

Academic and Government Research

Round 2

8/30/2006

| Item Designation | Title/Summary | Author | School/Area | Date |
|---|--|---|---|------|
| Adhesive Mastic Remover | Reactive Distillation for the Biorefinery: Production of Organic Acid Esters | Asthana, N, A. Kolah, D.T. Vu, C.T. Lira, and D.J. Miller | Michigan State University | 2005 |
| | Factors Influencing the Kinetics of Lactic Acid Esterification: Ethyl Lactate by Reactive Distillation | Asthana, N, A. Kolah, D.T. Vu, C.T. Lira, and D.J. Miller | Michigan State University | 2005 |
| | Improved Chemicals and Plastics from Oilseeds | | Office of Industrial Technologies Industries of the Future--Agriculture Program | 2002 |
| Biodegradable Containers | Utilization of alternate fiber in plastic composites | Biocomposite Group | Iowa State University | |
| | Degradable and Agriculturally Based Plastics | Center for Crops Utilization Research | Iowa State University | |
| | Development of Plastics from Soybean and Corn Oils | Sheares, V.V. | Iowa State University | |
| | Agroplastics: Blending Biomass with Plastics Resins | Guffy, D. | Iowa State University | |
| | Nonfood Uses For Soy Protein | Center for Crops Utilization Research | Iowa State University | |
| | PLA/nanoclay cast film composites using various polymer-clay concentrates | Lewitus, D. | University of Massachusetts | 2004 |
| | Investigation of polylactide as packaging material | Auras, R.A. | Michigan State University | 2004 |
| | The Fracture behavior and mechanical performances of biodegradable cornstarch plastic composites | Domingo, B.J. | University of Illinois | 1999 |
| | Research in the area of Biobased Plastics | Sun, X.S. | Kansas State University | |
| | Effects of storage time on properties of soybean protein-based plastics | Mo, X. and X.S. Sun | Kansas State University | 2002 |
| | Plasticization of soy protein polymer by polyol-based plasticizers | Mo, X. and X.S. Sun | Kansas State University | 2002 |
| | Plastic performance of soybean protein components | Sun, X.S., H.-R. Kim, and M. Xiaoqun | Kansas State University | 1999 |
| | Biodegradable Moldable Products and Films Comprising Starches Esters and Polyesters, US Patent 5462983 | Bloember, S. and R. Narayan | Michigan State University | 1995 |
| | Biodegradable Multi-Component Polymeric Materials Based on Unmodified Starch-Like Polysaccharides, US Patent 5500465 | Narayan, R | Michigan State University | 1996 |
| | Microfiber Reinforced Biodegradable Starch Ester Composites with Enhanced Shock Absorbance and Processability, US Patent 5728824 | Narayan, R | Michigan State University | 1998 |
| Rationale and Design for Biodegradable Plastics | Narayan, R | Society of Manufacturing Engineers | 2003 | |

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|---|---|---|------|
| Drivers for biodegradable/compostable plastics & role of composting in waste management & sustainable agriculture | Narayan, R | Bioprocessing of Solid Waste & Sludge | 2001 |
| Reactive Extrusion Process: Biodegradable Films & Injection Molded Products From Soy Protein-Polyester | Narayan, R | Materials Research Society Bulletin | 2000 |
| Biodegradable Composites and Blends of Starch with poly(e-caprolactone) | Narayan, R and M. Krishnan | American Chemical Society | 1995 |
| Biodegradable Plastics | Narayan, R | 9th Global Environmental Technology Congress | 1996 |
| Impact of Governmental Actions on an Emerging Biodegradable Plastics Industry | Narayan, R | Michigan State University | 1994 |
| Role of Biodegradable Materials in Solid Waste Management | Snook, J. and R. Narayan | Waste Management & Recycling International | 1994 |
| Biodegradable Plastics in Opportunities for Innovation | Narayan, R. | National Institute of Standards and Technology | 1993 |
| Recycling back to Nature - Environmentally Degradable Plastics | Narayan, R | Chapter One (AIChE Student Journal) | 1990 |
| Rationale and Design of Environmentally Degradable Plastics, Standardization News | Narayan, R | Michigan State University | 1989 |
| Environmentally Degradable Plastics | Narayan, R | Michigan State University | 1989 |
| Preparation of Corn-based Plastics for Materials Applications | Narayan, R | First Annual Corn Utilization Conference | 1987 |
| Biodegradability of Polylactide Film in Simulated Composting Environments | Snook, J.B. | Michigan State University | 1994 |
| Reactive Extrusion Processing of Cellulose esters for biobased and biodegradable plastics | Cheng, G. | Michigan State University | |
| Bio-based Plastics and Bio-Composites: Role of Compatibilizer To Improve Adhesion | Mohanty, A.K., L.T. Drzal, and M. Misra | 25th Annual Meeting of Adhesion Society, Inc. and 2nd World Congress on Adhesion and Related Phenomenon | 2002 |
| Natural Fiber Reinforced Biodegradable Plastic Composites: Eco-friendly Bio-composites from Kenaf & Polyester amide Bioplastic | Hokens, D., L.T. Drzal, M. Misra, and A.K. Mohanty | Bio-based Products and Bio-Composites Seminar at Michigan State University | 2001 |
| Starch Esters as Biodegradable Plastics: Effects of Ester Group Chain Length and Degree of Substitution on Anaerobic Biodegradation | Rivard, C., L. Moens, K. Roberts, J. Brigham, and S. Kelley | Enzyme and Microbial Technology. Vol. 17 1995, National Renewable Energy Laboratory | 1995 |
| Researchers Zero In on Inexpensive Biodegradable Plastics. Technology Transfer Office Fact Sheet | | National Renewable Energy Laboratory | 1995 |

