

## **XINFENG XIE, PHD**

[xinfengx@mtu.edu](mailto:xinfengx@mtu.edu); (906) 487 2294

Tenure-Track Assistant Professor of Forest Biomaterials  
College of Forest Resources and Environmental Science  
Michigan Technological University  
1400 Townsend Drive  
Houghton, Michigan 49931  
(Updated on March, 2020)

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### **EDUCATION**

**Doctor of Philosophy**, Forest Resources (Wood Science and Technology), University of Maine, Orono, Maine, USA, 2008

**Graduate Certificate in Advanced Engineered Wood Composites**, University of Maine, Orono, Maine, USA, 2006

**Master of Engineering**, Wood Science and Technology, Central-South Forestry University, Zhuzhou, Hunan, China, 2001

**Bachelor of Agriculture**, Forestry, Central-South Forestry University, Zhuzhou, Hunan, China, 1998

### **PROFESSIONAL EXPERIENCES**

Aug. 2016 – Present	Tenure-Track Assistant Professor, Michigan Technological University, College of Forest Resources and Environmental Science
Oct. 2013 – Aug. 2016	Postdoctoral Fellow, West Virginia University, School of Natural Resources
Feb. 2012 – Sep. 2013	Director for Quality Assurance and Research, Maine Wood Treaters, Inc.
Jan. 2011 – Aug. 2012	Assistant Research Professor, University of Maine, School of Forest Resources
Aug. 2011	Visiting Scientist, 2011, University of Portsmouth, Institute of Biomedical and Biomolecular Sciences
Nov. 2008 – Dec. 2010	Postdoctoral Research Associate, University of Maine, School of Forest Resources
May – Aug. 2007 and 2008	Visiting Scientist, Johns Hopkins University, Advanced Technology Laboratory

### **FUNDED PROJECTS (Principal Investigator/Scientist, Total \$3.66 Million)**

2019-2022. "Demonstrate the Durability of Enhanced Domestic Hardwoods for U.S. Army Tactical Trailer Decking" U.S. Department of Defense-Ground Vehicle Systems Center (GVSC) through USDA Forest Service Forest Products Laboratory. \$164,928

2019-2021. "TacticalWood Enhanced Trailer Decking-Phase II" U.S. Department of Defense-Ground Vehicle Systems Center (GVSC). \$299,953

2019-2020. "Lignin-Based Cost-effective Renewable Polyols for Polyurethane Formulations" Ford Motor Company. \$199,945

2019-2022. "Preliminary Horizontal Exposure of Louisiana-Pacific Smartside Fence Pickets (1905)," Louisiana-Pacific Corp. \$50,000

2019-2024. "Kipuka Test of Louisiana-Pacific SmartSide Fence Picket Installation Variables" Louisiana-Pacific Corp. \$62,500

2019-2022. "Siding Bridging Study of Louisiana-Pacific Smartside Horizontal Fence Pickets" Louisiana-Pacific Corp. \$55,600

2019-2020. "Laboratory Screening by Wood Decay Test of Experimental Creosote Formulation (1910)," Koppers Inc. \$8,561

2019-2021. "Extended AWWA E16 and Depletion Test of Lonza Series 2013/FL Wood Preservatives" Lonza Wood Protection. \$25,000

2019-2021. "Extended AWWA E18 Test of Lonza Series 2023/FL Wood Preservatives" Lonza Wood Protection. \$30,000

2019-2021. "Extended AWWA E18 Test of Lonza Series 2023/HI Wood Preservatives" Lonza Wood Protection. \$30,000

2019-2021. "Extended AWWA E26 Test of Lonza Series 2007/HI Wood Preservatives" Lonza Wood Protection. \$35,000

2019-2021. "Extended Kipuka AWWA E16 Test of Arch Series 2005/HI Wood Preservatives" Lonza Wood Protection. \$30,000

2019-2021. "Extended Kipuka AWWA E18 Test of Arch Series 2008/HI Wood Preservatives" Lonza Wood Protection. \$30,000

