###### Juming Tang, Ph.D., Frank Jungers Endowed Chair

*Member, US National Academy of Engineering*

Chair, Department of Industrial & Systems Engineering

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**EMPLOYMENT**

2024.10- Chair, Department of Industrial and Systems Engineering, University of Washington, Seattle, WA.

2014-2024 Regents Professor, Department of Biological Systems Engineering, Washington State University, Pullman, WA.

2016-2020 Chair, Department of Biological Systems Engineering, Washington State University, Pullman, WA.

2012-2024 Distinguished Chair of Food Engineering, Department of Biological Systems Engineering, Washington State University, Pullman, WA.

2003-2024 Professor, Food Engineering, Department of Biological Systems Engineering, Washington State University, Pullman, WA.

2000-03 Associate Professor, Food Engineering, Department of Biological Systems Engineering, Washington State University, Pullman, WA.

1995-00 Assistant Professor, Food Engineering, Department of Biological Systems Engineering, Washington State University, Pullman, WA.

1994-95 Assistant Professor, Food and Biomaterial Engineering, Department of Agricultural and Biological Engineering, South Dakota State University, Brookings, SD.

1991-94 Assistant Professor of Food Engineering, Department of Food Science and Technology, Acadia University, Wolfville, NS, Canada.

**EDUCATION**

1987-91 Ph.D., Agricultural/Food Engineering, University of Saskatchewan, Saskatoon, SK, Canada.

1985-87 M.S., Agricultural/Food Engineering, University of Guelph, Guelph, ON, Canada.

1978-82 B.S., Mechanical Engineering, Central South China University, Hunan, China.

**LEADERSHIP IN RESEARCH**

2016-2021 Director of USDA AFRI Center of Excellence for Food Safety Using Microwave Energy ($4M from USDA NIFA CAPs Program).

2011-2015 Principal Investigator of $5M, 5-year project supported by USDA NIFA “Control of food-borne bacterial and viral pathogens using microwave technologies” for frozen and refrigerated meals. The team consists of scientists from WSU, University of Tennessee, North Carolina State University, US Army Natick Soldier Center, USDA ARS Eastern Regional Center, companies/trade organizations (<http://microwavepasteurization.wsu.edu/>).

2001-2010 Director of Microwave Sterilization Consortium. Consortium members included WSU, Nestle, Pepsi-Cole, General Mills, Hormel, Bush Brothers, Print-Pack, Rexam Containers, Del Monte, Ocean Beauty Seafood, AmeriQual, and Wornick Foods (current budget: ~$0.6 M/year - fees collected from consortium members) (http://microwaveheating.wsu.edu/). Developed and patented a single-mode 915 MHz microwave sterilization technology for military and civilian uses; received FDA acceptance of a process for a homogenous food: mashed potato in trays on Oct. 07, 2009 - first ever in USA for industrial microwave sterilization process; received FDA acceptance of our second process (for a non-homogenous food: salmon fillets in pouches) on Dec. 15, 2010. The outcomes of the research established scientific, engineering, and regulatory foundation for commercial application of this new technology.

2000-2008 Washington State University IMPACT Research Fellow of Food Processing Technology – one of three IMPACT fellows.

**MAJOR RESEARCH IMPACTS**

1. Developed and patented 915 MHz Single-Mode Microwave Thermal Sterilization (MATSTM) Technologies (for shelf-stable foods) and Microwave Assisted Thermal Pasteurization Systems (MAPSTM) for chilled ready-to-eat meals, received acceptance from FDA and USDA FSIS, licensed to 915 Labs (a company of TATA Group) for global commercialization. The research created long-term collaborations with US Army Natick Soldier Center, NASA Food Laboratory, and trained scientists from 50 food processing, equipment and packaging companies, research institutions and regulatory agencies worldwide. Batch pilot scale systems of MATS are installed in USA (Campbell Soup, AmeriGual Foods, and Wornick), Australia (Defence Food Lab), South Korea, and India for R&D activities. Commercial continuous microwave systems of different capacities (e.g., 30, 42, and 50 meals per min) are installed in India and Singapore for commercial production. 915 Labs is designing much larger capacities for companies in USA and Australia.
2. Pioneered research on thermal control of food pathogens in low moisture foods, established scientific foundation for food companies to develop effective thermal processes to ensure food safety of ready-to-eat low moisture foods.
3. Pioneered research and established scientific foundation for industrial application of thermal treatments as post-harvest control of pests in low moisture commodities, developed and validated treatment protocols in food plants, leading to industrial applications.
4. Pioneered research on radio frequency (RF) heating, leading to global research on use of RF energy for a wide range of food and agricultural applications including drying, pathogen control, pest control, and thawing. In particular, WSU former students and visiting professors established 10 research laboratories on RF heating (2 in USA, 1 in Mexico, 7 in China/Taiwan).