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|-------------------------------------|--|---|--|------|
| | Photobiological Conversion of Synthesis Gas into Biodegradable Plastics | Maness, P. C. and P.F. Weaver | Fifteenth Symposium on Biotechnology for Fuels and Chemicals, National Renewable Energy Laboratory | 1993 |
| | Biodegradable Plastics | Rivard, C. | Journal of Environmental Health Vol. 53(4), National Renewable Energy Laboratory | 1990 |
| | Properties and microstructure of plasticized zein films | Properties and microstructure of plasticized zein films | University of Illinois | 1997 |
| | Agricultural Wastes Make "Agro-plastics" Lighter and Stronger | Graef, J. | DOE Energy Efficiency and Renewable Energy | 2004 |
| | Biobased PLA Polymers Grow New Markets for American Corn Products | | Biomass Research and Development Initiative | 2003 |
| | Biodegradable Performance Polymers from Switchgrass | | Office of Industrial Technologies Industries of the Future--Agriculture Program | 2002 |
| | Improved Chemicals and Plastics from Oilseeds | | Office of Industrial Technologies Industries of the Future--Agriculture Program | 2002 |
| | Utilization of Corn-Based Polymers | | Office of Industrial Technologies Industries of the Future--Agriculture Program | 2001 |
| | Synthesis and Characterization of Biobased Lubricant Additives | Sharma, B., J. Perez, and S. Erhan | USDA ARS | 2006 |
| | Molecular and Process Scale Discovery, Innovation, and Economics for Replacement of Fossil Fuel Derived Products | Ladisch, M. | Purdue University | |
| | Plasticulture practice for early fresh market cantaloupe production | Bartolo, M.E. and F.C. Schweissing | Colorado State University | 2003 |
| | Poly lactides: Plastics from Corn | Dorgan, J. | Colorado School of Mines | 2003 |
| Biofluid Filled Transformers | Thermally Stable Vegetable Oil based Lubricants via Reductive Ozonolysis | Vickray, R. | Michigan State University | 2004 |
| | Industrial uses for animal fats and vegetable oils, including biodiesel and lubricants | Industrial Agricultural Products Center | University of Nebraska | |
| | Use of Soybean Oil in Biobased Products | Erhan, S. | USDA ARS | 2006 |
| | Chemical Systems for Soybean Oil Conversion to Industrial Products | | USDA ARS | |
| | Synthesis and Characterization of Biobased Lubricant Additives | Sharma, B., J. Perez, and S. Erhan | USDA ARS | 2006 |
| | Friction and Wear Behavior of Biobased Lubricant Additives | Sharma, B., J. Perez, and S. Erhan | USDA ARS | 2006 |

| | | | | |
|-------------------------|--|---|---|------|
| | Friction Behavior of Some Seed Oils: Bio-Based Lubricant Applications | Adhvarya, A., G. Biresaw, B. Sharma, and S. Erhan | USDA ARS | 2006 |
| | Vegetable Oil Based Biodegradable Lubricants for Industrial Applications | Erhan, S. and B. Sharma | USDA ARS | 2006 |
| | Use of Vegetable Oils in Functional Fluids | Erhan, S., A. Advharyu, and Z. Liu | USDA ARS | 2002 |
| | Soybean Oil-Based Base Stocks | Erhan, S. | USDA ARS | 2001 |
| | General research done in the area of "Chemical Systems for Soybean Oil Conversion to Industrial Products" | | USDA ARS | |
| | Industrial Products from New Crops | | USDA ARS | |
| | Biobased Industrial Fluids and Lubricants | Erhan, S.V. and J.M. Perez | Champaign, IL: Aocs Press | 2002 |
| | Powering Up with Bio-based oils | Fields, S. | Tribology & Lubrication Technology, Vol. 60 | 2004 |
| Composite Panels | Developing and optimizing protein based environmentally friendly resins | Biocomposite Group | Iowa State University | |
| | Investigating the applications for alternate uses for farm product refusals as a fiber source for building material industry | Biocomposite Group | Iowa State University | |
| | Formulating and optimizing the Soybean-based Resins to be comparative or superior to the commonly used industrial grade resins | Biocomposite Group | Iowa State University | |
| | Composite Products From Juvenile Hybrid Poplars Bonded With Crosslinked Soy Adhesives | Stokke, D.D. and K. Monlin | Iowa State University | |
| | Nonfood Uses For Soy Protein | | Iowa State University | |
| | Design and engineering of eco-friendly biocomposites from hemp fiber and low-cost novel soy protein-based bioplastics | Hokens, D.D. | Michigan State University | 2002 |
| | The development of biocomposites from aligned biofiber and biobased epoxy resin | Belcher, L.K.A. | Michigan State University | 2002 |
| | Fundamental approaches to improving performance of soy protein isolate based 'green' plastics and composites | Lodha, P. | Cornell University | 2004 |
| | Development of a soybean oil based epoxy resin system and its application in composite material fabrication | Maples, M.F. | University of Missouri | 2003 |
| | Development and characterization of soy-based epoxy resins and pultruded FRP composites | Zhu, J. | University of Missouri | 2002 |
| | Manufacturing process and characterization of soy-protein polymers and glass fiber reinforced soy-protein composites | Liang, F. | Kansas State University | 2000 |