2019-2020. "Soil Block Decay Testing of Candidate Wood Preservatives Using Fibroporia Radiculosa and Fomitopsis Palustris for Lonza Wood Protection" Lonza Wood Protection. \$45,000

2019-2020. "Laboratory Termite Test of EPS Foam Treated with Termiticides" Atlas Roofing Corp. \$10,000

2019. "PNW Evaluation of Series 2001/WA and Series 2002/WA Lap Joints" Lonza Wood Protection. \$12,500

2019-2020. "Laboratory Solid Block Decay Test of HeveaTech and Benchmark Materials" Louisiana-Pacific Corp. \$20,822

2019. "Laboratory Termite Test of HeveaTech". Louisiana-Pacific Corp. \$10,000

2018-2020. "TacticalWood Enhanced Trailer Decking" U.S. Department of Defense-Army Tank Automotive Research, Development and Engineering Center (TARDEC). \$236,873

2018-2019. "Biocarbon-A Renewable and Lightweight Functional Filler for Polymer Composites". Ford Motor Company. \$200,000

2018-2023. “Kipuka Comparisons of Louisiana-Pacific SmartSide Fence Pickets” Louisiana-Pacific Corp. \$62,500

2018-2023. “Above Ground Decay Test of Project KRD 13-024” Louisiana-Pacific Corp. \$45,150

2018-2023. “Kipuka Demonstration Exposure of Experimental Decking” Louisiana-Pacific Corp. \$50,000

2018-2023. “Kipuka Exposure of Louisiana-Pacific SmartSide Fence Pickets” Louisiana-Pacific Corp. \$85,000

2018-2022. “Extended Kipuka Exposure of a Siding Demonstration Hut” Louisiana-Pacific Corp. \$30,000

2018-2021. “Extended Marconi AWWA E21 Test of Dip Treated Commercial Wood Products” Koppers Inc. \$30,000

2018-2021. “Extended Maunawili AWWA E21 Test of Dip Treated Commercial Wood Products” Koppers Inc. \$30,000

2018-2020. “Extended Kipuka Exposure of Roaring River Hardboard” Louisiana-Pacific Corp. \$30,000

2018-2020. “Extended Field Test of SmartSide Siding Products” Louisiana-Pacific Corp. \$30,000

2018-2020. “Preliminary Zinc Borate Depletion Test of Louisiana-Pacific Smartside Fence Pickets” Louisiana-Pacific Corp. \$28,650

2018-2019. “Soil Block Decay Test of Copper Complex Dip Treatments and Preservative Leaching”. ISK Biocides. \$17,050

2018-2019. “Assessing Wood Properties of Seedlings and Young Trees for Genetic Improvement”. US Department of Agriculture. \$10,000

2018-2019. “Soil Block Decay Testing of 63 Experimental Wood Preservative Treatments”. Lonza Wood Protection. \$33,100

2018. “Laboratory Decay and Termite Tests of Bamboo Plastic Composites”. QAI Laboratories. \$16,000

2018. “Adhesive Film Testing Against a Three Fungi Mix on Mineral Salts Agar”. FPInnovations. \$11,900

2018. “Preservative Uptake of Two Mozambique Wood Species”. Pernix Group Inc. \$14,000

2017-2022, Test Projects for Louisiana-Pacific. \$42,093.

2017-2020. “Adding Value to Small-Diameter Hazardous Fuels Through Thermal Modification”. USDA Forest Service, Subgrant through University of Minnesota – Duluth NNRI. \$156,744

2017-2019. “Engineering Performance Characteristics of Hardwood Cross Laminated Timber”. USDA Forest Service Forest Products Laboratory. \$45,000.

2017-2018. Test Projects for Louisiana-Pacific. \$25,616

2017-2018. Test Projects for Lonza. \$39,443

2017-2018. “Bonding Mixed Species for Advanced Biomaterials”. USDA Forest Service Forest Products Laboratory. \$20,000.

2015-2018. “Enhancing the Nanostructure of the Lignocellulosic Cell Wall as A Natural Template for Highly-ordered Mesoporous Carbons”. USDA AFRI NIFA Competitive Grants Program. Foundational Program. \$496,168.

