CURRICULUM VITAE

Personal Information			
Name	Liangcai Peng	Gender	Male
Position Title		Professor of Plant Biochemistry, Director of Biomass & Bioenergy Research Center	
Working Department		College of Plant Sciences and Technology	
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Research Interest

Plant cellulose biosynthesis; Plant cell wall genomics and metabolism; Carbon partitioning; Biomass production and biofuel application; Bioenergy crop genetics and breeding.

Professional Memberships

Members of China Plant Physiology Society, China Genetics Society, The American Society of Plant Biologists, The Australian and New Zealand Society for Cell Biology, The Australian Society of Plant Physiologists, The Australian Society for Biochemistry and Molecular Biology.

Chairs of the 1st International Symposium on Bioenergy and Biotechnology; The 2nd International Symposium on Bioenergy and Biotechnology in conjunction with Miscanthus Workshop; The 3rd International Symposium on Bioenergy and Biotechnology.

Other Roles

Education & Working Experience

Education:

1997.8: Ph.D. in Biochemistry and Molecular Biology. Research School of Biological Sciences (RSBS), The Australian National University (ANU), Canberra, Australia.

1987.9: M.Sc. in Plant Biochemistry. The Post-graduate School, Chinese Academy of Agricultural Sciences (CAAS), Beijing, China.

1983.8: B.Sc.in Agronomy. Department of Agronomy, Huazhong Agricultural University, Wuhan, China.

Research and Teaching Experiences:

2006.1-Present: Professor, Changjiang Scholar, National Key Laboratory of Crop Genetic Improvement. College of Plant Sciences and Technology, Huazhong Agricultural University.

2000.6-2004.5: Research Geneticist. Plant and yeast responses to oxidative and abiotic stress, and genetic manipulation for plant stress tolerance and gossypol degradation. Plant Gene Expression Center, ARS/USDA, University of California-Berkeley, Albany, CA.

1997.9-2000.5: Postdoctoral Fellow. Plant cellulose biosynthesis. Section of Plant Biology, UCD, CA.

1994.3-1997.9: Post-graduate Student for Ph.D. Dissertation title: Characterization of cellulose biosynthesis in *Arabidopsis thaliana*. Plant Cell Biology Group, RSBS, ANU, Canberra, Australia.

1993.2-1994.2: ANU Visiting Research Fellow. Plant defense response to pathogenic infection. Plant-Microbe Interaction Group, RSBS, ANU, Canberra, Australia.

1992.2-1993.1: IFS Research Fellow. Molecular structure, function and evolution of trypsin inhibitor from closely related plants. Division of Biochemistry and Molecular Biology, John Curtin School of Medical Research, ANU, Canberra, Australia.

1987.7-1992.2: Research Fellow. Leader for two research projects: Biochemical analysis and genetic screening of Chinese wild rapeseed, supported by IFS (Sweden); Characterization of plant secondary metabolic substances, supported by National Natural Science Foundation of China (NSFC/China). Institute of Oil Crops, CAAS, Wuhan, China.

1984.9-1987.9: Post-graduate Student for M.Sc. Thesis title: Glucosinolate accumulation and regulation in rapeseed plant. CAAS, Beijing, China.

1983.8-1984.8: Lecturer, full time. Zhongnan Nationality University, Wuhan, China.

Publications

Representative Articles:

1. Peng, L., Kawagoe, Y., Hogan, P., and Delmer, D. (2002). Sitosterol-β-1,4-glucoside as primer for cellulose synthesis in plants. *Science,* 295: 147-150. (IF: 32.45, Cited times: 255).
2. Arioli, T., Peng, L., Betzner, A. S., Burn, J., Wittke, W., Herth, W., Camilleri, C., Hofte, H., Plazinski, J., Birch, R., Cork, A., Glover, J., Redmond, J., and Williamson, R. E. (1998). Molecular analysis of cellulose biosynthesis in *Arabidopsis. Science*, 279: 717-720. (IF: 32.45, Cited times: 517).