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|---|--|------------------------------------|------|
| Modification of interface in natural fiber reinforced polymer composites | Gulati, D. | University of Toronto | 2005 |
| Parametric material layout optimization of natural fiber composite panels | Isaac, C. | Michigan State University | 2005 |
| Biocomposites from engineered natural fibers and unsaturated polyester resin for housing panel applications | Mehta, G. | Michigan State University | 2004 |
| Gas injection consolidation of natural fiber beams | Kim, J.-W. | Oregon State University | 2003 |
| Lignin and carbon nanotube utilization in bio-based composites | Thielemans, W. | University of Delaware | 2004 |
| Tilt-up concrete vs. fiber resin composite: A comparative analysis | Greene, R.R. | California State University | 2001 |
| Sealed consolidation of natural fiber composites with chemical reactant injection and removal | Chowdhury, M.J. Alam | Oregon State University | 1999 |
| Durable wood adhesives from furfural-based diols, diamines, and diisocyanates | Coppock, K.P. Pittman | University of Wisconsin | 1996 |
| The design, synthesis, and characterization of environmentally friendly wood adhesives | Cook, R.C. | University of Southern Mississippi | 2001 |
| Soybean-based wood adhesives for structural panels | Yang, I. | Iowa State University | 2002 |
| The incorporation of corn- and soybean-based materials into plywood adhesives | Karcher, L.P. | University of Illinois | 1997 |
| Chemical modification and utilization of soy proteins for industrial applications | Park, S.-K. | Texas A&M University | 1997 |
| Adhesion mechanism of soybean protein adhesives with cellulosic materials | Cheng, E. | Kansas State University | 2004 |
| Feasibility of producing composite panels with agricultural residues | Pearce, R.J. | Mississippi State University | 1999 |
| Biobased Adhesives & Resins | Sun, X.S. | Kansas State University | |
| Natural Fiber Particle Boards | Sun, X.S. | Kansas State University | |
| Adhesive Properties of modified soybean flour in wheat straw particleboard | Cheng, E., X.S. Sun, and G. Karr | Kansas State University | 2004 |
| Wet strength and water resistance of modified soy protein adhesives and effects of drying treatment | Zhong, Z., X.S. Sun, D. Wang, and J.A. Ratto | Kansas State University | 2004 |
| Physical properties of medium-density straw particleboard | Mo, X., E. Cheng, D. Wang, and X. Sun | Kansas State University | 2002 |
| Low density straw particle board | Wang, D. and X.S. Sun | Kansas State University | 2002 |
| Compression and tensile strength of low density wheat-protein particle board | Mo, X., J. Hu, X.S. Sun, and J. Ratto | Kansas State University | 2001 |
| Adhesion Strength of Sodium Dodecyl Sulfate-Modified Soy Protein on Fiberboard | Zhong, Z., X.S. Sun, X. Feng, and J. Ratto | Kansas State University | 2001 |
| Adhesive strength of guanidine hydrochloride-modified soy protein for fiberboard application, Int. | Zhong, Z., X.S. Sun, X. Feng, and J. Ratto | Kansas State University | 2001 |

| | | | |
|---|---|--|------|
| Physical properties of strawboard as affected by processing parameters | Karr, G. and Sun, X.S. | Kansas State University | 2000 |
| Strawboard from vapor phase acetylation of wheat straw | Karr, G. and Sun, X.S. | Kansas State University | 2000 |
| How sustainable are biopolymers and biobased products? the hope, the doubts, and the reality. In Natural Fibers, Biopolymers, and Biocomposites | Patel, M. and R. Narayan | Michigan State University | 2005 |
| Soy protein-based plastics, blends, and composites, In Natural Fibers, Biopolymers, and Biocomposites | Mohanty, A.K., W. Liu, P. Tummala, L.T. Drzal, M. Misra, and R. Narayan | Michigan State University | 2005 |
| BioComposites synthesized from chemically modified soy oil and biofibers | Tran, P., D. Graiver, and R. Narayan | Michigan State University | 2005 |
| Soy Protein-based Plastics, Blends, & Composites | A. Mohanty, W. Liu, P. Tummala, M. Misra, and R. Narayan | Michigan State University | 2005 |
| Polymer Resins Designed for Environmental Sustainability | Bloembergen, S., I. McLennan, S.C. Cassar, and R. Narayan | Michigan State University | 1998 |
| Biofiber-Reinforced Polypropylene Composites | Karnani, R. M. Krishnan, and R. Narayan | Polymer Engineering and Science | 1996 |
| Opportunities for composites from recycled wastewood-based resources: a problem analysis and research plan | Rowell, R.M., H. Spelter, R.A. Arola, P. Davis, T. Friberg, R.W. Hemingway, T. Rials, D. Luneke, and R. Narayan | Forestry Products Journal | 1993 |
| An overview of three biotechnology areas for the development of advanced composite materials and structures | Gunderson, S. L., R. Narayan, and R.C. Schiavone | American Society for Composites Fifth Technical Conference | 1990 |
| Kenaf Fiber Reinforced PP Composites | Carlson, D. | Michigan State University | 1996 |
| Engineered Biocomposites | Fowlks, A. | Michigan State University | |
| Surface Modifications of Natural Fiber and Performance of the Resulting Biocomposites | Mohanty, A.K., M. Misra, and L.T. Drzal | Michigan State University | 2001 |
| Design and Engineering of Green Composites from Biofibers and Bacterial Bioplastics | Drzal, L.T. | Michigan State University | |
| Sustainable Biodegradable Green Nanocomposites From Bacterial Bioplastic For Automotive Applications | Drzal, L.T. | Michigan State University | 2006 |
| Bio-composites From Engineered Natural Fibers for Housing Panel Applications | Drzal, L.T. | Michigan State University | 2004 |
| Native Michigan Grasses as New, Renewable, Biofiber Reinforcements for Soy-protein based Bio-Composites | Drzal, L.T. | Michigan State University | 2004 |

