Nathan S. Mosier

Ph.D. Purdue University - 2003

Associate Professor, Indiana Soybean Endowed Chair

Purdue College of Agriculture TEAM Award (C3Bio) – 2014
US Department of the Army Commendation – "Tactical Biorefinery" project – 2006

Research Areas:

Bioprocessing. Conversion of renewable resources to fuels, chemicals, and pharmaceuticals. **Biocatalysis** Enzymes for lignocellulosic biomass hydrolysis, biotransformation of natural raw materials to value-added products.

Selected Publications:

Athmanathan, A.; Emery, I.R.; Kuczek, T.; **Mosier, N.S.** "Impact of temperature, moisture, and storage duration on the chemical composition of switchgrass, corn stover, and sweet sorghum bagasse," BioEnergy Research, DOI: 10.1007/s12155-014-9563-0 (2014).

Emery, I.R.; **Mosier, N.S.** "Direct emission of methane and nitrous oxide from switchgrass and corn stover: implications for large-scale biomass storage," GCB Bioenergy, doi: 10.1111/gcbb.12196 (2014)

Kim, Y.; Kreke, T.; Mosier, N.S.; Ladisch, M.R. "Severity Factor Coefficients for Subcritical Liquid Hot Water Pretreatment of Hardwood Chips," Biotechnology and Bioengineering, 111(2), 254-263, (2014)

Penning, B.W.; Sykes, R.W.; Babcock, N.C.; Dugard, C.K.; Klimek, J.F.; Gamblin, D.; Davis, M.; Filley, T.R.; **Mosier, N.S.**; Weil, C.F.; McCann, M.C.; Carpita, N.C. "Validation of PyMBMS as a High-throughput Screen for Lignin Abundance in Lignocellulosic Biomass of Grasses," BioEnergy Research, 7(3), 899-908 (2014).

Thomas, M.A.; Ahiablame, L.M.; Engel, B.A.; Chaubey, I.; **Mosier, N.** "Modeling Water Quality Impacts of Cellulosic Biofuel Production from Corn Silage," BioEnergy Research, 7(2), 636-653 (2014).

Bryan W. Penning, B.W.; Sykes, R.W.; Babcock, N.C.; Dugard, C.K.; Held, M.A.; Klimek, J.F.; Shreve, J.T.; Fowler, M.; Ziebell, A.; Davis, M.F.; Decker, S.R.; Turner, G.B.; **Mosier, N.S.**; Springer, N.M.; Thimmapuram, J.; Weil, C.F.; McCann, M.C.; Carpita, N.C. "Genetic determinants for enzymatic digestion of lignocellulosic biomass are independent of those for lignin abundance in a maize recombinant inbred population," Plant Physiology 165(4), 1475-1487 (2014).

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Casey, E.; **Mosier, N.S.,** Adamec, J.; Stockdale, Z.; Ho, N.; Sedlak, M. "Effect of salts on the Co-fermentation of glucose and xylose by a genetically engineered strain of Saccharomyces cerevisiae," Biotechnology For Biofuels 6: 83 (2013).

Dweikat, I.; Weil, C.; Moose, S.; Kochian, L.; **Mosier, N**.; Ileleji, K.; Brown, P.; Peer, W.; Murphy, A.; Taheripour, F.; McCann, M.; Carpita, N. "Envisioning the Transition to a Next-Generation Biofuels Industry in the US Midwest," Biofuels Bioproducts & Biorefining 6(4): 376-386 (2012).

Emery, I.R.; **Mosier, N.S.** "The impact of dry matter loss during herbaceous biomass storage on net greenhouse gas emissions from biofuels production," Biomass & Bioenergy 39(SI): 237-246 (2012).

Kim, E.S.; Liu, S.; Abu-Omar, M.M.; **Mosier, N.S.** "Selective Conversion of Biomass Hemicellulose to Furfural Using Maleic Acid with Microwave Heating," Energy & Fuels 26(2): 1298-1304 (2012).

Zeng, M.J.; Ximenes, E.; Ladisch, M.R.; **Mosier, N.S.**; Vermerris, W.; Huang, C.P.; Sherman, D.M. "Tissue-specific biomass recalcitrance in corn stover pretreated with liquid hot-water: Enzymatic hydrolysis (part 1)," Biotechnology and Bioengineering 109(2):390-397 (2012).

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