Recent Articles:

3. Wang, Y.[#], Huang, J.[#], Li, Y., Xiong, K., Wang, Y., Li, F., Liu, M., Wu, Z., Tu, Y., Peng, L.*. Ammonium oxalate-extractable uronic acids positively affect biomass enzymatic digestibility by reducing lignocellulose crystallinity in Miscanthus.Bioresource Technology, 196: 391-398, 2015. (5-year IF: 5.6).
4. Zhang, J.[#], Zou, W.[#], Li, Y., Feng, Y., Zhang, H., Wu, Z., Tu, Y., Wang, Y., Cai, X., Peng, L.*. Silica distinctively affects cell wall features and lignocellulosic saccharification with large enhancement on biomass production in rice. Plant Science, 239: 84-91, 2015. (5-year IF: 3.904).
5. Sun, H., Guo, K., Feng, Q., Zou, W., Li, Y., Fan, C., Peng, L[*], Positive selection drives adaptive diversification of the 4-coumarate: CoA ligase (4CL) gene in angiosperms. Ecology and Evolution, 2015. DOI: 10.1002/ece3.1613. (5-year IF: 1.658).
6. Si, S.[#], Chen, Y.[#], Fan, C., Hu, H., Li, Y., Huang, J., Liao, H., Hao, B., Li, Q., Peng, L., Tu, Y.[*], Lignin extraction distinctively enhances biomass enzymatic saccharification in hemicelluloses-rich Miscanthus species under various alkali and acid pretreatments. Bioresource Technology, 183: 248-254, 2015.
7. Huang, Y.[#], Wei, X.[#], Zhou, S., Liu, M., Tu, Y., Li, A., Chen, P., Wang, Y., Zhang, X., Peng, L., Xia, T.* Steam explosion distinctively enhances biomass enzymatic saccharification of cotton stalks by largely reducing cellulose polymerization degree in G. barbadense and G. hirsutum. Bioresource Technology, 181:224-230, 2015,
8. Wu, L., Li, M., Huang, J., Zhang, H., Zou, W., Hu, S., Li, Y., Fan, C., Zhang, R., Jing, H., Peng, L., Feng, S.* A near infrared spectroscopic assay for stalk soluble sugars, bagasse enzymatic saccharification and wall polymers in sweet sorghum. Bioresource Technology，177: 118-124, 2015. (5-year IF: 5.6).
9. Li, F.[#], Zhang, M.[#], Guo, K., Hu, Z., Zhang, R., Feng, Y., Yi, X., Zou, W., Wang, L., Wu, C., Tian, J., Lu, T., Xie, G.*, Peng, L.* High-level arabinose predominately affects cellulose

crystallinity for genetic enhancing both plant lodging resistance and biomass enzymatic digestibility in rice mutants. Plant Biotechnology Journal, 13: 514-525, 2015. (5-year IF: 5.913).