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|---|---|---------------------------|------|
| Structural Bio-Composites from Engineered Corn Straw Fibers and Novel Soy-based Resins | Drzal, L.T. | Michigan State University | 2003 |
| "Green" composite from recycled cellulose and Poly(lactic acid):Physico-mechanical and morphological evaluation | Huda, M.S., A.K. Mohanty, L.T. Drzal, M. Misra, and E. Schut | Michigan State University | 2005 |
| Novel biobased nanocomposites from functionalized vegetable oil and organically-modified layered silicate clay | Miyagawa, H. , M. Misra, L.T. Drzal, and A.K. Mohanty | Michigan State University | 2005 |
| Hierarchical cellular designs for load-bearing biocomposite beams and plates | Burgueño, R., M.J. Quagliata, A.K. Mohanty, G. Mehta, L.T. Drzal, and M. Misra | Michigan State University | 2005 |
| 'Green' composites from soy based plastic and pineapple leaf fiber: fabrication and properties evaluation | Liu, W., M. Misra, P. Askeland, L.T. Drzal, and A.K. Mohanty | Michigan State University | 2005 |
| Load-bearing natural fiber composite cellular beams and panel | Burgueno, R., M.J. Quagliata, A.K. Mohanty, G. Mehta, L.T. Drzal, and M. Misra | Michigan State University | 2005 |
| Novel Bio-composites Sheet Molding Compounds for Low Cost Housing Panel Applications | Mehta,G., A.K. Mohanty, K. Thayer, M. Misra, and L.T. Drzal | Michigan State University | 2005 |
| Rheological, thermal, and morphological characteristics of plasticized cellulose acetate composite with natural fibers | Choi, J.S., S.T. Lim, H.J. Choi, S.M. Hong, A.K. Mohanty, L.T. Drzal, M. Misra, and A.C. Wibowo | Michigan State University | 2005 |
| Sustainable Cellular Biocomposites from Natural Fibers and Unsaturated Polyester Resin for Housing Panel Applications | Burgueno, R., M.J. Quagliata, G. Mehta, A.K. Mohanty, M. Misra, and L.T. Drzal | Michigan State University | 2005 |
| Biobased Epoxy/Layered Silicate Nanocomposites: Thermophysical Properties and Fracture Behavior Evaluation | Miyagawa, H., M. Misra, L.T. Drzal, and A.K. Mohanty | Michigan State University | 2005 |
| Injection Molded Glass Fiber Reinforced Poly (trimethylene terephthalate) Composites: Fabrication and Properties Evaluation | Liu, W., A.K. Mohanty, L.T. Drzal, M. Misra, J.V. Kurian, R.W. Miller, and N. Strickland | Michigan State University | 2005 |
| Recent Advances in Biodegradable Nanocomposites | Pandey, J.K., A.P. Kumar, M. Misra, A.K. Mohanty, and L.T. Drzal | Michigan State University | 2005 |

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|---|--|---------------------------|------|
| Nanocomposites from biobased epoxy and single-wall carbon nanotubes: synthesis and mechanical and thermophysical properties evaluation | Miyagawa, H., A.K. Mohanty, L.T. Drzal, and M. Misra | Michigan State University | 2005 |
| A Study on Biocomposite from Recycled Newspaper Fiber and Poly(lactic acid) | Huda, M.S., L.T. Drzal, M. Misra, A.K. Mohanty, K. Williams, D.F. Mielewiski, and M. Misra | Michigan State University | 2005 |
| Influence Of Fiber Surface Treatment On Properties Of Indian Grass Fiber Reinforced Soy Protein Based Biocomposites | Liu, W., A.K. Mohanty, P. Askeland, L.T. Drzal, and M. Misra | Michigan State University | 2004 |
| Green' Nanocomposites from Cellulose Acetate Bioplastic and Clay | Park, H., M. Misra, L.T. Drzal, and A.K. Mohanty | Michigan State University | 2004 |
| Are Natural Fiber Composites Environmentally Superior to Glass Fiber Reinforced Composites? | Joshi, S.V., L.T. Drzal, A.K. Mohanty, and S. Arora | Michigan State University | 2004 |
| A review on pineapple leaf fibers, sisal fibers and their biocomposites | Mishra, S., A.K. Mohanty, L.T. Drzal , M. Misra, and G. Hinrichsen | Michigan State University | 2004 |
| Effect of Process Engineering on the Performance of Natural Fiber Reinforced Cellulose Acetate Biocomposites | Mohanty, A.K., A. Wibowo, M. Misra, and L.T. Drzal | Michigan State University | 2004 |
| Biobased Polyurethane and Its Composite with Glass Fiber | Latere Dwan'isa, J.-P., A.K. Mohanty, M. Misra, L.T. Drzal, and M. Kazemizadeh | Michigan State University | 2004 |
| Effect of alkali treatment on the structure, morphology and thermal properties of native grass fibers as reinforcements for polymer matrix composites | Liu, W., A.K. Mohanty, L.T. Drzal, P. Askeland, and M. Misra | Michigan State University | 2004 |
| Biocomposite Materials from Natural Fiber and Soyoil-based Polyurethanes: Fabrication and Dynamic Mechanical Analysis | Latere Dwan'isa, J.-P., A.K. Mohanty, M. Misra, L.T. Drzal, and M. Kazemizadeh | Michigan State University | 2004 |
| Biobased resin as a toughening agent for biocomposites | Mehta, G., A.K. Mohanty, M. Misra, and L.T. Drzal | Michigan State University | 2004 |
| Effect of Novel Sizing on the Mechanical and Morphological Characteristics of Natural Fiber Reinforced Polyester Resin based Composites | Mehta, G., A.K. Mohanty, M. Misra, and L.T. Drzal | Michigan State University | 2004 |

