Curriculum Vitae

Lew P. Christopher

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Education

Higher Institute for Chemical Engineering	Chemical Engineering	M.S. & 1982
Academy of Sciences, Microbiology Institute	Biotechnol./Biochem. Eng.	Ph.D. & 1990
University of the Orange Free State	Bioprocessing	Post-doc & 1992-1994

Appointments

2012-Present	Director, Center for Bioprocessing Research & Development; Associate Professor, Department of Civil & Environmental Engineering; South Dakota School of Mines & Technology, Rapid City, SD, USA
2010-2012	Director, Center for Bioprocessing Research & Development; Associate Professor, Department of Chemical & Biological Engineering, South Dakota School of Mines & Technology, Rapid City, SD, USA
2008-2010	Director & Professor, Center for Bioprocessing Research & Development, South Dakota School of Mines and Technology, Rapid City, SD, USA
2004-2007	Professor & Head of Sappi Biotechnology Laboratory, Department of Chemical Engineering, University of Pretoria, South Africa
2003-2007	Senior Research Scientist, Sappi Management Services Pty. Ltd., South Africa
1996-2002	Research Officer, Sappi Management Services Pty. Ltd., South Africa
1999-2004	Professor & Head of Sappi Biotechnology Laboratory, Department of Microbial, Biochemical & Food Microbiology, University of the Free State, South Africa
1996-1999	Lecturer, Department of Microbial, Biochemical & Food Biotechnology, University of the Free State, South Africa
1995-1996	Senior Researcher, Department of Microbial, Biochemical & Food Biotechnology, University of the Free State, South Africa
1992-1994	Post-doctoral Researcher, Department of Microbial, Biochemical & Food Biotechnology, University of the Free State, South Africa

Professional Activities

- Member-at-Large on Doctoral Advisory Committee, University of North Dakota, 2014-
- External Examiner for MS Thesis, Durban University of technology, Durban, South Africa, 2014-
- Panellist Reviewer: NSF Engineering Research Center (ERC) Proposal Panel, 10/2013
- Panellist Reviewer for U.S. Department of Energy (DOE): Great Lakes Bioenergy Research Center (GLBRC), 11/2013
- Who'sWho in America 2014, Marquis Who'sWho Publications, 68th Ed., 09/2013
- Ad-hoc Reviewer for U.S. Department of Agriculture - National Institute of Food and Agriculture (USDA NIFA), 07/2013
- Member of Biomedical Engineering Master's and Doctoral Program Advisory Council, South Dakota School of Mines and Technology, 2013-

- External Examiner, University of Manitoba, Canada, 04/2013
- Panellist Reviewer for U.S. Environmental Protection Agency - Small Business Innovation Research (EPA SBIR), 08/2012, 11/2013
- International Collaborator on Genome Canada Project "Microbial Genomics for Biofuels and Coproducts from Biorefining Processes" (MGCB2), 2012-
- Member of the International Scientific Advisory Committee of the Energy & Materials Research Conference (EMR), 2012
- Who's Who in Engineering Higher Education (WWEHE), 2012
- Member of the Science Advisory Board of the World Congress on Bioenergy (WCBE), 2011-2012
- Member of the Program Committee of Symposium on Enzymes & Biocatalysis (SEB), 2011-2012
- Ad-hoc Reviewer for U.S. Department of Agriculture - Small Business Innovation Research (USDA SBIR), 01/2011, 01/2012, 01/2013, 05/2013, 02/2014
- Member of the Biorefinery Committee of the Technical Association of the Pulp and Paper Industry (Tappi), 2010-
- Professional Engineer, Engineering Council of South Africa (ECSA), South Africa, 2008-
- Managing Director, Biorefinery World, LLC, 2012-
- Member of the Science Advisory Board of Myriant Corporation, Woburn, MA, 2010-2011
- Member of the International Scientific Advisory Committee on Renewable Resources and Biorefineries (RRB), 2009-2010
- Member of the Task Force for Development of Strategic Research Plan for the South Dakota School of Mines & Technology in the Focus Areas of *Energy & Environment*, *Materials & Manufacturing*, and *Biomedical Engineering*, 2009-2010
- Managing Director, Biorefinery International, LLC, 2008-2011
- Panel Expert on Bioprocessing Technologies for the National Research Foundation (NRF), South Africa, 2006-2008

Research Interests

- *Energy and Environmental Sustainability*: Integrated biorefineries, bioprocessing of renewable resources for sustainable production of biofuels and value-added biomaterials; environmentally sustainable solutions for municipal solid waste, industrial and waste water treatment plants
- *Biomedical Engineering*: Development of plant based natural compounds with important biomedical properties including anti-oxidant, anti-microbial, anti-tumor and other biological activities for use in a variety of pharmacological products

Research Output

• Books	4
• Book chapters	12
• Peer-reviewed articles	67
• Patents	8
• Provisional patents	1
• Invention disclosures	3
• Media coverage	19
• Invited presentations	37
• Presentations	248

Research Grants - South Africa (1997-2007): over R11.4 million (Government, Industry)

Research Grants - USA (2008-2014): $7.5 million (NSF, DOE, USDA, DOD, SD GOED, Industry)

