

CURRICULUM VITAE

Joongmin Shin, Ph.D.
Industrial Technology and Packaging
05-315 Orfalea College of Business
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Education

- Ph.D. 2007 Packaging science, Michigan State University
- M.S. 2003 Packaging science, Michigan State University
- B.S. 1993 Food science, Woosuk University, South Korea

Dissertation

- Evaluation of the effect of chlorine dioxide and allyl-isothiocyanate on the growth of Salmonella Typhimurium and Listeria monocytogenes on fresh chicken breast and effect of chlorine dioxide exposure on the physical properties of plastic films. July 2007, Drs. Susan Selke & Bruce Harte

Fields of Interests

Expertise includes;

- Modified atmosphere packaging system
- Antimicrobial packaging material (encapsulation and polymer grafting technologies)
- Electrospinning fiber system to control odor
- Food product/package compatibility and interaction
- Material applications in packaging and properties of packaging

Work Experience

- Associate Professor (Sep 2017- Current), Industrial Technology and Packaging, Orfalea College of Business, Cal Poly State University
- Associate Professor (Aug 2015- Aug 2017), Engineering and Technology, College of Engineering, Technology & Mathematics, University of Wisconsin-Stout
- Assistant Professor (Aug 2010- Jun 2015), Engineering and Technology, College of Engineering, Technology & Mathematics, University of Wisconsin-Stout
- Pilot plant manager (Sep 2008- Aug 2010), Food Science, Louisiana State University
- Post-doctor research associate (July 2007- Aug 2008), School of Packaging, Michigan State University
- Associate Researcher (May. 2003-Jan. 2008), E.Saeng, Ltd., Seoul, South Korea

- Research Assistant (Aug. 2004 – Dec. 2006), School of Packaging, Michigan State University

Refereed Publication or Other Creative Achievement

Journal

- Gaikwad, K.K, Singh, S., Shin, J.M., Lee, Y.S., 2019, Novel polyisoprene based UV-activated oxygen scavenging films and their applications in packaging of beef jerky, Journal of Food Engineering, 2019, In submission
- Kathuria, A., Buntinx, M., Shin, J.M., Harding, T., 2019, Inclusion of ethanol in a nano-porous, bio-based metal organic framework, Journal of Inclusion Phenomena and Macroscopic Chemistry, <https://doi.org/10.1007/s10847-019-00920-y>.
- Shin, J.M., Kathuria, A., Lee, Y.S., 2019, Effect of hydrophilic and hydrophobic cyclodextrins on the release of encapsulated allyl isothiocyanate (AITC) and their potential application for plastic film extrusion, Journal of Applied Polymer, 136, 48137.
- Shin, J.M., Solval, K.M., Xiang, B., 2019, Combined effects of calcium ascorbate treatment and modified atmosphere packaging to improve quality retention of fresh-cut cantaloupes, Journal of Applied Packaging Science, 11, 70-87.
- Shin, J.M., Lee, E.J., Ahn, Dong, 2018, Electrospinning of Tri-acetyl Cyclodextrin (TACD) Functionalized Low-Density Polyethylene Nanofibers to Minimize Off-Odor Volatile Compounds from irradiated meat, Food Packaging and Shelf Life, 18, 107-114.
- Shin, J.M., Xiaojing L., Chikthimmah, N., Lee, Y.S., 2016, Polymer Surface Modification Using UV treatment for Attachment of Natamycin and the Potential Applications for Conventional Food Cling Wrap (LDPE), Applied Surface Science, 386, 276-284.
- Shin, Y.J., Shin, J.M., Lee, Y.S, 2011, Preparation and characterization of multilayer film incorporating oxygen scavenger, Macromolecular Research, 19(9), 869-875
- Shin, J.M., Lee, Y.S., Harte, B., Selke, S., 2011, The effect of controlled chlorine dioxide (ClO₂) release system in combination with modified atmosphere packaging (MAP) to control the growth of pathogens, Journal of food quality, 34(3), 220-228.
- Vazquez, H.O., Shin, J.M., Soto-Valdez, H., Auras, R., 2011, Release of Butylated Hydroxytoluene (BHT) from Poly(lactic acid) films, Polymer Testing, 30(5), 463-471.
- Shin, J.M., Harte, B., Harte, J., Kirk, D., 2011, The effect of low-dose X-ray irradiation on the quality of fresh-cut asparagus in microwavable vacuum skin packs, HortScience, 46 (1), 1-6.
- Lee, YS, Chung, D.S, Harte, B., Shin, J.M., 2010, Effect of 1-Methylcyclopropene (1-MCP) treatment on the quality characteristics and pigmentation of tomato fruit (*Lycopersicon Esculentum* Mill.), Korean Journal of Horticulture Science & Technology, 28(4), 600-608.
- Shin, J.M., Harte, B, Ryser, E, and Selke, S, 2010, Active Packaging of Fresh Chicken Breast, with Allyl Isothiocyanate (AITC) in Combination with Modified Atmosphere

