Liu, Q. Bai, F. (2022) "Steam explosion: an efficient preprocessing step for the thermochemical pretreatment of lignocelluloses" Submitted to ACS Sustainable Chemistry and Engineering.

Published Journal Articles:

Bi, R., Khatri, V., **Chandra, R**., Takada, M., Figueroa, D. V., Zhou, H., ... & Saddler, J. (2021). Enhancing Kraft Based dissolving pulp production by integrating green liquor neutralization. *Carbohydrate Polymer Technologies And Applications*, 100034.

Wu, J., Kim, K. H., Jeong, K., Kim, D., Kim, C. S., Ha, J. M., ... **Chandra, RP** & Saddler, J. N. (2021). The production of lactic acid from chemi-thermomechanical pulps using a chemo-catalytic approach. Bioresource Technology, 124664.

Ngo TD., **Chandra R**., Ahvazi B. (2020) Sustainable Lignocellulosic Nanomaterials for Future Green Applications. In: Kharissova O.V., Martínez L.M.T., Kharisov B.I. (eds) Handbook of Nanomaterials and Nanocomposites for Energy and Environmental Applications. Springer, Cham. https://doi.org/10.1007/978-3-030-11155-7_19-1

Song, Y., **Chandra, R. P.**, Zhang, X., & Saddler, J. N. (2020). Non-productive celluase binding onto deep eutectic solvent (DES) extracted lignin from willow and corn stover with inhibitory effects on enzymatic hydrolysis of cellulose. Carbohydrate Polymers, 250, 116956.

Takada, M., **Chandra, R.**, Wu, J., & Saddler, J. N. (2020). The influence of lignin on the effectiveness of using a chemithermomechanical pulping based process to pretreat softwood chips and pellets prior to enzymatic hydrolysis. Bioresource technology, 302, 122895.

Wu, J., **Chandra, R. P.**, Kim, K. H., Kim, C. S., Pu, Y., Ragauskas, A. J., & Saddler, J. N. (2020). Enhancing enzyme-mediated hydrolysis of mechanical pulps by deacetylation and delignification. ACS Sustainable Chemistry & Engineering, 8(15), 5847-5855.

van der Zwan, T., Sigg, A., Hu, J., **Chandra, R. P.**, & Saddler, J. N. (2020). Enzyme-Mediated Lignocellulose Liquefaction Is Highly Substrate-Specific and Influenced by the Substrate Concentration or Rheological Regime. Frontiers in bioengineering and biotechnology, 8, 917.

Wu, J., **Chandra, R**., Takada, M., Del Rio, P., Kim, K. H., Kim, C. S., ... & Saddler, J. (2020). Alkaline sulfonation and thermomechanical pulping pretreatment of softwood chips and pellets to enhance enzymatic hydrolysis. Bioresource Technology, 315, 123789.

Mboowa, D., **Chandra, R. P**., Hu, J., & Saddler, J. N. (2020). Substrate characteristics that influence the Filter paper assay's ability to predict the hydrolytic potential of cellulase mixtures. ACS Sustainable Chemistry & Engineering, 8(28), 10521-10528.

Liu, L. Y., Patankar, S. C., **Chandra, R. P.,** Sathitsuksanoh, N., Saddler, J. N., & Renneckar, S. (2020). Valorization of bark using ethanol–water organosolv treatment: isolation and characterization of crude lignin. ACS Sustainable Chemistry & Engineering, 8(12), 4745-4754.

Takada, M., **Chandra, R. P.,** & Saddler, J. N. (2019). The influence of lignin migration and relocation during steam pretreatment on the enzymatic hydrolysis of softwood and corn stover biomass substrates. Biotechnology and bioengineering, 116(11), 2864-2873.

Hubbe, M. A., **Chandra, R. P.,** Dogu, D., & Van Velzen, S. T. J. (2019). Analytical staining of cellulosic materials: a review. BioResources, 14(3), 7387-7464.

Song, Y., **Chandra, R. P.,** Zhang, X., Tan, T., & Saddler, J. N. (2019). Comparing a deep eutectic solvent (DES) to A hydrotrope for their ability to enhance the fractionation and enzymatic hydrolysis of willow and corn stover. Sustainable Energy & Fuels, 3(5), 1329-1337.