Learning Facilitation

- Trained and supervised over 40 graduate and undergraduate students, post-docs, research scientists, and research assistants in Chemical and Biochemical Engineering, Biotechnology, Biochemistry, and Microbiology:
  - Students (past): Ph.D. (7); M.S. (15); B.S. Hons. (5); UG Students (2)
  - Students (current): Ph.D. (4); UG Students (2)
  - Post-docs/Research Scientists: 5 (past)
  - Research assistants: 6 (past)
- Courses taught: Biochemical Engineering (lecture and lab); Chemical Engineering Fluids (lab); Microbial and Enzymatic Processing (lecture); Environmental Engineering Unit Operations – Biological Treatment of Wastewater (lecture and lab)
- Served as External Examiner to graduate students in Chemical and Biochemical Engineering, Biosystems Engineering, Biotechnology, Biochemistry, and Microbiology

Research Mission

To add value to the national and global bio-economy by applying an integrated biorefinery approach in the research and development of cost effective and environmentally sound technologies for sustainable production of renewable biomass-derived energy and high value bioproducts

Rating (National Research Foundation, South Africa): *Internationally Recognized Established Researcher*

Honors: The 1996 Japan Society for the Promotion of Science (JSPS) Research Award

PhD Thesis: "Utilization of xylan and xylose containing sources of plant origin"

Summary: The purpose of the investigation was to evaluate the opportunities for utilization of xylan-rich agricultural residues (corn cobs, wheat bran, oat hulls, rye straw, etc) and industrial waste prehydrolyzate from the dissolving pulp viscose rayon industry for the simultaneous production of xylose and the enzyme glucose isomerase. The latter together with α-amylase and glucoamylase is used in the production of high-fructose syrups from corn starch. It was demonstrated that xylose could be obtained from the xylose-enriched hydrolyzates following several pretreatment, detoxification and purification steps. These hydrolyzates were shown to serve as a cost-effective substitute for xylitol which is traditionally used as carbon feedstock and inducer during glucose isomerase production. The research findings of this investigation were protected with three patent applications. In order to maximize the added value derived from plant biomass in a hypothetical biorefinery, a technological scheme for the complex utilization of these lignocellulosic materials was proposed.

Editorial Services

- *BioEnergy Research* (Associate and Guest Editor)
- *British Journal of Applied Science and Technology* (Chief Editor – Chemical & Biological Engineering)
- *Frontiers in Energy Research* (Associate Editor – Section on Bioenergy & Biofuels)
- *Institute of Integrated Omics and Applied Biotechnology IIOAB Journal* (Section Editor, Chemical Engineering & Bioprocessing)

Peer Reviewing (selected)

- *American Chemical Society*
- *Applied Biochemistry and Biotechnology*
- *Applied and Environmental Microbiology*
- *Applied Microbiology and Biotechnology*
- *BioEnergy Research*
- *Bioresource Technology*

- *Biotechnology Letters*
- *Current Microbiology*
- *Enzyme and Microbial Technology*
- *Extremophiles*
- *Journal of Biotechnology*
- *Journal of Chemical Technology and Biotechnology*
- *Journal of Industrial Microbiology and Biotechnology*
- *Journal of Renewable & Sustainable Energy*
- *Process Biochemistry*

Organizing Committees

- Member of the Organizing Committee of the International Energy Agency (IEA) Workshop "*Biotechnology for the Conversion of Lignocellulose*", August 22-26, 1999, Itala Game Reserve, KwaZulu-Natal, South Africa
- Chairman of the Organizing Committee of the *9th International Conference on Biotechnology in the Pulp and Paper Industry*, October 10-14, 2004, Durban, South Africa

Session Chair/Panel Moderator

- 36th International Symposium on Biotechnology for Fuels and Chemicals (SBFC), Clearwater Beach, April 28-May 1, 2014 (*Bioprocessing, Reaction Design, and Separations Technology*)
- The 5th International Conference on Applied Energy, Pretoria, South Africa, July 1-4, 2013 (*Biodiesel*)
- 2012 AIChE National Meeting, Pittsburgh, PA, October 28 - November 2, 2012 (Process Development Division: *Bioprocessing of Lignocellulosic Biomass to Biofuels and Value-Added Bioproducts*)
- International Bioenergy & Bioproducts Conference (IBBC 2012), Savannah, GA, October 17-19, 2012 (Session 7: *Recent Advances in Enzymatic Saccharification*)
- International Symposium on Catalysis for Clean Energy and Sustainable Chemistry (CCES2012), Madrid, Spain, June 27-29, 2012 (*Plenary Lecture – Chemical Conversion of Biomass onto New Generations of Renewable Fuels, Polymers, and Value-Added Products*)
- The 2012 Energy & Materials Research Conference (EMR2012), Torremolinos, Spain, June 20-22, 2012 (*Energy Production from Biomass and Biofuels* - part 2)
- The 3rd Symposium on Enzymes & Biocatalysis, Xian, China, April 25-28, 2012 (Track 500: *Cellulosomes, Cellulases & Other Carbohydrate Modifying Enzymes*)
- The 2nd Annual World Congress of Bioenergy, Xian, China, April 25-28, 2012 (Track 1400: *Biorefinery/Bioprocess Tech*)
- 2012 International Biomass Conference & Expo, Denver, CO, April 16-19, 2012 (Track 5: *Advanced Biofuels & Biobased Chemicals*)
- The 2011 Annual AIChE Meeting, Minneapolis, MN, October 16-21, 2011 (Process Development Division: *Alternative Feedstocks for Energy and Chemicals*)
- The 2nd Symposium on Enzymes & Biocatalysis, Dalian, China, April 25-29, 2011 (Track 4-7: *Enzymes for Paper*)
- The 1st Annual World Congress of Bioenergy, Dalian, China, April 25-29, 2011 (Track 3-4: *Bioenergy from Wood and Forestry Technologies*)
- 2010 International Fuel Ethanol Workshop & Expo, St Louis, MO, June 14-17, 2010 (Track 3: *Cellulosic Ethanol: New Developments: Enzymes for Cellulosic Ethanol Production)*
- 2010 AIChE National Meeting, Salt Lake City, UT, November 7-12, 2010 (Forest Bioproducts Division 17 - Session: *Biorefinery-Improved Utilization of Co-Products from Biorefinery*)