**ACHEIEVMENTS/AWARDS/HONORS**

2024- **Frank Jungers Endowed Chair**, University of Washington

2023 **Highly Cited Researcher** (1 in 1000), among 7,125 worldwide selected by Clarivate.

2022- **Fellow,** The International Academy of Agricultural and Biosystems Engineering

2021- **Fellow**, US National Academy of Inventors

2021- **Member, US National Academy of Engineering,** elected for “invention and commercialization of electromagnetic spectrum wave-based food processes”

2021 **Technology with Impactful Contribution to Society Award**, WSU

2019- **Member,** Washington State Academy of Sciences

 **Life Time Achievement Award,** International Association for Engineering and Food

2018 **President’s Distinguished Award for** **Innovation and Entrepreneurship,** Washington State University (the inaugural recipient)

 **IFT Tannar Award** - for the Most-Cited Paper of 2015 published in the Food Engineering and Materials Science Section of Journal of Food Science -- *Unlocking Potentials of Microwaves for Food Safety and Quality*

2017 **Professional Achievement Award** – for Advancing Food Science and Technologies, Chinese American Food Society.

 **Distinguished Career Award,** Oversea Chinese Society of Agricultural, Biological Systems and Food Engineers.

2014- **Fellow**, Institute of Food Technologists.

**Fellow**, American Society of Agricultural and Biological Engineers.

**Freezing Research Award,** International Association for Food Protection/Frozen Food Foundation.

2013- **Fellow,** International Microwave Power Institute.

Assist Ameriqual Foods Receiving **FDA Acceptance** of one process based on MATS (March)

2012 **International Food Engineering Award**, American Society of Agricultural and Biological Engineers & Nestle, “for breakthrough engineering design and development of microwave/radio frequency thermal processing technologies, and outstanding leadership and education of food engineering professionals”.

 **G. Malcolm Trout Visiting Scholar**, Michigan State University.

 **Letter of No-objection from USDA FSIS** for microwave sterilization of packaged low acid foods containing more than 2% of poultry, egg and meat ingredients.

2010 **FDA Acceptance of Microwave Sterilization Process** for Packed Salmon Fillets in Pouch (12-15-2010) filed by my laboratory - the first FDA accepted filing for microwave sterilization of packaged low acid **non-homogeneous** foods in USA.

2010 **IFT Research and Development Award**, “for Development of FDA Accepted Microwave Sterilization Process”.

2009 **FDA Acceptance of Microwave Sterilization Process** for Packaged Mashed Potato (10-07-09) filed by my laboratory – the **first ever** for microwave sterilization of packaged low acid foods in USA. Only three new food processing technologies received FDA approval over the past 20 years in USA.

2008 **Anjan Bose Outstanding Researcher Award**, College of Engineering and Architecture, WSU (the highest research honor the college can bestow).

2005 **Distinguished Food Engineering Professor**, Southern Yangtze University (SYU), Wuxi, China (SYU selects only one outstanding food engineer worldwide per year to visit and lecture at SYU for one month).

2005 **Graduate and Professional Student Outstanding Advisor Award** (one of two awardees at WSU in 2005), Washington State University Graduate and Professional Student Association.

2004 **ASAE Superior Paper Award**.

2004 **NASA Faculty Fellow**, Advanced Food Technology Program, Johnson Space Center, Houston, TX – selected to work on package and processing solutions for long-duration manned space missions.

2004 **Outstanding Research Faculty**, Department of Biological Systems Engineering, WSU.

2003 **USDA Secretary’s Honor Group Award** for increasing the efficiency, security, sustainability, and profitability of the fruit and vegetable industry through applications of the technologies developed.

2002 **Award for Excellence**, Northeastern Regional Association of State Agricultural Experimental Station Directors.

2002 **Faculty Excellence in Research Award**, College of Agriculture and Home Economics, WSU.(1 out of 350 faculty members).

1. **ASAE Superior Paper Award** (<2.5% of published papers in the Trans. of the American Society of Agricultural Engineers and Applied Agric. Engineering in 2000).

1994 **IFT George F. Stewart International Research Paper Competition Award** (1st place).

**TEACHING AND GRADUATE STUDENT EDUCATION**

Major advisor of 50 Ph.D. students (46 graduated), 3 M.S. students, over 50 post-doctoral research associates and visiting professors. Graduate students in my group have received 4 awards at national conferences, 15 regional awards, and two university awards over the past 8 years for their research activities or in paper competition.