Wu, J., **Chandra, R.**, & Saddler, J. (2019). Alkali–oxygen treatment prior to the mechanical pulping of hardwood enhances enzymatic hydrolysis and carbohydrate recovery through selective lignin modification. Sustainable energy & fuels, 3(1), 227-236.

Van der Zwan, T., **Chandra, R. P.**, & Saddler, J. N. (2019). Laccase-mediated hydrophilization of lignin decreases unproductive enzyme binding but limits subsequent enzymatic hydrolysis at high substrate concentrations. Bioresource technology, 292, 121999.

Chandra, R. P., Wu, J., & Saddler, J. N. (2019). The Application of Fiber Quality Analysis (FQA) and Cellulose Accessibility Measurements To Better Elucidate the Impact of Fiber Curls and Kinks on the Enzymatic Hydrolysis of Fibers. *ACS Sustainable Chemistry & Engineering*, *7*(9), 8827-8833.

Sun, C., Gao, Y., **Chandra, R.**, & Boluk, Y. (2019). From biorefineries to bioproducts: conversion of pretreated Pulp from biorefining streams to lignocellulose nanofibers. TAPPI JOURNAL, 18(4), 233-241.

Zhong, N., **Chandra, R.P.*,** Saddler, JN, (2018) Sulfite post-treatment to simultaneously detoxify and improve the enzymatic hydrolysis and fermentation of a steam pretreated softwood lodgepole pine whole slurry. Accepted in ACS Sustainable Chemistry and Engineering.

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Song, Y., **Chandra, R*.,** Zhang, X. Tan, T., and Saddler, J. (2018) Comparing the ability of Deep Eutectic Solvents (DES) to Hydrotropes to Enhance the Fractionation and Enzymatic Hydrolysis of Willow and Corn Stover" submitted to Sustainable Energy and Fuels.

Wu, J., **Chandra, R.P.*,** Saddler, JN., (2018) Alkali-oxygen treatment prior to the mechanical pulping of hardwood enhances enzymatic hydrolysis and carbohydrate recovery through selective lignin modification. Sustainable Energy and Fuels, *In Press.*

Tang, Y., **Chandra, R. P.,** Sokhansanj, S., & Saddler, J. N. (2018). The Role of Biomass Composition and Steam Treatment on Durability of Pellets. BioEnergy Research, 11(2), 341-350.

Chandra, R. P*., Lin, M**.,** & Saddler, J. N. (2018) "Improving cellulose accessibility and valorizing cell wall components when utilizing mechanical methods as "front-ends" for a biological conversion based biorefinery" Review pre-approved for submission to Biotechnology Advances.

Tang, Y., **Chandra, R. P.,** Sokhansanj, S., & Saddler, J. N. (2018). Influence of steam explosion processes on the durability and enzymatic digestibility of wood pellets. Fuel, 211, 87-94.

Tian, D., Hu, J., **Chandra, R. P**., Saddler, J. N., & Lu, C. (2017). Valorizing recalcitrant cellulolytic enzyme lignin via lignin nanoparticles fabrication in an integrated biorefinery. ACS Sustainable Chemistry & Engineering, 5(3), 2702-2710.

Malgas, S., **Chandra, R.,** Van Dyk, J. S., Saddler, J. N., & Pletschke, B. I. (2017). Formulation of an optimized synergistic enzyme cocktail, HoloMix, for effective degradation of various pre-treated hardwoods. Bioresource Technology. *In press.*

Borén, E., Yazdanpanah, F., Lindahl, R., Schilling, C., **Chandra, R. P**., Ghiasi, B., ... & Larsson, S. H. (2017).Off gassing of VOCs and permanent gases during storage of torrefied and steam exploded wood. Energy & Fuels.

Martino, D. C., Colodette, J. L., **Chandra, R**., & Saddler, J. (2017). Steam explosion pretreatment used to remove hemicellulose to enhance the production of a eucalyptus organosolv dissolving pulp. Wood Science and Technology, 51(3), 557-569.

Tian, D., Hu, J., Bao, J., **Chandra, R. P**., Saddler, J. N., & Lu, C. (2017). Lignin valorization: lignin nanoparticles as high-value bio-additive for multifunctional nanocomposites. Biotechnology for biofuels, 10(1), 192.