- 6th Annual BIO World Congress on Industrial Biotechnology & Bioprocessing, Montreal, Canada, July 19-22, 2009 (Track 2 –Feedstocks and Sustainability: *Increasing the Value of Wood Based Lignocellulosic Fiber*)
- 31st Symposium on Biotechnology for Fuels and Chemicals, San Francisco, CA, May 3-6, 2009 (Session V: *Enzyme Science and Technology I*)
- 2002 Tappsa Pulp and Paper Week "Adding Value in a Global Industry", Durban, South Africa, 2002
- 2000 Tappsa Pulp and Paper Week "2000 and beyond", Durban, South Africa, 2000
- BIOY2K Combined Millenium Meeting 2000, Workshop "Biotechnology in the Pulp and Paper Industry", Grahamstown, South Africa, 2000
- IAE Workshop "Biotechnology for the Conversion of Lignocellulose", Itala Game Reserve, South Africa, 1999
- Biotech SA '97, Grahamstown, South Africa, 1997

Collaborations (selected)

- University of Manitoba, Canada. Project: Genomics and proteomics of hydrogen-producing mesophiles and thermophiles (2011-present)
- South Dakota State University, Brookings, SD, USA. Project: Development of biofuels and bioprocessing technologies in South Dakota (2008-Present)
- Technical University of Budapest, Budapest, Hungary. Project: Solid state fermentation of enzymes (1995-2007)
- Technical University of Vienna, Vienna, Austria. Project: Oxidative lignin-degrading enzymes (1999-2004)
- Slovak Academy of Sciences, Bratislava, Slovakia. Project: Mode of action of xylan-degrading enzymes (1998-2000)
- National Chemical Laboratory, Pune, India. Project: Screening and production of thermo-tolerant xylanolytic enzymes (1998-1999)
- University of Wisconsin Biotechnology Center and Institute for Microbial and Biochemical Technology, Madison, WI, USA. Project: Biopulping and biobleaching (1994-1999)

Professional Societies (current)

- American Chemical Society (ACS), *Division of Cellulose and Renewable Materials; Division of Biochemical Technology*
- American Institute of Chemical Engineers (AIChE), *Forest Bioproducts Division; Process Development Division*
- Engineering Council of South Africa (ECSA)
- Society for Biological Engineering (SBE)
- Society for Industrial Microbiology and Biotechnology (SIMB)
- Technical Association of the Pulp and Paper Industry (TAPPI)

Research Output

Books

1. Christopher, L.P., Ed. (2013) *Integrated Forest Biorefineries: Challenges and Opportunitie*s. Royal Society of Chemistry, Cambridge, UK (ISBN 978-184973-321-2).
2. Christopher, L.P. (2007) *Development of a Biotechnological Approach to the Management of Waste Waters from the Pulp and Paper Industry*, WRC No 763/1/07, Pretoria, South Africa, (ISBN No 978-1-77005-564-3).

3. Christopher, L.P. (2005) *Bio-remediation and Bio-utilization of Pulping and Bleaching Waste Waters*, WRC No 1367/1/05, Pretoria, South Africa (ISBN No 1-77005-291-7).
4. Christov, L.P. (2003) *Further Development of a Biotechnological Approach to the Management of Waste Waters from the Pulp and Paper Industry*, WRC No 1082/1/03, Pretoria, South Africa (ISBN No 1-86845-959-4).