2014. “Determination of Cellulose Crystallinity Index of Lignocellulosic Materials”. Renmatix, Inc. \$4,500.

2011-2012. “Development of Data Acquisition System and Protocols for Whip Testing”. Racing Surfaces Testing Laboratory, Orono, Maine. \$8,800.

2010-2012. “Growth of Microalgae on Lignocellulosic Biomass Sugars for Enhanced Bio-oil and Food Supplement Production – Planning.” USDA Agriculture and Food Research Initiative Competitive Grants Program. \$50,000.

2010-2012. “New Insights into Using Lignocellulose Degradation Mechanisms for Biofuel Generation Gained by Sharing Expertise in Wood-Degrading Animals and Fungi.” Biotechnology and Biological Sciences Research Council (BBSRC) United States Partnering Award. £32,950.

2010-2012. “Application of a Wood Brown Rot Biomimetic System in the Depolymerization of Lignocellulosic Biomass for Biofuel Production.” USDA Special Research Grants for Wood Utilization. \$68,135.

2010-2011. “Microalgae Oil Recovery System Design.” Bureau of Indian Affairs, DOI. \$15,000.

2010-2011. “Development of a Unique Energy Storage Device Using a Mesoporous Carbon Material from Woody Substrates Integrated with a Conventional Dielectric.” Subcontract of Maine Technology Institute Seed Grant through Technological Innovations LLC, Sanford, Maine. \$6,000.

2009-2011. “Production of Biofuels from Lignocellulosic Materials via Algal and Bacterial Fermentation.” USDA Special Research Grants for Wood Utilization. \$61,500.

2008-2010. “Novel Processes to Prepare and Utilize Carbon Nanotubes and Nanofibers from Natural Lignocellulosic Materials.” USDA Special Research Grants for Wood Utilization. \$70,000.

2006-2009. “A Novel Process to Produce Multi-walled Carbon Nanotubes from Natural Cellulosic Materials.” USDA Special Research Grants for Wood Utilization. \$100,000.

2006-2008. “A Novel Process to Produce Multi-walled Carbon Nanotubes from Natural Cellulosic Materials.” Office of Naval Research (ONR). \$151,113.

2006-2007. “Novel Processes to Prepare and Utilize Carbon Nanotubes from Cellulosic Materials.” Maine Technology Institute. Seed Grant. \$10,000.

2005-2006. “A Novel Process to Produce Multi-walled Carbon Nanotubes from Natural Cellulosic Materials.” Maine Technology Institute. Seed Grant. \$10,000.

## PUBLICATIONS

### Refereed publications/proceedings

Zhu, S., Y. Wu, Z. Qu, L. Zhang, Y. Yu, X. Xie, M. Huo, J. Yang, D. Bian, H. Zhang, L. Zhang. 2019. Green synthesis of magnetic sodalite sphere by using groundwater treatment sludge for tetracycline adsorption. *Journal of Cleaner Production*.

<https://doi.org/10.1016/j.jclepro.2019.119140>

Zhu, S., Y. Wu, M. Huo, X. Lin, Z. Qu, T. Su, J. Liu, X. Xie. 2019. A novel application of hematite precipitation for high-purity enrichment of nickel and zinc from smelting wastewater. *Acta Scientiae Circumstantiae*. 39(10): 3381-3386.

You, L., Z. You, Q. Dai, X. Xie, S. Washko, J. Gao. 2019. Investigation of adhesion and interface bond strength for pavements underlying chip-seal: Effect of asphalt-aggregate combinations and freeze-thaw cycles on chip-seal. *Construction and Building Materials*. 203: 322-330.

Guo, S., Q. Dai, L. Chang, Y. Hu, X. Xie, R. Si, J. Wang. 2019. Kinetic analysis and thermodynamic simulation of alkali-silica reaction in cementitious materials. *Journal of the American Ceramic Society*. 102: 1463-1478.