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|--|--|---------------------------|------|
| Preparation and characterization of plasticized cellulose acetate biocomposite with natural fiber | Choi, J.S., S.T. Lim, H.J. Choi, A.K. Mohanty, L.T. Drzal, M. Misra, and A. Wibowo | Michigan State University | 2004 |
| Nanocomposites from biobased epoxy: Studies on the effect of nanoreinforcements on the fracture toughness and impact strength | Miyagawa, H., A.K. Mohanty, M. Misra, and L.T. Drzal | Michigan State University | 2004 |
| Effect of Compatibilizer on Nanostructure of the Biodegradable Cellulose Acetate/Organoclay Nanocomposites | Park, H., X. Liang, A.K. Mohanty, M. Misra, and L.T. Drzal | Michigan State University | 2004 |
| Hemp Fiber Reinforced Cellulosic Plastic Biocomposites: Thermo-Mechanical and Morphological Characterization | Wibowo, A.C., A.K. Mohanty, M. Misra, and L.T. Drzal | Michigan State University | 2004 |
| Studies on Mechanical Performance of Biofiber/Glass Reinforced Polyester Hybrid Composites | Mishra, S., A.K. Mohanty, L.T. Drzal, M. Misra, S. Parija, S.K. Nayak, and S.S. Tripathy | Michigan State University | 2003 |
| Novel Biobased Polyurethanes Synthesized from Soybean Phosphate Ester Polyols and 4,4'-Diphenylmethane Diisocyanate: Studies on Thermo-mechanical Properties | Latere Dwan'Isa, J.-P., A.K. Mohanty, M. Misra, L.T. Drzal, and M. Kazemizadeh | Michigan State University | 2003 |
| Adhesion Promotion in Natural Fiber Reinforced Powder Polypropylene Composites | Mohanty, A.K., L.T. Drzal, and M. Misra | Michigan State University | 2002 |
| Sustainable Bio-Composites From Renewable Resources: Opportunities and Challenges | Mohanty, A.K., L.T. Drzal, and M. Misra | Michigan State University | 2002 |
| Engineered Natural Fiber Reinforced Composites: Influence of Surface Modifications and Novel Powder Impregnation Processing | Mohanty, A.K., L.T. Drzal, and M. Misra | Michigan State University | 2002 |
| Use of Maleated Polyolefins as Adhesion Promoters in Engineered Natural Reinforced Polypropylene Composites: Novel Powder Impregnation Processing | Mohanty, A.K., L.T. Drzal, and M. Misra | Michigan State University | 2002 |
| Influence of Novel Coupling Agents on Mechanical Properties of Jute Reinforced Polypropylene Composite | Khan, M.A., G. Hinrichsen, and L.T. Drzal | Michigan State University | 2001 |
| Surface modifications of natural fibers and performance of the resulting biocomposites | Mohanty, A.K., M. Misra, and L.T. Drzal | Michigan State University | 2001 |
| Bio-composites vs. green composites: Opportunities are clearing but challenges are to be made | Mohanty, A.K., M. Misra, and L.T. Drzal | Michigan State University | 2002 |
| Environmentally Friendly Biocomposites from Soy-based Bioplastic and Natural Fiber | Drzal, L.T., A.K. Mohanty, P. Tummala, and M. Misra | Michigan State University | 2002 |

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|---|--|---|------|
| Bio-Composites To Green Composites: Past, Present and Future | Drzal, L.T., A.K. Mohanty, and M. Misra | American Institute of Chemical Engineers Annual Conference | 2002 |
| Biomass Grasses As New Renewable Bio-fiber Reinforcements for High-value Bio-Composite Applications | Misra, M., A.K. Mohanty, L.T. Drzal, and T. Smith | American Institute of Chemical Engineers Annual Conference | 2002 |
| Bio-based Plastics and Bio-Composites: Role of Compatibilizer To Improve Adhesion | Mohanty, A.K., L.T. Drzal, and M. Misra | 25th Annual Meeting of Adhesion Society, Inc. and 2nd World Congress on Adhesion and Related Phenomenon | 2002 |
| Role of Silane and Novel Water-based Coupling Agent In Increasing The Adhesion Between Natural Fiber and Polypropylene | Misra, M., L.T. Drzal, and A.K. Mohanty | 25th Annual Meeting of Adhesion Society, Inc. and 2nd World Congress on Adhesion and Related Phenomenon | 2002 |
| Natural/Bio-fiber Reinforced Polyolefin Composites: Bio-based Opportunities and Challenges in the Materials World | Misra, M., A.K. Mohanty, and L.T. Drzal | Proceedings of 8th Annual Global Plastics Environmental Conference | 2002 |
| Eco-friendly Bio-Composites: Natural Fiber Reinforced Thermoplastic Bio-Polyester Composites | Hokens, D., A.K. Mohanty, M. Misra, and L.T. Drzal | Annual Global Plastics Environmental Conference | 2002 |
| Rationale Behind Education on Emerging Bio-Composite Materials For a New Millennium | Mohanty, A.K., L.T. Drzal, and M. Misra | Composite Materials Education of American Society of Composites Annual Meeting | 2002 |
| Injection Molded Bio-Composites from Natural Fiber and Biodegradable Thermoplastic Bio-polyester – Physico-Mechanical Properties Evaluation | Tumala, P., A.K. Mohanty, M. Misra, and L.T. Drzal | American Society of Composites Annual Meeting | 2002 |
| Plasticized Cellulose Acetate and Biodegradable Green Nanocomposites | Wibowo, A., L.T. Drzal, A.K. Mohanty, R. Schalek, and M. Misra | Bio-based Products and Bio-Composites Seminar at Michigan State University | 2001 |
| Environmentally-friendly "Green" Bio-Composites From Natural Fiber and Cellulosic Plastic | Wibowo, A., D. Hokens, M. Misra, A.K. Mohanty, and L.T. Drzal | Bio-based Products and Bio-Composites Seminar at Michigan State University | 2001 |
| Bio-Composites from Engineered Natural Fibers and Powder Polypropylene: Evaluation of Fiber-Matrix Adhesion and Physico-mechanical Properties | Liong, D., L.T. Drzal, A.K. Mohanty, and M. Misra | Bio-based Products and Bio-Composites Seminar at Michigan State University | 2001 |
| Corn Stalk Fiber for Bio-Composites: Explosion and Alkali Treatment of Corn Fibers - A Morphology Study | Ferguson, K., L.T. Drzal, M. Misra, and A.K. Mohanty | Bio-based Products and Bio-Composites Seminar at Michigan State University | 2001 |
| Eco-friendly Bio-Composite From Plant Derived Fiber and Crop Derived Plastics | Mohanty, A.K., L.T. Drzal, and M. Misra | American Institute of Chemical Engineers Conference | 2001 |