Book chapters

1. Christopher, L.P. and Hemanathan, K. Clean and sustainable biodiesel production. In: (J. Yan, Ed.) *Handbook of Clean Energy Systems* (submitted).
2. Christopher, L.P. (2013) Integrated forest biorefineries: Current state and development potential. In: *Integrated Forest Biorefineries: Challenges and Opportunitie*s (Christopher, L.P., Ed.), Royal Society of Chemistry, Cambridge, U.K., 2013, Chapter 1, pp. 1-66.
3. Christopher, L.P. (2012) Adding value prior to pulping: Bioproducts from hemicellulose. In: *Global Perspectives on Sustainable Forest Management* (Okia, C.A., Ed.), InTech, Rijeka, Croatia, 2012, Chapter 14, pp. 225-246.
4. Zambare, V.P., Zambare, A. and Christopher, L.P. (2011) Enzymatic hydrolysis of hemicellulose from corn stover and prairie cord grass. In: *Advances in Biotech Research* (Deshmukh, A.M., Jawalikar, J.D. and Waghmare, S.S., Eds.), Editors and Microbiologist Society, Osmanabad, India, 2011, pp. 300-313.
5. Christopher, L. Xylanases: Properties and applications (2004) In: *Concise Encyclopedia of Bioresource Technology* (Pandey, A., Ed.), The Haworth Press, Inc., Binghamton, NY, 2004, pp. 601-609.
6. Szendefy, J., Szakács, G. and Christopher, L. (2004) Biobleaching efficiency of *Aspergillus oryzae* xylanases produced by solid substrate fermentation. In: *Lignocellulose Biodegradation* (Saha, B. and Hayashi, K., Eds.), American Chemical Society, Washington, DC, 2004, pp. 316-338.
7. Szendefy, J., Szakács, G. and Christopher, L. (2003) *In situ* solid-state fermentation and utilization of xylanase in pulp bleaching. In: *Application of Enzymes to Lignocellulosics* (Mansfield, S. and Saddler, J.N., Eds.), American Chemical Society, Washington, DC, 2003, pp. 255-284.
8. Bissoon, S., Singh, S. and Christov, L. (2002) Evaluation of the bleach-enhancing effect of xylanases on bagasse pulp. In: *Biotechnology in the Pulp and Paper Industry* (Viikari, L. and Lantto, R., Eds.), Progress in Biotechnology, Elsevier, Amsterdam, pp 247-254. ISBN 0-444-51078-8
9. Kandioller, G. and Christov, L. (2001) Evaluation of the delignification and bleaching abilities of selected laccases with HBT on different pulps. In: *Oxidative Delignification Chemistry: Fundamentals and Catalysis* (Argyropoulos, D.S., Ed.), chap. 27, ACS Symp. Ser. 785, American Chemical Society, Washington, D.C., pp. 427-443.
10. Ferraz, A., Christov, L.P. and Akhtar, M. (1998) Fungal pretreatment for organosolv pulping and dissolving pulp production. In: *Environmentally Friendly Pulping and Bleaching Methods* (Young, R.A. and Akhtar, M., Eds.), chap. 13, John Wiley & Sons, Inc., New York, pp. 421-447.
11. Christov, L.P. & B.A. Prior (1996) Reduction of active chlorine charges in bleaching of xylanase-pretreated sulfite pulp. In: *Enzymes for Pulp and Paper Processing* (Jeffries, T.W., and Viikari, L., eds.), chap. 16, ACS Symp. Ser. 655, American Chemical Society, Washington, D.C., pp. 208-227.
12. Christov, L.P., Akhtar, M. and Prior, B.A. (1996) Biobleaching in dissolving pulp production. In: *Biotechnology in the Pulp and Paper Industry*: *Recent Advances in Applied and Fundamental Research* (Messner, K. and Srebotnik, E., Eds.), Facultas Universitätsverlag, Vienna, pp. 625-628.

Peer-reviewed articles

1. Christopher, L.P., Yao, B. and Ji, Y. (2014) Lignin biodegradation with laccase-mediator systems (in press).

2. Christopher, L.P., Kapatral, V., Vaisvil, B., Emel, G. and DeVeaux, L.C. (2014) Draft genome sequence of a new homofermentative lactic acid-producing *Enterococcus faecalis* isolate CBRD01. *Genome A* (in press).
3. Raj, S.M., Talluri, S. and Christopher, L.P. (2014) Enhanced lactic acid production by a novel homofermentative *Enterococcus faecalis* isolate. *Microb. Biotechnol.* (accepted).
4. Christopher, L.P., Hemanathan, K. and Zambare, V.P. (2014) Enzymatic biodiesel: Opportunities and challenges. *Appl Energy* 119: 497-520.
5. Talluri, S., Raj, S.M. and Christopher, L.P. (2013) Consolidated bioprocessing of untreated switchgrass to hydrogen by the extreme thermophile *Caldicellulosiruptor saccharolyticus* DSM 8903. *Bioresour. Technol*. 139: 272-279. http://dx.doi.org/10.1016/j.biortech.2013.04.005.
6. Zambare, V., Barh, D. and Christopher, L.P. (2012) Optimization of enzymatic hydrolysis of prairie cordgrass for improved ethanol production. *J. Renew. Sustain. Energ.* 4, 033118; DOI: 10.1063/1.4729587.
7. Zambare, V. and Christopher, L.P. (2012) Biopharmaceutical potential of lichens. *Pharma. Biol.* 50:778-798. DOI: 10.3109/13880209.2011.633089.
8. Hollmann, A., Saviello, M., Delfederico, L., Saraiva, T.D.L., Barh, D., Jain, N., Tiwari, S., Chandra, S., Gupta, K., Zambare, V., Kumar, A., Christopher, L., Misra, A.N., Kumavath, R.N**.,** Azevedo, V., Semorile, L. and Miyoshi, A. (2012) Tight controlled expression and secretion of *Lactobacillus brevis* SlpA in *Lactococcus lactis. Biotechnol. Lett*. 34: 1275-1281. DOI: 10.1007/s10529-012-0887-6.
9. Subramanian, M.R., Talluri, S. and Christopher, L.P. (2012) Thermophilic hydrogen production from renewable resources: Current status and future perspectives. *Bioenerg. Res.* 5: 515-531. DOI 10.1007/s12155-012-9184-4.
10. Zambare, V. and Christopher, L.P. (2012) Optimization of enzymatic hydrolysis of corn stover for improved ethanol production. *Energy Explor. Exploit.* 30: 193-206.
11. Christopher, L.P. (2011) Biomass bioprocessing. *Bioenerg. Res.* 4: 223-224.
12. Zambare, V. and Christopher, L.P. (2011) Response surface analysis of cellulase production in Bacillus sp. SB-18. *Int. J. Food Ferment. Technol.* 1: 63-68.
13. Zambare, V., Bhalla, A., Muthukumarappan, K, Sani, R. and Christopher, L.P. (2011) Bioprocessing of agricultural waste to ethanol utilizing a cellulolytic extremophile. *Extremophiles* 15: 611-618.
14. Zambare, V. and Christopher, L. (2011) Optimization of culture conditions for production of cellulase by a thermophilic *Bacillus* strain. *J. Chem. Chem. Eng.* 5: 521-527.
15. Zambare, V., Zambare, A., Muthukumarappan, K. and Christopher, L.P. (2011) Biochemical characterization of thermophilic lignocellulose-degrading enzymes and their potential for biomass bioprocessing. *Int. J. Energ. Environ.* 2: 99-112.
16. Zambare, V. and Christopher, L.P. (2011) Statistical analysis of cellulase production in *Bacillus amyloliquefaciens* UNPDV-22. *Extreme Life, Biospeology & Astrobiology Int. J. Bioflux Soc.* 3: 38-45.
17. Zambare, V., Zambare, A., Muthukumarappan, K. and Christopher, L.P. (2011) Potential of thermostable cellulases in bioprocessing of switchgrass to ethanol. *BioResources* 6: 2004-2020.
18. Tungal, R., Shende, R.V. and Christopher, L.P. (2011) Nickel catalyzed high pressure hydrothermal processing of biomass for H_2 production. *J. Energy Power Eng.* 5: 504-514.
19. Zambare, V. and Christopher, L.P. (2010) Solid state fermentation and characterization of a cellulase enzyme system from *Aspergillus niger* SB-2. *Int. J. Biol. Sci. Technol*. 2: 22-29.
20. Rastogi, G., Bhalla, A., Adhikari, A., Bischoff, K.M., Hughes, S.R, Christopher, L.P. and Sani, R. (2010) Characterization of thermostable cellulases produced by *Bacillus* and *Geobacillus* strains. *Bioresour. Technol.* 101: 8798-8806.