Liu, L., S. Luo, Y. Qing, N. Yan, Y. Wu, X. Xie, F. Hu. 2018. A temperature-controlled, conductive PANI@CNFs/MEO<sub>2</sub>MA/PEGMA Hydrogel for Flexible Temperature Sensors. *Macromolecular Rapid Communications*. 39:1700836. DOI:10.1002/marc.201700836

Guo, S., Q. Dai, X. Sun, X. Xie. 2018. Neutron scattering measurement of water content and chemical composition of alkali-glass powder reacted gel. *Materials Characterization*. 136:165-174.

Li, C., J. Ma, Z. Xiao, S. Hector, R. Liu, S. Zuo, X. Xie, A. Zhang, H. Wu, Q. Liu. 2018. Catalytic cracking of Swida wilsoniana oil for hydrocarbon biofuel over Cu-modified ZSM-5 zeolite. *Fuel*. 218: 59-66.

Guo, X., Y. Wu, X. Xie. 2017. Water vapor sorption properties of cellulose nanocrystals and nanofibers using dynamic vapor sorption apparatus. *Scientific Reports*. DOI:10.1038/s41598-017-14664-7

Du, J., Y. Wang, X. Xie, M. Xu, Y. Song. 2017. Styrene-assisted maleic anhydride grafted poly(lactic acid) as an effective compatibilizer for wood flour/poly(lactic acid) bio-composites. *Polymers*. 9, 623.

Liu, W., Z. Yu, X. Xie, K. von Gadow, C. Peng. 2017. A critical analysis of the carbon neutrality assumption in life cycle assessment of forest bioenergy systems. *Environmental Reviews*. DOI: 10.1139/er-2017-0060.

Liu, W., Z. Zhang, X. Xie, Z. Yu, K. von Gadow, J. Xu, S. Zhao, Y. Yang. 2017. Analysis of the global warming potential of biogenic CO<sub>2</sub> emission in life cycle assessments. *Scientific Reports*. DOI:10.1038/srep39857.

Xu, J., X. Xie, J. Wang, J. Jiang. 2016. Directional liquefaction coupling fractionation of lignocellulosic biomass for platform chemicals. *Green Chemistry*. 18: 3124-3138.

- Wang, K., X. Xie, J. Jiang, J. Wang. 2016. Enhanced enzymatic saccharification of shrub willow using sulfolane pretreatment. *Cellulose*. 23(2): 1153-1163.
- Nan, N., D. DeVallance, X. Xie, J. Wang. 2016. The effect of bio-carbon addition on the electrical, mechanical, and thermal properties of polyvinyl alcohol/biochar composites. *Journal of Composite Materials*. 50(9): 1161-1168.
- Zhong, T., G. Oporto, Y. Peng, X. Xie, D. Gardner. 2015. Drying cellulose-based materials containing copper nanoparticles. *Cellulose*. 22:2665-2681.
- Wang, J., X. Xie, D. DeVallance, J. Jiang, L. Huang, L. Denes. 2015. Editorial-Biomass-based materials and technologies for energy. *Advances in Materials Science and Engineering*. 2015: 2 pages, doi:10.1155/2015/393619.
- Wang, K., X. Xie, Z. Si, J. Jiang, J. Wang. 2015. Microwave assisted hydrolysis of holocellulose using sulfonated char derived from lignin-rich residue. *Advances in Materials Science and Engineering*. 2015: 5 pages, doi:10.1155/2015/106137.
- Spender, J., A. Demers, X. Xie, A. Cline, A. Earle, L. Ellis, D. Neivandt. 2012. Method for Production of Polymer and Carbon Nanofibers from Water-Soluble Polymers. *Nano Letters*. 12:3857-3860.
- Eastwood, D. C., D. Floudas, M. Binder, A. Majcherczyk, P. Schneider, A. Aerts, F. O. Asiegbu, S. E. Baker, K. Barry, M. Bendiksby, M. Blumentritt, P. M. Coutinho, D. Cullen, R. P. de Vries, A. Gathman, B. Goodell, B. Henrissat, K. Ihrmark, H. Kauserud, A. Kohler, K. LaButti, A. Lapidus, J. L. Lavin, Y. Lee, E. Lindquist, W. Lilly, S. Lucas, E. Morin, C. Murat, J. A. Oguiza, J. Park, A. G. Pisabarro, R. Riley, A. Rosling, A. Salamov, O. Schmidt, J. Schmutz, I. Skrede, J. Stenlid, A. Wiebenga, X. Xie, U. Kües, D. S. Hibbett, D. Hoffmeister, N. Högberg, F. Martin, I. V. Grigoriev, S. C. Watkinson. 2011. The plant cell wall-decomposing machinery underlies the functional diversity of forest fungi. *Science*. 333: 762-765.
- Pries, M., H. Militz, B. Goodell, X. Xie, Y. Qian, M. Peterson, R. Lopez-Anido. 2010. A note on reinforcement of Polymer Matrix Composites Using Carbon Residues Derived from Woody Biomass. *Journal of Composites Materials*. 44:1883-1892.
- Malyon, G., S. LaBarre, N. Kervarec, P. Carey, J. McGeehan, X. Xie, A. Kluppel, S. Cragg. 2010. New insights from NMR, FTIR, X-ray diffraction and physical chemistry into digestive processes in the wood-boring marine crustacean *Limnoria quadripunctata*. International Research Group on Wood Preservation IRG/WP 10-10732.
- Xie, X., B. Goodell, G. Daniel, Y. Qian, J. Jellison, M. Peterson. 2009. Carbonization of wood and nanostructures formed from the cell wall. *International Biodeterioration and Biodegradation*. 63: 933-935.
- Xie, X., B. Goodell, D. Nagle, D. Zhang. 2009. Selected physical and mechanical properties of resin infused porous carbon composites made from medium density fiberboard. *Forest Products Journal*. 59: 25-28.
- Xie, X., B. Goodell, D. Zhang, D. Nagle, Y. Qian, M. Peterson, J. Jellison. 2009. Characterization of carbons derived from cellulose and lignin and their oxidative behavior. *Bioresource Technology*. 100: 1797-1802.