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|---|---|--|------|
| Engineered Natural Fiber Reinforced Thermoplastic Composites: Non-biodegradable Polypropylene vs. Biodegradable Cellulosic Plastic Based Bio-Composites | Misra, M., L.T. Drzal, and A.K. Mohanty | American Institute of Chemical Engineers Conference | 2001 |
| Bio-Composites From Engineered Natural Fibers: Petro-based Plastics vs. Bio-plastics | Drzal, L.T., A.K. Mohanty, and M. Misra | Materials Research Society | 2001 |
| Bio-Composite Materials As Alternatives To Petroleum-Based Composites For Automotive Applications | Drzal, L.T., A.K. Mohanty, and M. Misra | Automotive Composite Conference | 2001 |
| Bio-Composites From Biofibers and Biodegradable Polymers | Mohanty, A.K., M. Misra, and L.T. Drzal | American Society for Composites Annual Technical Conference | 2001 |
| Biocomposites from Engineered Natural Fibers and Powder Polypropylene: Evaluation of Fiber-matrix adhesion and Physico-mechanical Properties | Mohanty, A.K., M. Misra, and L.T. Drzal | American Society for Composites Annual Technical Conference | 2001 |
| Eco-friendly Composite Materials from Biodegradable Polymers: Biocomposites To Nanocomposites | Mohanty, A.K., L.T. Drzal, D. Hokens, and M. Misra | Polymer Preprint – Polymeric Materials Science and Engineering, American Chemical Society, Vol. 85 | 2001 |
| Powder Impregnation Processing and Role of Novel Water Based Coupling Agents in Natural Fiber-Reinforced Thermoplastic Composites | Drzal, L.T., A.K. Mohanty, and M. Misra | Polymer Preprint – Polymer Chemistry Division, American Chemical Society, Vol. 42(2) | 2001 |
| Natural Fiber Reinforced Thermoset Composites: Studies on Fiber-Matrix Adhesion of Aligned Henequen Fiber Epoxy Composites | Belcher, L., L.T. Drzal, M. Misra, and A.K. Mohanty | Polymer Preprint – Polymer Chemistry Division, American Chemical Society, Vol.42(2) | 2001 |
| Silane and Mixed/Hybrid Coupling Agents for Natural Fiber Composites | Mohanty, A.K., L.T. Drzal, and M. Misra | International Symposium on SILANES and other Coupling Agents | 2001 |
| Scanning Electron Microscopy Study of Natural Fiber Composites | Misra, M., A.K. Mohanty, and L.T. Drzal | Michigan Microscopy & Microanalysis Society Spring Meeting | 2001 |
| Surface modification of natural fibers and performance of the resulting biocomposites: An overview | Mohanty, A.K., M. Misra, and L.T. Drzal | International Conference on Composite Interfaces at Case Western Reserve University, Cleveland | 2000 |
| The Influence of Surface Modifications on performance of short henequen fiber – polypropylene composites | Mohanty, A.K., M. Misra, and L.T. Drzal | Society for the Advancement of Material and Process Engineering | 2000 |
| Environmentally-Friendly Composites from Jute and Mater-Bi | Mohanty, A.K., M. Misra, and L.T. Drzal | Society for the Advancement of Material and Process Engineering | 2000 |
| The Influence of Surface Modifications on performance of short henequen fiber – polypropylene composites | Mohanty, A.K., M. Misra, and L.T. Drzal | Society for the Advancement of Material and Process Engineering | 2000 |

| | | | |
|--|--|---|------|
| Composites and Blends from Biobased Materials | Kelley, S. and S.S. Shojaie | Advanced Industrial Materials Program: Compilation of Project Summaries and Significant Accomplishments | 1996 |
| Improvement of Biobased Fiber-Plastic Composite Properties Through Cold Plasma Treatments | Young, R.A | University of Wisconsin | 1996 |
| Interphase Effects on the Mechanical and Physical Aspects of Natural Fiber Composites | Young, R.A | University of Wisconsin | 1999 |
| Activation and Characterization of Fiber Surfaces for Composites - Chapter 9 in Emerging Technologies for Materials and Chemicals from Biomass | Young, R.A | University of Wisconsin | 1992 |
| Adhesion Properties of Cellulose Films | Young, R.A | University of Wisconsin | 2000 |
| Efficient Utilization of Woody Biomass: A Cellulose-Particleboard-Synfuels Model | Young, R.A | University of Wisconsin | 1983 |
| New Approaches to Wood Bonding: A Base-Activated Lignin Adhesive System | Young, R.A | University of Wisconsin | 1984 |
| A Lignin Adhesive System for Flakeboard Production | Young, R.A | University of Wisconsin | 1986 |
| Advances in Lignocellulosic-Derived Composites | Young, R.A | University of Wisconsin | 1989 |
| Strength Properties of Composites from Biobased and Synthetic Fibers | Young, R.A | University of Wisconsin | 1993 |
| Biobased Composites for Automotive Application | Young, R.A | University of Wisconsin | 1992 |
| Results of Chemical Modification of Lignocellulosic Fibers For Use in Composites | Young, R.A | University of Wisconsin | 1993 |
| Paper and Composites from Bioresources | Young, R.A | University of Wisconsin | 1994 |
| Affordable Resins and Adhesives from Optimized Soybean Varieties | | Office of Industrial Technologies Industries of the Future -- Agriculture Program | 2002 |
| Turning Biomass into Adhesives and Plastics | | NREL | 1994 |
| Functionalized Vegetable Oils for Utilization as Polymer Building Blocks | | Office of Industrial Technologies Industries of the Future -- Agriculture Program | 2001 |
| Research in the area of: Chemical Systems for Soybean Oil Conversion to Industrial Products | | USDA ARS | |
| Green Composites: Preparation of Epoxidized Soybean Oil and Flax Fiber Composites | Liu, Z., S. Erhan, D. Akin, and F. Barton | USDA ARS | 2006 |
| "Green" Composites from Soybean Oil | Liu, Z. and S. Erhan | USDA ARS | 2005 |
| Development of Soy Composites by Direct Deposition | Liu, Z. and S. Erhan | USDA ARS | 2005 |
| Development of Soybean oil/flax fiber based composites by compression molding method | Liu, Z., S. Erhan, D. Akin, and F. Barton | USDA ARS | 2005 |
| Preparation of Soy-based Composites Reinforced with Protein Coated Flax Fiber | Liu, Z., D. Akin, F. Barton, C. Onwulata, and S. Erhan | USDA ARS | 2004 |