21. Zambare, V.P., Zambare, A.V. and Christopher, L.P. (2010) Antioxidant and antibacterial activity of extracts from lichen *Xanthoparmelia somloensis*, native to the Black Hills, South Dakota, USA. *Int. J. Med. Sci. Technol.* 3: 46-51.
22. Chipeta, Z.A., du Preez, J.C. and Christopher, L. (2008) Effect of cultivation pH and agitation rate on growth and xylanase production by *Aspergillus oryzae* in spent sulphite liquor. *J. Ind. Microbiol. Biotechnol.* 35: 587-594.
23. Szendefy, J., Szakacs, G. and Christopher, L. (2006) Potential of solid-state fermentation enzymes of *Aspergillus oryzae* in biobleaching of paper pulp. *Enzyme Microb. Technol.* 24: 1149-1156.
24. Chipeta, Z.A., du Preez, J.C., Szakacs, G. and Christopher, L. (2005) Xylanase production by fungal strains on spent sulphite liquor. *Appl. Microbiol. Biotechnol*. 69: 71-78.
25. Christopher, L., Bissoon, S., Singh, S., Szendefy, J. and Szakacs, G. (2005) Bleach-enhancing abilities of *Thermomyces lanuginosus* xylanases produced by solid-state fermentation. *Process Biochem.* 40: 3230-3235.
26. Van Driessel, B. and Christopher, L. (2004) Mechanisms prevalent during bioremediation of wastewaters from the pulp and paper industry. *Crit. Rev. Biotechnol.* 24: 85-95.
27. Bissoon, S., Singh, S. and Christov, L. (2003) Synergistic interactions of purified xylanases on bagasse pulp hemicellulose. *Tappsa J.* 2: 28-30.
28. Christov, L. and Van Driessel, B. (2003) Waste water bioremediation in the pulp and paper industry. *Ind. J. Biotechnol.* 2: 444-450.
29. Bissoon, S., Christov, L. and Singh, S. (2002) Bleach boosting effects of purified xylanase from *Thermomyces lanuginosus* SSBP on bagasse pulp. *Process Biochem.* 36 (7): 567-672.
30. Van Driessel, B. and Christov, L. (2002) Adsorption of colour from a bleach plant effluent using biomass and cell wall fractions from *Rhizomucor pusillus. J. Chem. Technol. Biotechnol.* 77: 155-158.
31. Madlala, A.M., Bissoon, S., Singh, S. and Christov, L. (2001) Xylanase-induced reduction of chlorine dioxide consumption during elemental chlorine-free bleaching of different pulp types. *Biotechnol. Lett.* 23: 345-351.
32. Bissoon, S., Bandu, V., Christov, L. and Singh, S. (2001) Immunolocalisation of a purifed *Thermomyces lanuginosus* xylanase during hydrolysis of bagasse pulp. *Proc. Microsc. Soc. South. Afr.*, pp 14-19, ISBN 0-620-28339-4.
33. Van Driessel, B. and Christov, L. (2001) Decolorization of bleach plant effluent by mucoralean and white-rot fungi in a rotating biological contactor reactor. *J. Biosc. Bioeng.* 92 (3): 271-276.
34. Szendefy, J., Szakacs, G. and Christov, L. (2001) Production of xylanase with thermophilic fungi by solid substrate fermentation. *Acta Microbiol. Immunol. Hung.* 33-37.
35. Christov, L., Biely, P., Kalogeris, E., Christakopoulos, P., Prior, B.A. and Bhat, M.K. (2000) Effects of purified endo-ß-1,4-xylanases of family 10 and 11 and acetyl xylan esterases on eucalypt sulfite dissolving pulp. *J. Biotechnol.* 83: 231-244.
36. Mosai, S., Wolfaardt, J.F., Prior, B.A. and Christov, L.P. (1999) Evaluation of selected lignin-degrading fungi for biosulphite pulping. *Biores. Technol.* 68: 89-93.
37. Christov, L.P., Szakacs, G. and Balakrishnan, H. (1999) Production, partial characterisation and use of fungal cellulase-free xylanases in pulp bleaching. *Process Biochem.* 34: 511-517.
38. Rahouti, M., Seigle-Murandi, F., Steiman, R. and Christov, L.P. (1999) Growth of 1044 strains and species of fungi on 7 phenolic lignin model compounds. *Chemosphere* 38: 2549-2559.
39. Christov, L.P., Myburgh, J., O'Neill, F.H., Van Tonder, A. and Prior, B.A. (1999) Modification of the carbohydrate composition of sulfite pulp by purified and charaterized ß-xylanase and ß-xylosidase of *Aureobasidium pullulans*. *Biotechnol. Progr.* 15: 196-200.
40. Christov, L.P., van Driessel, B. and du Plessis, C.A. (1999) Fungal biomass from *Rhizomucor pusillus* as adsorbent of chromophores from a bleach plant effluent. *Process Biochem.* 35: 91-95.
41. Christov, L.P. and Steyn, M.G. (1999) The use of the white-rot fungus *Trametes nivosa* in bioremediation of pulp effluents. *Proc. Afr. Intern. Environ. Protec. Symp.*, 2-8 July 1999, Pietermaritzburg, South Africa. ISBN 0-620-239-45-X.