- Packaging (MAP) to Control the Growth of Pathogens, *Journal of Food Science*, 75(2), M65-M71.
- Shin YJ, Shin J.M., Lee Y.S., 2009, Effect of oxygen scavenging package on the quality changes of processed meatball product, *Food science, and biotechnology*, 18(1), 73-78.
 - Choi, S.G., Shin, J.M., 2006, the analysis of cushioning properties of corrugated cushion, *Journal of Korea Society of Packaging Science and Technology* 12:1 35-40.
 - Lee, M.H., and al. (Shin, J.M.), *Korean packaging science of technology encyclopedia*, Korea Society of Packaging Science & Technology, Seoul, Korea, 2003.

Conference Proceedings

- Pauwels, A.K., Buntinx, M., Harding, T., Shin, J.M., Kathuria, A., Encapsulation of ethanol in cyclodextrin and bio-based cyclodextrin metal-organic framework for active packaging, IAPRI world packaging conference, Netherland, June 11-14, 2019.
- Shin, J.M., Eun Joo Lee, Dong Ahn, Development, Optimization, and Characterization of Electrospun Lo-Density Polyethylene (LDPE) Nano Fibers Containing Triacetyl- β -cyclodextrin (TACD), Institute of Food Technologists (IFT) annual conference, Las Vegas, NV, July 25 - 28, 2017.
- Shin, J.M., Anne Wesptal, Allyl isothiocyanate (AITC) by Triacetylene β -cyclodextrin (TACD) and Its Potential Application in Polymer Extrusion Process for the Food Packaging, Institute of Food Technologists (IFT) annual conference, Chicago, IL, July 16 - 19, 2016.
- Lee, Eun, Shin, J.M., Ann, Dong Uk, Reduction of sulfur compounds using tri-acetyl β -cyclodextrin (TACD)-impregnated packaging materials, Institute of Food Technologists (IFT) annual conference, Chicago, IL, July 16 - 19, 2016.
- Shin, J.M., Liu, X., Chikthimmah, N., 2015, Development of Natamycin Attached Functional LDPE Polymers and Efficacy Against *Penicillium* and *Saccharomyces* Microbial Genera, Institute of Food Technologists (IFT) annual conference, Chicago, IL, July 12-5, 2015.
- D. Pokhrel, N. Chikthimmah, K. Chinnadurai, C. Rohrer, Shin, J.M., 2014, Effect of Mustard Powder on the Survival of *Salmonella enterica* and *Penicillium chrysogenum* in Shredded Mozzarella Cheese, Institute of Food Technologists (IFT) annual conference, Chicago, IL, June 21-24, 2014.
- Drager, K, Karunanithy, C., Shin, J.M., Lee, E.J., 2014, Shelf life evaluation of a new packaging container for breakfast cereal, Institute of Food Technologists (IFT) annual conference, Chicago, IL, June 21-24, 2014.
- Shin, J.M., Chikthimmah, N., 2013, Polymer surface modification for the attachment of antimicrobial compounds (Natamycin) using UV treatment, Institute of Food Technologists (IFT) annual conference, Chicago, IL, July 20-23, 2013.
- Shin, J.M., Mokwena, K., 2012, The potential of tri-acetyl- β -cyclodextrin and its inclusion complex with AITC for LDPE film extrusion, IAPRI world packaging conference, St. Louis Obispo, CA, June 18-22.
- Shin, J.M., Dao Yang, Kereilemang Mokwena, 2011, Encapsulation of Allyl-isothiocyanate (AITC) into LDPE film using β -cyclodextrin and its potential application in food packaging, IFT Annual Conference, New Orleans, LA, June 11-15, 2011.