| | | | | |
|-------------------------------------|--|--|---|------|
| | Solid Freeform Fabrication of Soybean Oil Based Composites Reinforced with Clay and Fibers | Liu, Z., S. Erhan, and P. Calvert | USDA ARS | 2004 |
| | Soybean Oil Based Composites | Erhan, S. and Z. Liu | USDA ARS | 2003 |
| | Preparation of Soybean Oil Based Composites Reinforced with Flax Fiber | Liu, Z., S. Erhan, D. Akin, and F. Barton | USDA ARS | 2002 |
| | Extrusion Freeform Fabrication of Soybean Oil Based Composites by Direct Deposition | Erhan, S. and Z. Liu | USDA ARS | 2002 |
| | Development of Agriculturally-Derived Biopolymer Composites for Non-Food Applications | | USDA ARS | |
| | Innovation for Replacement of Fossil Fuel Derived Products | Ladisch, M. | Purdue University | |
| | Rice straw-wood particle composite for sound absorbing wooden construction materials | Yang, H.-S., D.-J. Kim, and H.-J. Kim | Seoul National University | 2002 |
| | Compositional analysis of thermoplastic wood composites by TGA | Glasser, W.G., S. Renneckar, A. Zink-Sharp, and T.C. Ward | Virginia Polytechnic Institute and State University | 2004 |
| | Alkali extracted steam-exploded Acacia mangium wood fiber as reinforcing material for polypropylene-based composites | Glasser, W.G., R.M. Taib, Z.A.M. Ishak, and R.H. Din | Virginia Polytechnic Institute and State University | 2004 |
| | Bio-based composite roof structure: Manufacturing and processing issues | Dweib, M.A., B. Hu, H.W. Shenton III, and R.P. Wool | University of Delaware | 2005 |
| | All natural composite sandwich beams for structural applications | Dweib, M.A., B. Hu, H.W. Shenton III, and R.P. Wool | University of Delaware | 2003 |
| Fertilizers | Evaluation of organic turfgrass management and its environmental impact by dissolved organic matter | Li, K. | University of Massachusetts | 2005 |
| | | Stiles, D. | Pacific Northwest National Laboratory | |
| | | Erbach, D.C. | USDA ARS | |
| | Searching for sustainability: Chinese ecological agriculture in Zhejiang province | Thomas, B.J. | University of Oregon | 2001 |
| | Organic farming in the Republic of Ireland | McDonald, M.R. | University of Pittsburgh | 1994 |
| Grease and Graffiti Removers | Reactive Distillation for the Biorefinery: Production of Organic Acid Esters | Asthana, N., A. Kolah, D.T. Vu, C.T. Lira, and D.J. Miller | Michigan State University | 2005 |
| | Factors Influencing the Kinetics of Lactic Acid Esterification: Ethyl Lactate by Reactive Distillation | Asthana, N., A. Kolah, D.T. Vu, C.T. Lira, and D.J. Miller | Michigan State University | 2005 |
| | Clean Solvents - Alternative Media for Chemical reactions and Processing | Abraham, M.A. and L. Moens | ACS Symposium Series 819 | 2001 |
| | Life cycle assessment of a biobased process for producing 1, 3-propanediol | Ogletree, A.L. | Iowa State University | 2004 |

| | | | | |
|---|--|--|---|------|
| | Bio Based Alternative Solvents: How Well Do They Work | Marshall, J. and H. Wilcox | University of Massachusett | 2003 |
| | Improved Chemicals and Plastics from Oilseeds | | Office of Industrial Technologies Industries of the Future--Agriculture Program | 2002 |
| Hand Cleaners and Sanitizers | Reactive Distillation for the Biorefinery: Production of Organic Acid Esters | Asthana, N., A. Kolah, D.T. Vu, C.T. Lira, and D.J. Miller | Michigan State University | 2005 |
| | Factors Influencing the Kinetics of Lactic Acid Esterification: Ethyl Lactate by Reactive Distillation | Asthana, N., A. Kolah, D.T. Vu, C.T. Lira, and D.J. Miller | Michigan State University | 2005 |
| | Improved Chemicals and Plastics from Oilseeds | | Office of Industrial Technologies Industries of the Future--Agriculture Program | 2002 |
| Insulating Foams for Wall Construction | Modeling the effect of formulation on the properties of extruded corn flour-based foamed plastic | Julson, J.L. | University of Nebraska | 1998 |
| | A comparative life cycle assessment: Polyethylene and starch foams | Brookes, C.K. | Michigan State University | 2004 |
| | Properties of biodegradable polymers from starch acetate and starch acetate-maleate mixed esters | Xu, Y. | University of Nebraska | 2005 |
| | Use of thermal flow analysis and X-ray microtomography to model microstructure evolution in extruded biopolymeric foams | Trater, A.M. | Kansas State University | 2004 |
| | | Kaempf, D. | Biomass Research and Development Initiative | |
| | Twin-Screw Extrusion Production and Characterization of Starch Foam Products for Use in Cushioning and Insulation Applications | Nabar, Y., and R. Narayan | Michigan State University | |
| | Process engineering principles of production of starch foams | Nabar, Y., and R. Narayan | Michigan State University | 2002 |
| | Design & Engineering of Starchbased foam products | Nabar, Y. | Michigan State University | 2004 |
| | Engineering Biobased Foam Materials | Wright, J. | Michigan State University | |
| | Lignin-Based Thermoplastic Foams for building Insulation | Sarkanen, S. and P. Huelman | University of Minnesota | 2005 |
| Metalworking Fluids | p-menthane-1,2,4-triol: Isolation and identification of a bioactive compound and analysis of structure/activity relationships of analogs | Lee, P.S.K. | University of Houston | 1992 |
| | Evaluation of emulsifier systems for petroleum- and bio-based semi-synthetic metalworking fluids | Zimmerman, J.B. | University of Michigan | 2003 |
| | The Center is developing industrial uses for animal fats and vegetable oils, including biodiesel and lubricants | Industrial Agricultural Products Center | University of Nebraska | |