42. Van Driessel, B., du Plessis, C.A. and Christov, L.P. (1999) Adsorption of colour from a bleachery effluent using a mucoralean fungus. *Proc. Afr. Intern. Environ. Protec. Symp.*, 2-8 July 1999, Pietermaritzburg, South Africa. ISBN 0-620-239-45-X.
43. Christov, L.P., Szakacs, G., Rele, M.V. and Balakrishnan, H. (1999) Screening of cellulase-free fungal xylanases and evaluation of their performance on sulfite dissolving pulp. *Biotechnol. Techn.* 13: 313-316.
44. Christov, L.P. and Prior, B.A. (1998) Research in biotechnology for the pulp and paper industry in South Africa. *S. Afr. J. Sci.* 94: 695-698.
45. Christov, L.P., Akhtar, M. and Prior, B.A. (1998) The potential of biosulfite pulping in dissolving pulp production. *Enzyme Microb. Technol*. 23: 70-74.
46. Christov, L.P. and Prior, B.A. (1997) Bleaching response of sulfite pulps to pretreatment with xylanases. *Biotechnol. Progr*. 13: 695-698.
47. Christov, L.P., Myburgh, J., Van Tonder, A. and Prior, B.A. (1997) Hydrolysis of extracted and fibre-bound xylan with *Aureobasidium pullulans* enzymes. *J. Biotechnol.* 55: 21-29.
48. Christov, L.P., and Prior, B.A. (1996) Repeated treatments with *Aureobasidium pullulans* hemicellulases and alkali enhance biobleaching of sulphite pulps. *Enzyme Microb. Technol.* 18: 244-250.
49. O'Neill, F.H., Christov, L.P., Botes, P.J. and Prior, B.A. (1996) Rapid and simple assay for feruloyl and *p*-coumaroyl esterases. *World J. Microbiol. Biotechnol.* 12: 239-242.
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2. Utilization of freshwater diatom *Didymosphenia geminate*, September 22, 2011. South Dakota School of Mines and Technology.
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Invited presentations

2014 Forest Products Biorefineries: Factories for Complex Utilization of Biomass. KTH Royal Institute of Technology, Stockholm, Sweden, March 24, 2014.

2014 Advantages of Thermophilic Consolidated Bioprocessing for Sustainable Production of Hydrogen. *22nd European Biomass Conference and Exhibition*, Hamburg, Germany, June 23-26, 2014.

2014 Biorefining of Lignocellulosic Biomass for Sustainable Production of Biofuels and Value-Added Bioproducts. Lakehead University, Thunder Bay, Canada, February 25, 2014.

2013 Potential for Bioenergy Research and Development in South Dakota. Durban University of Technology, Durban, South Africa, June 27, 2013.

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2013 Biofuel and Biochemical Production in an Integrated Forest Biorefinery. University of Manitoba, Winnipeg, Canada, April 9, 2013.

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2012 Discovery and Exploitation of Extremophiles in Bioenergy Production. Institute of Enzyme Engineering, Shannxi Academy of Sciences, Xi'an, China, April 23, 2012. (http://enzyme-tec.xab.cas.cn/xwdt/snxw/201206/t20120618_93578.html)

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2011 Potential of a Thermophilic Isolate and Its Enzymes in Ethanol Fermentation of Switchgrass. *2011SIM Annual Meeting and Exhibition*, New Orleans, LA, USA, July 28, 2011.