Chu, Q., **Chandra, R. P***., Kim, C. S., & Saddler, J. N. (2017). Alkali-Oxygen Impregnation Prior to Steam Pretreating Poplar Wood Chips Enhances Selective Lignin Modification and Removal while Maximizing Carbohydrate Recovery, Cellulose Accessibility, and Enzymatic Hydrolysis. ACS Sustainable Chemistry & Engineering, 5(5), 4011-4017.

Dong T., **Chandra, R.,** Lee, J.S., Saddler, J.; Lu, C. (2017) A comparison of various lignin extraction methods to enhance the enzymatic accessibility of cellulose derived from steam pretreated poplar. Biotechnology for Biofuels, 10:157

Chandra, R.P. & Ragauskas, A.J. (2016) Climbing Steps Towards Biorefineries. Industrial Biotechnology, *Special Issue.*

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Chandra, R. P., Chu, Q., Hu, J., Zhong, N., Lin, M., Lee, J. S., & Saddler, J. (2016). The influence of lignin on steam pretreatment and mechanical pulping of poplar to achieve high sugar recovery and ease of enzymatic hydrolysis. Bioresource technology, 199, 135-141.

Chandra, R. P., & Saddler, J. (2016). What can we learn from pulp? Biofuels International. Volume 10, Issue 3, April 2016,

Hashmi M., **Chandra, RP**, & Ragauskas (2016). Lignin Valorization via Laccase Assistend Functionalization. BAOJ Chem, 2, 12.

Chandra, R. P., Gourlay, K., Kim, C. S., & Saddler, J. N. (2015). Enhancing hemicellulose recovery and the enzymatic hydrolysis of cellulose by adding lignosulfonates during the two-stage steam pretreatment of poplar. ACS Sustainable Chemistry & Engineering, 3(5), 986-991.

Chandra, R. P., Arantes, V., & Saddler, J. (2015). Steam pretreatment of agricultural residues facilitates hemicellulose recovery while enhancing enzyme accessibility to cellulose. Bioresource technology, 185, 302-307.

Hu, J., **Chandra, R**., Arantes, V., Gourlay, K., van Dyk, J. S., & Saddler, J. N. (2015). The addition of accessory enzymes enhances the hydrolytic performance of cellulase enzymes at high solid loadings. Bioresource technology, 186, 149-153.

Ragauskas, A. J., Beckham, G. T., Biddy, M. J., **Chandra, R**., Chen, F., Davis, M. F., ... & Wyman, C. E. (2014). Lignin valorization: Improving lignin processing in the biorefinery. Science, 344(6185), 1246843..

Marzialetti, T., Salazar, J. P., Ocampos, C., **Chandra, R**., Chung, P., Saddler, J., & Parra, C. (2014). Second generation ethanol in Chile: optimisation of the autohydrolysis of *Eucalyptus globulus*. Biomass Conversion and Biorefinery, 4(2), 125-135.

Chandra, R., & Saddler, J. (2013). A compare and contrast of pulping processes that have been adapted for biomass pretreatment. J-FOR- Journal of Science and Technology for Forest Products and Processes. 3(6), 6-14.

Burkhardt S, Kumar L, **Chandra** RP, Saddler JN (2013) How effective are traditional methods of compositional analysis in providing an accurate material balance for a range of softwood derived residues? Biotechnol Biofuels. 6(1):90

Panagiotopoulous I, **Chandra, RP,** Saddler JN A two –stage pretreatment approach to maximize sugar yield and enhance reactive lignin recovery from poplar wood chips. Bioresource Technology (2013) 30:570-577.

Chandra, R. P., & Saddler, J. N. (2012). Use of the Simons' Staining technique to assess cellulose accessibility in pretreated substrates. Industrial Biotechnology, 8(4), 230-237.

Del Rio LF, **Chandra RP**, Saddler JN. (2012) Fibre size does not appear to influence the ease of enzymatic hydrolysis of organosolv-pretreated softwoods. Bioresource Technology, 107, 235-242.

Teghammar, A., **Chandra, R**., Saddler, J. N., Taherzadeh, M. J., & Horváth, I. S. (2012). Substrate characteristic analysis for anaerobic digestion: A study on rice and triticale straw. BioResources, 7(3), 3921-3934.