Taught the following courses at WSU: BsysE Professional Development (BsysE 215), Introduction to Food Engineering Labs (AgTM/FSHN 434), Food Plant Design (BsysE 487/587), Thermal Processing (BsysE584), Advanced Physical Properties of Foods (30-45% of BsysE 581), and Senior Project Design (75% of BsysE 311). Advisor of certified undergraduate students in food engineering track (1995-2002).

Taught Food Engineering I&II, Food Processing Technologies in the Department of Food Science and Technology, Acadia University (Canada).

**GRANTS AND CONTRACTS**

Awarded over $30 million as **PI** and $18 million as CO-PI, including one grant (in 2001 for microwave sterilization) from Department of Defense (DoD) Dual Use Scientific and Technology (DUST) Program (only three ever awarded for food related projects, the other two DUST projects were for PEF in 1999 and HHP in 2000), eight contracts from US Army Natick Soldier Center/COARENT, five grants from USDA National Research Initiative Competitive Grant Program (NRICGP), a $5M grant from USDA NIFA, a $4M Center of Excellence grant from USDA NIFA, a $1.2 M grant from USDA President’s Initiative for Future Agriculture and Food Systems (IFAFS) program, three USDA National Needs grants, one BARD grant, one DoE grant, and National Science and Engineering Research Council Foundation and Equipment grants (Canada).

***Listed below are grant awards for the past 18 years, as PI:***

*2024* **Tang, J.,** Sablani. S., Ph.D. Fellowships, NACA Agreement. USDA ARS Western Regional Center ($386,762, 2024-2027).

2023 **Tang, J.,** Pedrow P., Exploring the Application of Solid-State 915-MHz Microwave (MW) Generators for Commercial Production of Ready-to-Eat Meals, USDA AFRI ($600,000, 2023-2027).

 Contract projects for Pfizer, Kraft, and other companies ($200,000)

2021 **Tang,** J., *Optimizing Human Health and Nutrition: From Soil to Society*, USDA AFRI SAS Program, led by Mulphy, K., WSU ($491,000, part of $10M, 2022-2027).

**Tang, J.,** Humid hot Air Pasteurization Processes for Spice & Herbs-Phase II. McCormick& Company ($130,000, 2022-2023).

2020 ($1,053,059) **Tang, J.** Preheating of Biomass Using RF Energy. DoE through Forest Concept, Inc. ($116,621, 2020-2021).

 **Tang, J.,** Humid hot Air Pasteurization Processes for Spice & Herbs. McCormick& Company ($180,438, 2020-2022).

**Tang, J.,** Multiscale mathematical modeling based design- the next generation of microwave-assisted frying technology, USDA AFRI, subcontract from UIUC, led by Takhar, P.S. ($220,000, 2020-2024).

**Tang,** J Sustainable, Systems-Based Solutions for Ensuring Low-Moisture Food Safety, USDA AFRI SAS Program, led by Bradley Marks, Michigan State University ($483,000, part of $9.8M, 2021-2026).

 **Tang, J., Sablani, S.** Special test agreement for MAPS, Gadre Marine Export PVT, LTD. ($53,000).

2019 ($100,760) Tang, J., Initiating Collaboration with WSU Medical School, from WSU Office of Vice President for Research ($40,000).

 Tang, J., Enhancing productivity and safety of Oregon hazelnuts through technology innovation. Specialty Crop Block Program ($20,760).

 Contracts with companies for MATS and MAPS testing ($40,000)

2018 ($260,000) **Tang, J.,** Validating 4 MATS processes for NASA Space Program ($150,000), Industrial Contracts ($110,000)

2017 ($200,000) **Tang, J.** Industrial Contracts ($200,000)

2016 ($4,200,000) **Tang, J.** Industrial Contract Work ($200,000)

**Tang, J.** et al. Center of Excellence for Advanced Microwave Processing Technologies for Food Safety. USDA NIFA CAPs Program ($4,000,000, 2016-**2021,** Grant#2016-68003-24840).

2015 ($600,000) **Tang, J.** Contracts with food companies.

2014 ($1,288,000) **Tang, J.** Zhu, M. 2014**-**2019. Enhancing Low-Moisture Food Safety by Improving Development and Implementation of Pasteurization Technologies, USDA NIFA CAP program ($5M, led by Bradley Marks, Michigan State University, WSU $ 935,018, 2014-**2021, 2015-68003-23415**).