- Shin, J.M., Kevin Mis Solval, Bob Xiang, 2011, The use of vitamin and mineral mixture treatment and modified atmosphere packaging to improve quality retention of fresh-cut cantaloupes, IFT Annual Conference, New Orleans, LA, June 11-15, 2011.
- S. Sathivel, B. Xiang, S. Joongmin, D. Skonberg, 2009, Evaluation of freezing rate and quality of channel catfish (*Ictalurus punctatus*) fillets using cryogenic and blast freezers, IFT Annual Conference, Anaheim, CA, June 6-9, 2009.
- S.Sathivel, J. Pu, Y. Wan, L. Cook, H. Yin, B. Xiang, S. Joongmin, D. Skonberg, 2009, Glazing frozen shrimp with an emulsion containing astaxanthin, IFT Annual Conference, Anaheim, CA, June 6-9, 2009.
- Shin, J.M., Savage, J., Harte, J., Dolan, K., Harte, B., Performance Comparison of Modified Atmosphere Packaging (MAP) and Vacuum Skin Packaging (VSP) in maintaining the quality of fresh Michigan green asparagus, IAPRI world conference on packaging, Bangkok, Thailand, June 8-12, 2008.
- Shin, J.M., Harte, J., Dolan, K., Harte, B., The effect of x-ray irradiation on the quality of fresh-cut asparagus, IAPRI world conference on packaging, Bangkok, Thailand, June 8-12, 2008.
- Bhisanbut, A., Shin, J.M., Harte, J., Fulbright, D., Dolan, K., Harte, B., The extension of chestnut product quality using Modified Atmosphere Packaging and Vacuum Skin Packaging, IAPRI world conference on packaging, Bangkok, Thailand, June 8-12, 2008.
- Shin, J.M., Harte, B., Selke, S., Ryser, E., Evaluation of the microbial inhibition performance of gas type antimicrobials (chlorine dioxide and allyl-isothiocyanate) with Modified Atmosphere Packaging (MAP), IAPRI world conference on packaging, Tokyo, Japan, October 3-6, 2006.
- Shin, J.M., Harte, B., Selke, S., Ryser, E., The effect of chlorine dioxide exposure on the physical properties of plastic films, NSF Barrier Development Center Meeting, Kalamazoo, MI, October 12-14, 2006.
- Shin, Y.J., Selke, S., Harte, B., Shin, J.M., Development of active packaging; application of oxygen scavenger, Korean Society of Food Science & Technology Annual Meeting, Korea, June 24-26, 2004.

Chapters

- Shin, J.M., Selke, S., 2014, Food packaging, In Food processing principles and applications 2nd edition, Clark et al. (Editor), Wiley-Blackwell Blackwell Publishing, Ames, IA, p 249-273.

Honors, Grants, and Fellowship

Funded Grants

- Novel polyisoprene based UV-activated oxygen scavenging films and their applications in packaging of beef jerky, Joongmin Shin (PI), Orfalea Mini Summer Grant, 2019, \$3,500
- Immobilization of bioactive agents on packaging film for enhancing microbial safety and extending the shelf life of fresh cheese, Joongmin Shin (P.I), Marie Yeung (Co-PI), Agricultural Research Institute (ARI) grant, 2019-2020, \$23,442.

- Develop Capacity in the Application of Nanotechnology in Active and Intelligent Food Packaging to Enhance Experiential Learning in Food Safety, Lamin S. Kassama (PI), Martha Verghese, Alak Bandyopadhyay, Florence Okafor, Linshu Liu, Joongmin Shin (CO-PI), USDA 1890 Institution Teaching, Research and Extension Capacity Building Grants (CBG), 2019-2021, \$562,781
- Ally-isothiocyanate/ triacetyl- β -cyclodextrin inclusion complex for low-density polyethylene film extrusion, Joongmin Shin (PI) and Ajay Kathuria (PI), Orfalea Mini Summer Grant, 2018, \$3,000
- Surface Modification and Antimicrobial Activity of Shrink-Wrap/Cling-Wrap Grafted with Natamycin and Chitosan for Cheese, Agricultural Research Institute (ARI) grant, 2018-2019, \$18,341.
- Development of High-Performance Paper-based Packaging Material Using Nano-fibrillated Cellulose Fibers, Research, Scholarship, and Creative Activity (RSCA) grant, Shin, J.M. (PI), 2018-2019, \$17,800.
- Development of Non-Migratory Active Cling Wrap Packaging for Enhanced Food Safety and Quality, Wisconsin Joint Applied Research-WiSys Technology Advancement Grant, Shin, J.M (PI), N. Chikthimmah (Co-PI), 2014-2015, \$50,000.
- Development of antimicrobial vacuum pouches using UV treatment, UW-Stout Research incubation fund, Shin, J.M (PI), N. Chikthimmah (Co-PI), 2011-2012, \$9,892
- Laboratory and Classroom Modernization Request fund, Shin, J.M (PI), 2011-2012, \$39,428.
- Polymer surface modification for the attachment of antimicrobial compounds (Natamycin) using UV treatment, and its potential application for cheese products, UW system Wysis reassignment fund, Shin, J.M (PI), N. Chikthimma (Co-PI), 2011-2012, \$3,500.
- Development of safe, convenient, and frozen oyster products for the frozen ready-meal market segment, Louisiana Sea Grant, S. Sathivel (PI), B. Ge (Co-PI), D. Bankston (Co-PI), J. Supan, (Investigator), and Shin, J.M (Investigator), 2010-2012, \$140,548.
- Development of safe and ready-to-eat frozen oyster products, Louisiana Board of Regents (BOR), Industrial Ties Research Subprogram (ITRS), S. Sathivel and B. Ge (Co-PIs), J. King, J. Finley (Investigators), and Shin, J.M (Investigator), 2009-2011, \$117,800.