| | | | |
|--|---|---|------|
| Thermally Stable Vegetable Oil based Lubricants via Reductive Ozonolysis | Vickray, R. | Michigan State University | 2004 |
| Improved Chemicals and Plastics from Oilseeds | | Office of Industrial Technologies Industries of the Future--Agriculture Program | 2002 |
| The Use of Soybean Oil in Biobased Products | Erhan, S. | USDA ARS | 2006 |
| Research in the area of: Chemical Systems for Soybean Oil Conversion to Industrial Products | | USDA ARS | |
| Synthesis and Characterization of Biobased Lubricant Additives | Sharma, B., J.M. Perez, and S. Erhan | USDA ARS | 2006 |
| Friction and Wear Behavior of Biobased Lubricant Additives | Sharma, B., J.M. Perez, and S. Erhan | USDA ARS | 2006 |
| Friction Behavior of Some Seed Oils: Bio-Based Lubricant Applications | Adhvarya, A., G. Biresaw, B. Sharma, and S. Erhan | USDA ARS | 2006 |
| Vegetable Oil Based Biodegradable Lubricants | Erhan, S. and B. Sharma | USDA ARS | 2006 |
| Use of Vegetable Oils in Functional Fluids | Erhan, S., A. Adhvaryu, and Z. Liu | USDA ARS | 2002 |
| Soybean Oil-Based Base Stocks | Erhan, S. | USDA ARS | 2001 |
| Chemical Systems for Soybean Oil Conversion to Industrial Products | | USDA ARS | |
| Production of Value-Added Lipids, Biofuels, and Biobased Products from Fats and Oils | | USDA ARS | |
| New Metalworking Fluids from Bio-Based Materials | | USDA ARS | |
| New and Expanded Uses of Oilseed Products and By-Products | Wan, P., M. Dowd, I. Lima, M. Kuk, and O. Dailey | USDA ARS | |
| Biobased Industrial Fluids and Lubricants | Erhan, S.V., and J.M. Perez | Champaign, IL: Aocs Press | 2002 |
| New Lubricants from vegetable oil: cyclic acetals of methyl 9,10-dihydroxystearate | Filley, J. | Colorado School of Mines | 2004 |
| Development of biobased synthetic fluid: application of molecular modeling to structure-physical property relationship | Adhvaryu, A., B.K. Sharma, H.S. Hwang, S.Z. Erhan, and J.M. Perez | American Chemical Society | 2005 |
| Self-Emulsifying, Bio-based Lubricant | Ollinger, C | Tribology & Lubrication Technology Vol 60, Part 2 | 2004 |

| | | | | |
|-----------------|---|---|---|------|
| Sorbents | Characterization of a starch based desiccant wheel dehumidifier | Beery, K.E. | Purdue University | 2000 |
| | The fate of atrazine and chlorpyrifos in a biobased pesticide waste disposal system | Judge, D.N. | Virginia Polytechnic Institute and State University | 1996 |
| | Sorption behavior of nonpolar organic chemicals on natural sorbents | Xia, G. | Johns Hopkins University | 1999 |
| | Simultaneous Sorption of Ethanol and Water by Starch and Corn (Packed Bed) | Crawshaw, J.P. | University of Nottingham | 1990 |
| | Optimization of pressure-flow limits, strength, intraparticle transport and dynamic capacity by hydrogel solids content and bead size in cellulose immunosorbents | Glasser, W.G., J. Kaster, W. de Oliveira, and W.H. Velander | Virginia Polytechnic Institute and State University | 1993 |
| | Chromatographic and Electrokinetic Separations of Proteins, Polypeptides, and Amino Acids | Ladisch, M.R. and A. Velayudhan | Purdue University | 1993 |
| | Adsorption of Water from Liquid-Phase Ethanol-Water Mixtures Using Starch-Based Adsorbents | Beery, K.E. and M.R. Ladisch | Purdue University | 2001 |
| | Synthesis and Optimization of a New Starch Based Adsorbent for Dehumidification of Air in a Pressure Swing Drier | Anderson, L., M. Gulati, P. Westgate, E. Kvam, K. Bowman, and M. R. Ladisch | Purdue University | 1996 |
| | Sorption of Organics and Water on Starch | Westgate P., and M.R. Ladisch | Purdue University | 1993 |
| | Water and Ethanol Sorption Phenomena on Starch | Lee, J. Y., P. J. Westgate, and M. R. Ladisch | Purdue University | 1991 |
| | Design, synthesis and characterization of biobased polysaccharide sorbents | Ladisch, M.R., P. Westgate, and E. Kvam | Purdue University | 1993 |
| | Thermodynamics of moisture sorption in alfalfa pellets | Fasina, O.O., S. Sokhansanj, and R.B. Tyler | University of British Columbia | 1996 |