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Presentations

1. Christopher, L.P. (2014) Advantages of thermophilic consolidated bioprocessing for sustainable production of hydrogen. *22nd European Biomass Conference and Exhibition (EU BC&E 2014)*, June 23-26, 2014, Hamburg, Germany.
2. Christopher, L.P. (2014) Thermophilic consolidated bioprocessing for sustainable hydrogen production. *36th Symposium on Biotechnology for Fuels and Chemicals*, April 28-May 1, 2014, Clearwater Beach, FL.
3. Christopher, L.P., Seiler, S.T., Zhuang, Y. And Miskimins, K. (2014) Biological activities of corn cob xylan. *36th Symposium on Biotechnology for Fuels and Chemicals*, April 28-May 1, 2014, Clearwater Beach, FL.
4. Christopher, L.P., Brzonova, I., Chebeir, M., Kubatova, A., Kozliak, E. and Ji, Y. (2014**)** Microbial production of low molecular weight phenolics and aromatics. *36th Symposium on Biotechnology for Fuels and Chemicals*, April 28-May 1, 2014, Clearwater Beach, FL.
5. Seiler, S., Zhuang, Y., Miskimins, K. and Christopher, L.P. (2014) Biomedical properties of xylan extracted from corn cobs. *5th Nordic Wood Biorefinery Conference (2014 NWBC)*, March 25-27, 2014, Stockholm, Sweden.
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7. Christopher, L.P., Zambare, V.P., Bhalla, B., Muthukumarappan, K. and Sani, R.K. (2014) Bioethanol production from lignocellulosic biomass utilizing thermophilic cellulases. *5th Nordic Wood Biorefinery Conference (2014 NWBC)*, March 25-27, 2014, Stockholm, Sweden.
8. Christopher, L.P. (2013) Thermophilic consolidated bioprocessing of cellulosic materials to biohydrogen. *Bio Pacific Rim Summit on Industrial Biotechnology and Bioenergy*, December 8-11, 2013, San Diego, CA.
9. Brzonova, I., Chebeir, M., Kubatova, A., Kozliak, E., Christopher, L.P. and Ji, Y. (2013) Biodegradation of kenaf for production of low molecular weight phenolics. *Bio Pacific Rim Summit on Industrial Biotechnology and Bioenergy*, December 8-11, 2013, San Diego, CA.
10. Yeash, E.A., Knudsen, K., Zhuang, Y., Miskimins, K. and Christopher, L.P. (2013) Pharmaceutical potential of selected lichen species. *15th Annual NIH SBIR/STTR Conference*, October 28-30, 2013, Sioux Falls, SD.
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13. Christopher, L.P. (2013) Center for Bioprocessing Research and Development: A recent update. *8th Annual SD Biotech Summit and Annual Meeting*, September 19, 2013, Sioux Falls, SD.
14. Zambare, V.P., Zambare, A.V. and Christopher, L.P. (2013) Optimization of xylanase production from *Penicillium pinophilum* by a two-step statistical strategy: Plackett-Burman and Response Surface Methodology. *2nd International Society of Biotechnology Conference*, July 8-10, 2013, Antwerp, Belgium.
15. Zambare, V.P., Zambare, A.V. and Christopher, L.P. (2013) *In vitro* studies on bioactivities of lichen *Xanthoparmelia somloensis. 2nd International Society of Biotechnology Conference*, July 8-10, 2013, Antwerp, Belgium.
16. Christopher, L.P. (2013) Exploitation of thermophiles for biofuel production. *5th International Conference on Applied Energy*, July 1-4, 2013, Pretoria, South Africa.
17. Christopher, L.P., Talluri, S. and Subramanian, M. (2013) Consolidated bioprocessing of municipal solid waste and energy crops to hydrogen. *5th International Conference on Applied Energy*, July 1-4, 2013, Pretoria, South Africa.
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19. Venkata, A.C., Cetin, B. Nam, S. and Christopher, L.P. (2013) Effects of fines content on the properties of enzyme-stabilized gravel roadways in South Dakota**.** *Undergraduate Research Symposium*, April 2, 2013, SDSM&T, Rapid City, SD.
20. Zambare, V.P., Zambare, A.V. and Christopher, L.P. (2013) Production optimization and characterization of extremophilic lipase from *Geobacillus thermodenitrificans. International Conference on Advances in Biotechnology and Patenting*, February 18-21, 2013, Tiruchirappalli, Tamil Nadu, India.
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23. Talluri, S., Subramanian, M.R. and Christopher, L.P. (2012) Thermophilic production of hydrogen from switchgrass and municipal solid waste, *MGCB2 Annual General Meeting*, November 5-6, 2012, Winnipeg, Manitoba, Canada.
24. Lai, C., Zhang, L., Fong, H. and Christopher, L.P. (2012) Lignin utilization in production of electrospun carbon nanofibers with potential for energy storage applications. *2012 AIChE National Meeting*, October 28 – November 2, 2012, Pittsburgh, PA.
25. Talluri, S., Subramanian, M.R. and Christopher, L.P. (2012) Advantages of thermophilic hydrogen production from lignocellulosic biomass. *2012 AIChE National Meeting*, October 28 – November 2, 2012, Pittsburgh, PA.
26. Christopher, L.P. Thermophiles for biofuels production. *2012 AIChE National Meeting*, October 28 – November 2, 2012, Pittsburgh, PA.
27. Talluri, S., Subramanian, M.R. and Christopher, L.P. (2012) Single step bioprocessing of biomass to biohydrogen. *International Bioenergy & Bioproducts Conference (IBBC 2012)*, October 17-19, 2012, Savannah, GA.