Xie, X., B. Goodell, Y. Qian, G. Daniel, D. Zhang, D. Nagle, M. Peterson, J. Jellison. 2009. A method to produce carbon nanotubes directly from plant materials. *Forest Products Journal*. 59: 26-28.

Goodell, B., X. Xie, Y. Qian, G. Daniel, M. Peterson, J. Jellison. 2008. Carbon nanotubes produced from natural cellulosic materials. *Journal of Nanoscience and Nanotechnology*. 8: 2472-2474.

Xie, X., B. Goodell, Y. Qian, M. Peterson, J. Jellison. 2008. Significance of the heating rate on the physical properties of carbonized maple wood. *Holzforschung*. 62: 591-596.

Xie, X., B. Goodell, Y. Qian, G. Daniel. 2008. Heat treatment, thermal degradation of wood, carbon nanotubes and Damascus steel swords; what do they all have in common? International Research Group on Wood Preservation, IRG/WP 08-40399.

### Reports

Grushecky, S., X. Xie, D. DeVallance. 2014. Mechanical Properties of Green Oak, Pine, and Gum Railroad Ties. Stella-Jones, Inc. 14 pages. (Technical Report)

Xie, X., B. Goodell, M. Peterson, S. Crawford. 2011. Algal Oil Recovery System Design – Harvesting and Oil Extraction. Bureau of Indian Affairs, US Department of the Interior. 95 pages. (Technical Report)

### Book Edited

C. Li, Z. Xiao, L. He, M. Di Serio, X. Xie. *Industrial Oil Plants: Application Principles and Green Technologies*. Springer. (In preparation).

### Peer-reviewed Book Chapters

Xie, X., H. Wu. Technologies for conversion of industrial oil feedstocks into materials, in *Industrial Oil Plants: Application Principles and Green Technologies*, C. Li, Z. Xiao, L. He, M. Di Serio, X. Xie, Ed; Springer (In preparation).

Xie, X., B. Goodell. Thermal degradation and conversion of plant biomass into high value carbon products, In *Deterioration and Protection of Sustainable Biomaterials*, Schultz, Tor, Ed; American Chemical Society: Washington D.C., 2014. pp 147-158.