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Google Scholar: https://scholar.google.ca/citations?user=xdtroCwAAAAJ

Kumar, L., Arantes, V., **Chandra, R.,** & Saddler, J. (2012). The lignin present in steam pretreated softwood binds enzymes and limits cellulose accessibility. Bioresource technology, 103(1), 201-208.

Kumar L, **Chandra RP**, Saddler JN. (2011) Influence of steam pretreatment severity on post-treatments used to enhance the enzymatic hydrolysis of pretreated softwoods at low enzyme loadings. Biotechnology and Bioengineering, 108(10): 2300-2311.

Nakagame, S., **Chandra, R. P**., Kadla, J. F., & Saddler, J. N. (2011). The isolation, characterization and effect of lignin isolated from steam pretreated Douglas-fir on the enzymatic hydrolysis of cellulose. Bioresource technology, 102(6), 4507-4517.

Nakagame, S., **Chandra, R. P.,** Saddler, J. N., Zhu, J. Y., Zhang, X., & Pan, X. J. (2011). The influence of lignin on the enzymatic hydrolysis of pretreated biomass substrates. Sustainable production of fuels, chemicals, and fibers from forest biomass, 145-167.

Chandra, R.P., Au-Yeung, K., Andersson-Roos, A., Mabee, W., Chung, P., Ghatora, S., Saddler, J.N. (2011) The influence of pretreatment and enzyme loading on the effectiveness of batch and fed-batch hydrolysis of corn stover. Biotechnology Progress, 27(1): 77–85.

Del Rio, L. F., **Chandra, R. P.,** & Saddler, J. N. (2011). The effects of increasing swelling and anionic charges on the enzymatic hydrolysis of organosolv-pretreated softwoods at low enzyme loadings. Biotechnology and bioengineering, 108(7), 1549-1558.

Mabee, W. E., Mirck, J., & **Chandra, R.** (2011). Energy from forest biomass in Ontario: Getting beyond the promise. The Forestry Chronicle, 87(1), 61-70.

Nakagame, S., **Chandra, R. P.,** Kadla, J. F., & Saddler, J. N. (2011). Enhancing the enzymatic hydrolysis of lignocellulosic biomass by increasing the carboxylic acid content of the associated lignin. Biotechnology and Bioengineering, 108(3), 538-548

Kumar, L., **Chandra, R.,** Chung, P. A., & Saddler, J. (2010). Can the same steam pretreatment conditions be used for most softwoods to achieve good, enzymatic hydrolysis and sugar yields?. Bioresource technology, 101(20), 7827-7833.

Nakagame, S., **Chandra, R. P.,** & Saddler, J. N. (2010). The effect of isolated lignins, obtained from a range of pretreated lignocellulosic substrates, on enzymatic hydrolysis. Biotechnology and bioengineering, 105(5), 871-879.

Del Rio, L. F., **Chandra, R. P.,** & Saddler, J. N. (2010). The effect of varying organosolv pretreatment chemicals on the physicochemical properties and cellulolytic hydrolysis of mountain pine beetle-killed lodgepole pine. Applied biochemistry and biotechnology, 161(1-8), 1-21.

Chang, X. F., **Chandra, R.,** Berleth, T., & Beatson, R. P. (2008). Rapid, microscale, acetyl bromide-based method for high-throughput determination of lignin content in Arabidopsis thaliana. Journal of agricultural and food chemistry, 56(16), 6825-6834.

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Chandra, R., Ewanick, S., Hsieh, C., & Saddler, J. N. (2008). The characterization of pretreated lignocellulosic substrates prior to enzymatic hydrolysis, part 1: a modified Simons' staining technique. Biotechnology progress, 24(5), 1178-1185.

Chandra, R. P., Esteghlalian, A. R., & Saddler, J. N. (2008). Assessing substrate accessibility to enzymatic hydrolysis by cellulases. Characterization of lignocellulosic materials, 60-80.

Chandra, R. P., Bura, R., Mabee, W. E., Berlin, D. A., Pan, X., & Saddler, J. N. (2007). Substrate pretreatment: The key to effective enzymatic hydrolysis of lignocellulosics? In Biofuels (pp. 67-93). Springer Berlin Heidelberg.