Other Research and Other Creative Achievements

Patent

- Shin, J.M., Antifungal Grafted Polyolefin, Reference No. T160012US (2/25/2016)

Governance and Other Professionally Related Service

Departmental Service

- Faculty search committee (Food and Nutrition) 2016
- Faculty search committee (packaging) 2015
- Faculty search committee chair (packaging) 2013.
- Program course revision committee 2012-2013.

- Graduate student advisor in both engineering and technology and & food and nutrition department: 2010-2014

University service

- Global seminar coordinator (with Korean Institute of Industrial Technology) at UW-Stout.
- Graduate education committee 2014-2017.
- UW-Stout journal reviewer 2013-2014.
- Curriculum committee alternative 2012-2013.
- UW-Stout faculty initiative grants reviewer 2011.

Professional Service

- Journal referee/reviewer for 10 peer-reviewed journals (More than 65 papers).
 - Journal of Food Science
 - International Journal of Food Science and Technology
 - LWT - Food Science and Technology
 - Journal of food engineering
 - Journal of plastic film and sheet
 - Packaging technology and science
 - Hortscience
 - Journal of Crystal Growth
 - Progress in Organic Coating
 - Journal of Applied Packaging Research
- IFT Student poster competition referees 2013.
- IFT annual conference technical session abstract reviewer 2010-Current.
- UW-Stout representative in Flexible Packaging Association (FPA) 2010-Current.
- UW-Stout representative in International Association of Packaging Research Institutes (IAPRI) 2011-Current.

Memberships in Professional Societies

- Professional Member, Institute of Food Technologist (IFT), 2003-current.
- Professional Member, Institute of Packaging Professionals (IOPP), 2006 – current.
- Member, International Association of Packaging Research Institute (IAPRI), 2011-current.
- Member, American Society for Horticultural Science (ASHS), 2009-2013

Other Teaching, Mentoring, and Curricular Achievements

Work highlighted in media

- Curran, Bridget, Sep 2014, WQOW News 18, Two UW-Stout professors invent cling wrap that prevents spoiled food
(<http://www.wqow.com/story/26571795/2014/09/18/two-uw-stout-professors-change-elements-of-cling-wrap>)
- ASHS Press Release, Nov 2011, Asparagus Benefits from X-ray Treatment
(http://www2.ashs.org/pressrelease/index.php?option=com_content&view=article&id=1183:asparagus-benefits-from-x-ray-treatment&catid=1:hortsience&Itemid=3)

Education Courses Taught

- University of Wisconsin-Stout PKG 100 Packaging Society
- University of Wisconsin-Stout PKG 150 Packaging fundamental
- University of Wisconsin-Stout PKG 220 Packaging materials; polymer and glass
- University of Wisconsin-Stout PKG 250 Consumer Packaging
- University of Wisconsin-Stout PKG 350 Packaging Design and Evaluation
- University of Wisconsin-Stout PKG 385 Medical Packaging
- University of Wisconsin-Stout PKG 450 Food packaging laboratory
- University of Wisconsin-Stout PKG 495 Packaging Seminar
- University of Wisconsin-Stout PKG 499 Independent Study
- University of Wisconsin-Stout MFGE 735 Field Problem in Manufacture Engineering
- University of Wisconsin-Stout FN 735 Problems in Food Science and Nutrition
- Louisiana State University FDSC 7020 Food Packaging