### Patents

Barry Goodell, Xinfeng Xie, Yuhui Qian, Dajie Zhang, Michael Peterson, Jody Jellison. 2014. “Processes for producing carbon nanotubes and carbon nanotubes produced thereby.” US Patent

No. 8632744.

David J. Neivandt, Jonathan Spender, Xinfeng Xie, Lucas P. Ellis. 2010. "Carbon nano-structures from organic polymers." US patent, Pub. No.: US 2011/0091711 A1.

### **PROFESSIONAL PRESENTATIONS**

Xie, X., H. Bumby, R. Ziobro, J. Zhang, N. Knight, D. Herdman, T. Greer, C. Barber, J. Bumby. Performance evaluation of copper preservative systems for marine applications in northeastern U.S. salt waters. AWWPA 115<sup>th</sup> Annual Meeting. American Wood Protection Association. Orlando, FL, May 5-7, 2019.

Xie, X. and M. Musah. The bonding strength properties of cross laminated northern hardwoods. The Second Michigan Forest Bioeconomy Conference. Michigan Forest Biomaterials Institute. Midland, MI, February 12-13, 2019.

Wang, L., X. Xie, D. Richter. Decay resistance performance of recycled creosote for wood preservations. 72<sup>nd</sup> International Convention. Forest Products Society. Madison, Wisconsin, June 12-14, 2018.

Musah, M., X. Wang, R. Ross, X. Xie. Bonding properties of cross-laminated northern hardwood species. 72<sup>nd</sup> International Convention. Forest Products Society. Madison, Wisconsin, June 12-14, 2018.

Bostanci, Y., J. Jakes, X. Xie. Mechanical characterization of genetically modified biomass by atomic force microscopy. 72<sup>nd</sup> International Convention. Forest Products Society. Madison, Wisconsin, June 12-14, 2018.

Wang, L., Dana L. Richter, X. Xie, Glenn Larkin. Study on recycling of creosote-treated red oak for wood preservation. 114th AWWPA Annual Meeting. American Wood Protection Association. Seattle, Washington, April 22-25, 2018.

Xie, X. Low-cost lightweight high-performance wood materials. Innovation Talk. US Army Tank Automotive Research, Development and Engineering Center (TARDEC). June 6, 2018. (Invited)

Xie, X. Preparing lignin for carbon fiber production. Michigan Tech. Research Forum TechTalks, Houghton, Michigan, Oct. 5, 2017.

Xie, X. High glass transition lignin for carbon fiber production. Kraft Lignin Innovation Forum, Michigan Forest Biomaterials Institute (MiFBI), Iron Mountain, Michigan, Oct. 11-12, 2017.

Xie, X., J. Wang, E. Cigtyurek, D. DeVallance. Wood cell wall-derived carbon with nano-channels for next generation electrochemical energy storage devices. 71<sup>st</sup> International Convention. Forest Products Society. Statkville, Mississippi, June 26-28, 2017.

Goodell, B., X. Xie. Successes and failures in restructuring forest products programs to enhance their appeal to undergraduate students. 71<sup>st</sup> International Convention. Forest Products Society. Statkville, Mississippi, June 26-28, 2017.

Xie, X. Harnessing the natural nano- and molecular structures of forest biomass for high value products. College of Materials Science and Engineering, Northeast Forestry University, Harbin, China, May 22, 2017.



Xie, X. Harnessing the natural nano- and molecular structures of forest biomass for high value products. Research Institute for Wood Industry, Chinese Academy of Forestry, Beijing, China, May 18, 2017.

Xie, X. Harnessing the natural nano- and molecular structures of forest biomass for high value products. College of Engineering, Zhejiang Agricultural University, Hangzhou, China, May 15, 2017.

Xie, X. Harnessing the natural nano- and molecular structures of forest biomass for high value products. Hunan Academy of Forestry, Changsha, China, May 10, 2017.

Xie, X. Harnessing the natural nano- and molecular structures of forest biomass for high value products. Research Forum, Department of Chemistry, Michigan Technological University, Houghton, Michigan, Feb. 24, 2017. (Invited)

Xie, X., J. Wang. Enhancing the nanostructure of lignocellulosic cell walls as a natural template for highly-ordered mesoporous carbon. 2016 USDA Nanotechnology Grantees Annual Meeting, Penn State University, PA, June 5-7, 2016.