28. Tungal, R., Shende, R.V., Benjamin, K.M. and Christopher, L.P. (2012) Catalytic liquefaction of biomass for generation of hydrogen and hydrocarbon fuels. *International Symposium on Catalysis for Clean Energy and Sustainable Chemistry*, June 27-29, 2012, Madrid, Spain.
29. Christopher, L.P., Lai, C, Zhang, L. And Fong, H. (2012) Preparation of electrospun carbon nanofibers with increased specific surface area utilizing low cost lignin by-product. (2012) *The Energy & Materials Research Conference (EMR2012)*, June 20-22, 2012, Torremolinos, Malaga, Spain.
30. Christopher, L.P. Talluri, S. and Subramanian, M.R. (2012) Consolidated bioprocessing of lignocellulosic biomass and waste for cost-efficient biohydrogen production. *The Energy & Materials Research Conference (EMR2012)*, June 20-22, 2012, Torremolinos, Malaga, Spain.
31. Zambare, V.P, Sani, R.K. and Christopher, Lew P. (2012) Potential of thermostable cellulases in reduction of bioprocessing costs of ethanol production from switchgrass. 2012 *International Fuel Ethanol Workshop & Expo* (*FEW*), June 4-7, 2012, Minneapolis, MN.
32. Talluri, S., Subramanian, M.R. and Chrsitopher, Lew P. (2012) Towards cost-efficient biohydrogen production on switchgrass utilizing a thermophilic strain of *Caldicellulosiruptor saccharolyticus*. *34th Symposium on Biotechnology for Fuels and Chemicals*, April 30-May 3, 2012, New Orleans, LA.
33. Christopher, L.P. (2012) Bioproducts from hemicellulose in a forest-based biorefinery. *The 2nd Annual World Congress of Bioenergy*, April 25-28, 2012, Xi'an, China.
34. Christopher, L., Zambare, V., Bhalla, A., Muthukumarappan, K. and Sani, R. (2012) Exploitation of thermophilic cellulases for improved ethanol production from lignocellulosic biomass. *The 3rd Symposium on Enzymes & Biocatalysis*, April 25-28, 2012, Xi'an, China.
35. Zambare, V.P. and Christopher, Lew P. (2012) Exploitation of thermophilic enzymes for biodiesel production. 2012 *International Biomass Conference and Expo*, April 16-19, 2012, Denver, CO.
36. Talluri, S., Subramanian, M.R. and Christopher, L.P. (2012) Utilization of lignocellulosic biomass and waste in hydrogen production. *2012 International Biomass Conference and Expo*, April 16-19, 2012, Denver, CO.
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38. Zambare, V.P., Bhalla, A., Sani, R.K. and Christopher, L.P. (2012) Biomass conversion to fermentable sugars with a thermophilic microbial consortium. *2012 International Biomass Conference and Expo*, April 16-19, 2012, Denver, CO.
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40. Zambare, V.P. and Christopher, L.P. (2012) Enhanced xylanase production from corn stover using statistical methods. *2012 International Biomass Conference and Expo*, April 16-19, 2012, Denver, CO.
41. Talluri, S., Subramanian, M.R. and Christopher, L.P. (2012) Production of hydrogen from biomass utilizing a thermophilic bacterium isolate. *2012 CBRD Annual Advisory Board Meeting*, March 8-9, 2012, Rapid City, SD.
42. Christopher, L.P., Muthukumarappan, K. and Zambare, V. (2012) Bioprocessing of prairie cordgrass to ethanol. *2012 CBRD Annual Advisory Board Meeting*, March 8-9, 2012, Rapid City, SD.
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44. Christopher, L.P. and Zambare, V.P. (2012) Screening of lipase-producing microorganisms for potential use in biodiesel production. *2012 CBRD Annual Advisory Board Meeting*, March 8-9, 2012, Rapid City, SD.
45. Christopher, L.P. and Zambare, V.P. (2012) Production of xylanase on corn stover. *2012 CBRD Annual Advisory Board Meeting*, March 8-9, 2012, Rapid City, SD.
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47. Talluri, S., Subramanian, M.R and Christopher, L.P. (2011) Biohydrogen production from lignocellulosic biomass and municipal solid waste. *NSF I/UCRC Bioenergy Center Bi-annual Meeting*, November 3-4, Denver, CO.
48. Talluri, S., Subramanian, M.R and Christopher, L.P. (2011) Biological hydrogen production from municipal solid waste. *2011 AIChE Annual Meeting*, October 16-21, 2011, Minneapolis, MN.
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50. Christopher, L.P., Zambare, V., Zambare, A. and Muthukumarappan, K. (2011) Bioprocessing of switchgrass to ethanol utilizing thermostable cellulases. *2011 AIChE Annual Meeting*, October 16-21, 2011, Minneapolis, MN.
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135. Christopher, L. and Gibbons, W. (2009) Biofuels and bioprocessing research and development in South Dakota. *IEA Bioenergy "Biofuels & Bioenergy: A Changing Climate"*, August 23-26, Vancouver, Canada.
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