10. Li, M. #, Si, S. #, Hao, B., Zha, Y., Wan, C., Hong, S., Kang, Y., Jia, J., Zhang, J., Li, M., Zhao, C., Tu, Y., Zhou, S., Peng, L.* Mild alkali-pretreatment effectively extracts guaiacyl-rich lignin for high lignocellulose digestibility coupled with largely diminishing yeast fermentation inhibitors in Miscanthus. Bioresource Technology, 169: 447-454, 2014. (5-year IF: 5.6).
11. Li, M. #, Feng, S. #, Wu, Z., Li, Y., Fan, C., Zhang, R., Zou, W., Tu, Y., Jing, H., Li, S., Peng,L.* Sugar-rich sweet sorghum is distinctively affected by wall polymer features for biomass digestibility and ethanol fermentation inbagasse. Bioresource Technology, 167: 14-23, 2014. (5-year IF: 5.6).
12. Guo, K., Zou, W., Feng, Y., Zhang, M., Zhang, J., Tu, F., Xie, G., Wang, L., Wang, Y., Klie, S., Persson, S., Peng, L.* An integrated genomic and metabolomic frame work for cell wall biology in rice. BMC Genomics, 15: 596, 2014. (5-year IF: 4.5).
13. Jia, J. #, Yu, B. #, Wu, L., Wang, H., Wu, Z., Li, M., Huang, P., Feng, S., Chen, P., Zheng, Y., Peng, L.* Biomass enzymatic saccharification is determined by the non-KOH-extractable wall polymer features that predominately affect cellulose crystallinity in Corn. PLoS ONE, 9(9): e108449, 2014. (5-year IF: 4.015).
14. Li, X. # ,Xia, T. #, Huang, J., Guo, K., Liu, X., Chen, T., Xu, W., Wang, X., Feng, S., Peng, L.* Distinct biochemical activities and heat shock responses of two UDP-glucose sterol glucosyltransferases in cotton. Plant Science, 219-220: 1-8, 2014. (5-year IF: 3.785).
15. Li, Z. #, Zhao, C. #, Zha, Y., Wan, W., Si, S., Liu, F., Zhang, R., Li, F., Yu, B., Yi, Z., Xu, N., Peng,L., Li, Q.* The minor wall-networks between monolignols and interlinked-phenolics predominantly affect biomass enzymatic digestibility in Miscanthus. PLoS ONE, 9(8): e105115, 2014. (5-year IF: 4.015).
16. Wu, Z., Hao, H., Zahoor, Tu, Y., Hu, Z., Wei, F., Liu, Y., Zhou, X., Wang, Y., Xie, G., Gao, C., Cai, C., Peng, L., Wang, L.* Diverse cell wall composition and varied biomass digestibility in wheat straw for bioenergy feedstock. Biomass and Bioenergy, 70: 347-355, 2014. (5-year IF: 4.164).
17. Wu, Z. #, Zhang, M. #,Wang, L.*, Tu, Y., Zhang, J., Xie, G., Zou, W., Li, F., Guo, K., Li, Q., Gao, C., Peng, L.* Biomass digestibility is predominantly affected by three factors of wall polymer features distinctive in wheat accessions and rice mutants. Biotechnology for Biofuels, 6: 183, 2013. (5-year IF: 7.368; Times Cited: 8).
18. Li, A., Xia T., Xu W., Chen, T., Li X., Fan, J., Wang, R., Feng, S., Wang, Y., Wang, B., Peng, L.* An integrative and comparative analysis of four CESA isoforms specific for fiber

cellulose production between Gossypium hirsutum and Gossypium barbadense. Planta, 237(6): 1585-1597, 2013. (5-year IF: 3.715; Times Cited: 7).