Xie, X., J. Wang, J. McNeel, D. DeVallance. Bioproducts and bioenergy from woody biomass. 4th Annual TransTech Energy Business Development Conference-2015, WVU TransTech Energy Business Development Program, Morgantown, WV, November 5-6, 2015.

Liu, W., X. Xie, J. Wang. Economic and environmental analyses of coal biomass to liquids: A case study in West Virginia. 2015 Gasification System and Coal & Coal-Biomass to Liquids Workshop, US DOE NETL, Morgantown, WV, August 10-11, 2015.

Xie, X., J. Wang, J. McNeel, D. DeVallance. Bioproducts and bioenergy from woody biomass. National STEM Teachers Workshop, Bioenergy and Bioproducts Education Program, Horseheads, NY, July 27-30, 2015. (Invited)

Xie, X., Pyrolysis of lignocellulosic biomass. NEWBio Teacher Training Workshop, West Virginia University, Morgantown, WV, July 13-17, 2015. (Invited)

Xie, X., J. Wang. Exploit the nanostructure of lignocellulosic cell walls for advanced porous carbon. 2015 Gordon Research Conference on Nanoscale Science and Engineering for Agriculture and Food Systems, Bentley University, Waltham, MA, June 7-12, 2015.

Xie, X., J. Wang, J. Zondlo, J. McNeel, D. DeVallance. Bioproducts and bioenergy from underutilized biomass. U.S. Department of Energy National Energy Technology Laboratory, Morgantown, WV. May 12, 2015.

Xie, X., J. Wang, J. McNeel, D. DeVallance. 2015. Biofuels and energy efficient bioproducts from underutilized woody biomass. 2015 Innovation & Entrepreneurship Day at the State Capitol, Charleston, WV. January 28, 2015.

Xie, X., J. Wang, D. DeVallance. Biomass utilization for biofuels and bioproducts. National AFV Day Odyssey. West Virginia University National Research Center for Coal and Energy, Morgantown, WV. October 15, 2014.

Xie, X. Pyrolysis of biomass. the NEWBio Teacher Training Workshop, West Virginia University, Morgantown, WV, July 21-25, 2014. (Invited)

Xie, X., J. Wang, J. McNeel, D. DeVallance. Biofuels and Energy Efficient Bioproducts from Underutilized Woody Biomass. Presented at 2014 Innovation & Entrepreneurship Day at the State Capitol, Charleston, WV. January 29, 2014.

Xie, X., Characterization of the cellulose crystalline structure of *Limnoria* digested wood using 2D XRD. Presented in the School of Biological Sciences of Portsmouth University, Portsmouth, UK. August 12, 2011. (Invited)

Xie, X., A. Halog. Life cycle assessment of pressure treated wood decking products. Engineering Sustainability 2011. Pittsburgh, Pennsylvania, USA, April 10-12, 2011.

Xie, X., Efficient use of lignocellulosic materials for engineering applications. Presented in the Department of Wood Science & Engineering of Oregon State University. Corvallis, OR, March 7, 2011. (Invited)

Xie, X., B. Goodell, Y. Qian, M. Peterson, J. Jellison. Effects of heating rate on selected physical properties of carbonized wood. Forest Products Society 64th International Convention. Madison, Wisconsin, USA, June 20-22, 2010.

Xie, X., B. Goodell, Y. Qian, G. Daniel, J. Jellison. A novel method for carbon nanotube production and the mechanisms involved. TAPPI 2008 International Conference on Nanotechnology for the Forest Products Industry. St. Louis, Missouri, USA, June 25-27, 2008.

Goodell, B., X. Xie, Y. Qian, G. Daniel. Heat treatment, thermal degradation of wood, carbon nanotubes and Damascus steel swords; what do they all have in common? The 39<sup>th</sup> Annual Meeting of the International Research Group on Wood Protection. Istanbul, Turkey, May 25-29, 2008.