Tu, M. **Chandra, R.P.,** and Saddler, J.N. (2007) Recycling cellulases during the hydrolysis of steam exploded and ethanol pretreated Lodgepole Pine. Biotechnology Progress, 2007 23(5), 1130-1137.

Tu,M, **Chandra, R.P.,** Saddler, JN. (2007) Evaluating the Distribution of Cellulases and the Recycling of Free Cellulases during the Hydrolysis of Lignocellulosic Substrates" Biotechnology Progress 2007, 23:398-406.

Kim, D. H., Pu, Y., **Chandra, R. P.,** Dyer, T. J., Ragauskas, A. J., & Singh, P. M. (2007). A novel method for enhanced recovery of lignin from aqueous process streams. Journal of wood chemistry and technology, 27(3-4), 219-224.

Chandra, R., Hu, T. Q., James, B. R., Ezhova, M. B., & Moiseev, D. V. (2007). A new class of bleaching and brightness stabilizing agents. Part IV: probing the bleaching chemistry of THP and BBHPE. Journal of Pulp and Paper Science, 33(1), 15-22.

Chandra, R.P., Beatson, R.P. and Saddler, J. (2006) Treatment of Douglas-fir heartwood TMP with laccases: adjusting the treatment conditions. Journal of Wood Chemistry and Technology, 27(2),73-82.

Hu, T. Q., James, B. R., Yawalata, D., Ezhova, M. B., & **Chandra, R. P.** (2005). A new class of bleaching and brightness stabilizing agents. Part II. Bleaching power of a bisphosphine. Journal of pulp and paper science, 31(2), 69-75.

Chandra, R. P., & Ragauskas, A. J. (2005). Modification of high-lignin Kraft pulps with laccase. part 2. xylanase-enhanced strength benefits. Biotechnology progress, 21(4), 1302-1306.

Chandra, R. P., Felby, C., & Ragauskas, A. J. (2005). Improving Laccase-Facilitated Grafting of 4-Hydroxybenzoic Acid to High-Kappa Kraft Pulps. Journal of wood chemistry and technology, 24(1), 69-81.

Chandra, R. P., Lehtonen, L. K., & Ragauskas, A. J. (2004). Modification of high lignin content kraft pulps with laccase to improve paper strength properties. 1. Laccase treatment in the presence of gallic acid. Biotechnology progress, 20(1), 255-261.

Chandra, R. P., Wolfaardt, F., & Ragauskas, A. J. (2003). Biografting of celestine blue onto a high kappa kraft pulp. Applications of Enzymes to Lignocellulosics, 855, 66-80.

Chandra, R. P., & Ragauskas, A. J. (2002). Elucidating the effects of laccase on the physical properties of high-kappa kraft pulps. Progress in Biotechnology, 21, 165-172.

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Chandra, R. P., Chakar, F. S., Allison, L., Kim, D. H., Ragauskas, A. J., & Elder, T. J. (2002). Delving into the fundamental LMS delignification of high-kappa kraft pulps. Progress in Biotechnology, 21, 151-164.

Chandra, R. P., Beatson, R. P., de Jong, E., & Saddler, J. N. (1999). The effects of treatment with the white-rot fungus trametes versicolor and laccase enzymes on the brightness of Douglas-fir heartwood derived thermomechanical pulps. Journal of wood chemistry and technology, 19(1-2), 61-78.

de Jong, E., **Chandra, R. P.**, & Saddler, J. N. (1997). Effects of a fungal treatment on the brightiness and strength properties of a mechanical pulp from Douglas-fir. Bioresource technology, 61(1), 61-68.

Kyriacou, P., De Jong, E., Johansson, C. I., **Chandra, R. P**., & Saddler, J. N. (1998). Bleaching of western red cedar and Douglas-fir mechanical pulps. Tappi journal, 81(6), 188-195.

CONFERENCE PRESENTATIONS (Over the last 8 years)

(Older presentations available upon request)

Chandra RP, Ngo, TD, Ahvazi, B, Saddler, JN. The fate of lignin after biomass conversion and pulping processes: What is the value proposition? Society of Industrial Microbiology, Symposium for Biotechnology for Fuels and Chemicals, Seattle, WA, USA April 2019.