19. Xie, G., Yang, B., Xu, Z., Li, F., Guo, K., Zhang, M., Wang, L., Zou, W., Wang, Y., and Peng, L.* Global identification of multiple OsGH9 family members and their involvement in cellulose crystallinity modification in rice. PLoS ONE, 8(1):e50171, 2013. (5-year IF: 4.015; Times Cited: 14)..
20. Zhang, W., Yi Z., Huang, J., Li, F., Hao, B., Li, M., Hong, S., Lv, Y., Sun, W., Ragauskas, A., Hu, F., Peng, J., and Peng, L.* Three lignocellulose features that distinctively affect biomass enzymatic digestibility under NaOH and H_2SO_4 pretreatments in Miscanthus. Bioresource Technology, 130:30-37, 2013. (5-year IF: 5.6; Times Cited: 15).
21. Li, F., Ren, S., Zhang, W., Xu, Z., Xie, G., Chen, Y., Tu, Y., Li, Q., Zhou, S., Li, Y., Tu, F., Liu, L., Wang, Y., Jiang, J., Qin, J., Li, S., Li, Q., Jing, H., Zhou, F., Gutterson, N., and Peng, L.* Arabinose substitution degree in xylan positively affects lignocellulose enzymatic digestibility after various NaOH/H_2SO_4 pretreatments in Miscanthus. Bioresource Technology, 130:629-637, 2013. (5-year IF: 5.6; Times Cited: 14).
22. Sun, H., Li, Y., Feng, S., Zou, W., Guo, K., Fan, C., Si, S., and Peng, L.* Analysis of five rice 4-coumarate: coenzyme a ligase enzyme activity and stress response for potential roles in lignin and flavonoid biosynthesis in rice. Biochemical and Biophysical Research Communications, 430(3):1151-6, 2013. (5-year IF: 2.52; Times Cited: 14).
23. Xu, N., Zhang, W., Ren, S., Liu, F., Zhao, C., Liao, H., Xu, Z., Li, Q., Tu, Y., Yu, B., Wang, Y., Jiang, J., Qin, J., and Peng, L.* Hemicelluloses negatively affect lignocellulose crystallinity for high biomass digestibility under NaOH and H_2SO_4 pretreatments in Miscanthus. Biotechnology for Biofuels, 5(1):58, 2012. (5-year IF: 7.368; Times Cited: 32).
24. Huang, J., Xia, T., Li, A., Yu, B., Li, Q., Tu, Y., Zhang, W., Yi, Z., and Peng, L.* A rapid and consistent near infrared spectroscopic assay for biomass enzymatic digestibility upon various physical and chemical pretreatments in Miscanthus. Bioresource Technology, 121:274-281, 2012. (5-year IF: 5.6; Times Cited: 22).
25. Xie, G., Peng, L.* Genetic engineering of energy crops: A strategy for biofuel production in China. Journal of Integrative Plant Biology, 53:143-150, 2011. (5-year IF: 3.112; Times Cited: 36).
26. Peng, L.*. Gutterson, N. Energy crop and biotechnology for biofuel production- meeting report. Journal of Integrative Plant Biology, 53:89-92, 2011. (5-year IF: 3.112; Times Cited: 6).
27. Wang, L., Guo, K., Li, Y., Tu, Y., Hu, H., Wang, B., Cui, X., and Peng, L.* Expression profiling and integrative analysis of the CESA/CSL superfamily in rice. BMC Plant Biology,

10:282-298, 2010. (5-year IF: 3.496; Times Cited: 29).

28. Peng, L., Hocart, C. H., Redmond, J.W., and Williamson, R. E.* Fractionation of carbohydrates in Arabidopsis seedling cell walls shows that three radial swelling loci are specifically involved in cellulose production. Planta, 211: 406-414, 2000. (5-year IF: 3.715; Times Cited: 89).
29. Peng, L., Xiang, F., Roberts, E., Kawagoe, Y., Greve, C., Stoller, A., Kreuz, K., and Delmer, D.* The experimental herbicide CGA 325'615 inhibits synthesis of crystalline cellulose and causes accumulation of non-crystalline β-1,4-glucan associated with CesA protein. Plant Physiology, 126: 981-992, 2011. (5-year IF: 7.908; Times Cited: 78).
30. Lane, D., Wiedemeier, A., Peng, L., Hofte, H., Hocart, H., Birch, R., Baskin, T., Arioli, T., Burn, J., Betzner, A., and Williamson R. E.* Temperature-sensitive alleles of rsw2 link the KORRIGAN endo-β-1,4-glucanase to cellulose synthesis and cytokinesis in Arabidopsis. Plant Physiology, 126: 278-288, 2011. (5-year IF: 7.908; Times Cited: 182).

Book Chapters:

1. Peng Chen and Liangcai Peng*. The diversity of lignocellulosic biomass resources and their evaluations for use as biofuels and chemicals. In: Sun J Z, Ding S Y, Peterson J D, eds. Biological Conversion of Biomass for Fuels and Chemicals: Explorations from Natural Biomass Utilization Systems. Royal Society of Chemistry, 2013, 83-109. ISBN: 978-1-84973-424-0.
2. Guosheng Xie and Liangcai Peng*.Book Chapter entitled "Genetic Engineering of Bioenergy Crops." In: Wang L J, ed. Sustainable Bioenergy Production. Taylor and Francis. 2014.

Additional Information