Goodell, B., X. Xie, Y. Qian, G. Daniel, D. Zhang, M. Peterson, J. Jellison. Carbonization of wood, the production of carbon nanotubes and the durability of historic artifacts. The 14<sup>th</sup> International Biodeterioration and Biodegradation Symposium. S. Alessio Siculo, Messina, Italy, October 6-11, 2008.

Xie, X., B. Goodell, D. Zhang, D. Nagle. Mechanical properties of carbonized medium density fiberboard/polymer composites. The American Carbon Society, International Conference on Carbon, Seattle, WA, USA, July 15-20, 2007.

Xie, X., B. Goodell, D. Nagle, D. Zhang, Y. Qian, M. Peterson, J. Jellison. Fabrication and mechanical properties of carbonized medium density fiberboard (CMDf)/polymer composites. Forest Products Society 61<sup>st</sup> International Convention. Knoxville, TN, USA, June 10-13, 2007.

Xie, X., B. Goodell, Y. Qian, G. Daniel, M. Peterson, J. Jellison. Multi-walled carbon nanotubes (MWNTs) produced from natural cellulosic materials. TAPPI 2007 International Conference on Nanotechnology for the Forest Products Industry. Knoxville, TN, USA, June 13-15, 2007.

## TEACHING

Michigan Technological University

Spring since 2017, FW 1035: Wood Anatomy and Properties – Instructor.

Fall 2016, FW 5510: Special Topics in Natural Resources – Instructor.

Fall 2016, FW 5999: Forest Resources and Environmental Science MS Research –Instructor.

West Virginia University:

Fall 2015, Wood Science 422: Harvesting Forest Products – Co-lecturer.

Spring 2014, Chemical Engineering 414: Coal Utilization Engineering – Guest Lecturer.

University of Maine:

Spring 2011, Wood Science and Technology 319: Wood Deterioration and Protection – Instructor.

Spring 2010 and Fall 2009, Mechanical Engineering 487 and 488: Design III and IV – Course Developer and Advisor.

Fall 2006, Wood Science and Technology 213: Wood Identification & Anatomy – Instructor.

Spring 2007 and Spring 2009, Wood Science and Technology 519: Advanced Wood Deterioration and Protection – Laboratory Coordinator and Guest Lecturer.

Fall Semesters of 2006 – 2011, Wood Science and Technology 212: Introduction to Wood Science and Technology – Guest Lecturer.

**SERVICES**

MTU CFRES Wood Protection Group, Group Leader. August 2016 – present.

MTU CFRES International Committee member. May 2018 – present.

MTU CFRES Forest Biomaterials Programmatic Area coordinator. May 2017 – present.

Site coordinator, National STEM Teachers Workshop, Bioenergy and Bioproducts Education Program, Horseheads, NY, July 27-30, 2015.

Guest editor, the special issue on Biomass-based Materials and Technologies for Energy, *Advances in Materials Science and Engineering*, 2015.

Workshop co-organizer, Promoting Hardwood Processing and Economy, West Virginia University Division of Forestry and Natural Resources, and USDA Forest Service Wood Education and Resource Center, September 4, 2014. Princeton, WV.

Conference co-organizer, Biomass Utilization for Green Materials and Energy, West Virginia University Division of Forestry and Natural Resources, and USDA Forest Service Wood Education and Resource Center, September 2, 2014. Morgantown, WV.

Member of the Technical Program Committee, Session Chair, CARBON 2010, American Carbon Society Annual World Conference on Carbon, July 11 – 16, 2010. Clemson, SC.

Wood-Based Carbon Materials for Advanced Applications - Session Chair of Forest Products Society 64th International Conference, June 20 – 22, 2010. Madison, WI.

**HONORS AND AWARDS**

US Army Yuma Proving Ground Challenge Coin, 2019

US Army TARDEC Challenge Coin, 2018

NSF Travel Award, Engineering Sustainability 2011 Conference, 2011

Outstanding Graduate Student from the School of Forest Resources, University of Maine, 2009.

Blumenstock Forest Products Graduate Student of the Year Award, University of Maine, 2008.

University Graduate Research Assistantships, University of Maine, 2006 -2007.