Wu J, Chandra RP, Saddler RP. Alkali–oxygen treatment prior to the mechanical pulping of hardwood enhances enzymatic hydrolysis and carbohydrate recovery through selective lignin modification. Society of Industrial Microbiology, Symposium for Biotechnology for Fuels and Chemicals, Seattle, WA, USA April 2019.

Bi R,. Chandra RP, Dalli S,, Figueroa D, Charron D, Saddler. ,Enhancing Dissolving Pulp Production and Co-product Value. Society of Industrial Microbiology, Symposium for Biotechnology for Fuels and Chemicals, Seattle, WA, USA April 2019.

Yeap R,, … Chandra RP, Saddler JN,, Can lignin enhance the hydrophobicity of microfibrillated cellulose (MFC) for thermoplastic applications? Society of Industrial Microbiology, Symposium for Biotechnology for Fuels and Chemicals, Seattle, WA, USA April 2019.

Dalli, S. …Chandra, R, Saddler, J. The challenges in quantifying cellulose accessibility and the potential of enzymes to produce nanofibrillated cellulose as well as enhanced biomass deconstruction. Society of Industrial Microbiology, Symposium for Biotechnology for Fuels and Chemicals, Seattle, WA, USA April 2019.

Takada M, Chandra RP, Saddler, How can we diminish the influence lignin has on the recalcitrance of biomass after steam pretreatment of various lignocellulosic substrates? Society of Industrial Microbiology, Symposium for Biotechnology for Fuels and Chemicals, Seattle, WA, USA April 2019.

Chandra, R….Saddler, J. Why pulping processes are best suited to be the pretreatment front ends for biorefineries. Symposium for Biotechnology for Fuels and Chemicals, Clearwater beach, USA, April 2018.
Chandra, R., Saddler, J.. “Where does lignin fit in the biorefinery concept?” IUFRO Division 5 Conference. June 2017, Vancouver, Canada.

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Google Scholar: https://scholar.google.ca/citations?user=xdtroCwAAAAJ

Chandra, R., Saddler, J.. "Lignin within the biorefinery concept, is it a challenge or an opportunity" In 39th Symposium on Biotechnology for Fuels and Chemicals. April 2017, San Francisco, California, USA.

Xue, S,…Chandra, R. et al. "A comparative study of recalcitrant oligosaccharides accumulation using ionic liquid, dilute acid, steam explosion and AFEX™ pretreated corn stover" Symposium on Biotechnology for Fuels and Chemicals. April 2017,San Francisco, Canada, USA.
Chandra, R., Saddler, J. et al. "Targeted hemicellulose removal and lignin modification greatly enhance cellulose accessibility/hydrolysis and overall sugar recovery from steam treated wood using low enzyme loadings" In 38th Symposium on Biotechnology for Fuels and Chemicals. April 2016, Baltimore, MD, USA.

Nakagame, S., Suzuki, T., Chandra, R.P., Saddler, J. "The production of lipid from the hydrolyzate of the steam pretreated substrates" In 38th Symposium on Biotechnology for Fuels and Chemicals. April 2016, Baltimore, MD, USA.

Dou, X., Chandra, R.P., Saddler, J., "A chemo-enzymatic approach to converting a conventional Kraft pulp to a higher value, dissolving pulp grade" " In 38th Symposium on Biotechnology for Fuels and Chemicals. April 2016, Baltimore, MD, USA.

Pletschke, B., Thoresen M., Malgas S., Chandra R.P., Van Dyk, S., Saddler, J. "The effect of pretreatment on enzyme synergism between various lignocellulolytic enzymes on hardwoods - a comparative evaluation of Populus, Eucalyptus and Acacia spp. as potential feedstocks for sugar release" In 38th Symposium on Biotechnology for Fuels and Chemicals. April 2016, Baltimore, MD, USA.

Hu, J. Zhai R., van der Zwan, T., Gourlay K., Chandra RP, and J. Saddler. Improved enzyme-substrate interactions enhance cellulose hydrolysis when using high biomass concentrations and low enzyme loadings. In 38th Symposium on Biotechnology for Fuels and Chemicals. April 2016, Baltimore, MD, USA.

Chandra RP and Saddler JN, Keynote Speaker: "Can we achieve effective hydrolysis of Poplar without removing lignin?" 7th International Colloquium on Eucalyptus Pulp, May 2015, Vitoria, Brazil.

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