 **Tang, J.,** Sterilization of packaged foods using MATS ($320,000), Food Companies F, C, W, A.

 **Tang, J.,** Zhu, M., Sablani,S., Ganjyal, G., Shah, D. Understanding of food and microbiological properties at elevated temperatures to improve low-moisture food safety, WSU Agricultural Research Center ($33,000).

2013 ($279,343) **Tang, J.,** Sterilization of packaged foods using MATS ($180,000), Food Company.

 **Tang, J.**, Pasteurization of packaged foods using microwave energy (MAP) ($50,000), Food Company.

 **Tang, J.,** Zhu, M., Sablani,S., Ganjyal, G., Shah, D. Understanding of food and microbiological properties at elevated temperatures to improve low-moisture food safety. WSU Agricultural Research Center ($49,343).

2012 (807,486) **Tang, J.,** Rob Penney**,** Determining and improving the energy efficiency of microwave sterilization & pasteurization technologies. Bonneville Power Administration, DoE, 2012-2015 ($643,000).

**Tang, J**., Wang S. 2012-2015. Factors affecting pasteurization efficacy for Salmonella inlow-moisture foods, USDA NIFA, as part of a project for Marks, B. (Michigan State U.), Tang, J., Ryser, E., Wang, S., Jeong, S. (total $496,514; WSU $164,486).

2011 (5,419,869) **Tang, J.,** Davidson, P. M., Rasco, B., Sablani, S., D'Souza, D., Dunne, P., Yang, T., Huang, L., Gray, D. O. Control of food-borne bacterial and viral pathogens using microwave technologies, USDA National Institute of Food and Agriculture (NIFA Grant number #2011-68003-20096) ($5,000,000, 2011-2016).

 **Tang, J**., Sablani, S., Barbosa-Canovas, G.V., Davis, D. Educating food engineers to develop high-performance integrated processing and packaging technologies that enhance food safety and quality. *2012-2016.* USDA NIFA National Needs Graduate and Postgraduate Fellowships Program ($238,500).

 **Tang, J**., Wang S. 2012-2015. Improving Process Validation Methods for Multiple Pasteurization Technologies Applied to Low-Moisture foods. USDA NIFA, as part of a project for Marks, B. (Michigan State U.), **Tang, J**., Ryser, E., Wang, S., Jeong, S. (total $542,824; WSU $181,369).

2010 ($1,600,000) **Tang, J.** Microwave sterilization for packaged foods, DoD/Print-pack, Co. ($400,000).

 **Tang, J.** Microwave Consortium II membership fees from consortium members ($1,200,000, 2010-2012).

2009 ($465,555) **Tang, J.** Dry pea and lentil processing. USDA Cool Food Legume Program 2009-2010 ($35,555).

 Tang, J. Microwave sterilization technology–FDA approval. DoD ($430,000).

2008 ($991,344) **Tang, J.**, Sablani, S, Powers, J., Chow, B. Enhancing nutrition contents in value added processing of agricultural products. WSU ARC Emerging Issue Program ($63,000).

 **Tang, J.** Dry pea and lentil processing. Cool Food Legume Program ($38,455).

 **Tang, J.,** Kang, H, Wang, S. 2008 Abbot Laboratories, OH, RF control of food pathogens in infant formula ($57,000).

 Wang, S., **Tang, J**. Johnson, J. Non-chemical Postharvest Insect Control in Pulse Crops Using Radio Frequency Energy. USDA-Western Regional IPM Competitive Grants Program ($160,889).

 Tang, J. Microwave sterilization technology – FDA approval. DoD ($600,000).

 **Tang, J.** Quality influenced by emerging technologies, USDA NRI ($65,000, a part of a $750,000 project led by Sastry, S., Ohio State U.).

2007 ($998,423) **Tang, J.**, Sablani, S, Powers, J., Chow, B. Enhancing nutrition contents in value added processing of agricultural products. WSU ARC Emerging Issue Program ($63,000).

 **Tang, J.**, Patil, R. Value-added processes for potato. WA Potato Commission ($30,000).

 **Tang, J.**, Rasco, B., Clark, S., Pitts, M., Cavalieri, R, Yin, H. MW Sterilization, Department of Defense ($833,423).

 **Tang, J.**, Powers, J., 07. Processes to produce shelf-stable mushroom soups. WTC and company ($72,000).

2006($715,190) **Tang, J.**, Swanson, B., Patil, R. Value-added processes for lentils and dry peas, Cool Season Food Legume Research Program ($54,614).

 **Tang, J.**, Patil, R. Value-added processes for potato. WA Potato Commission ($27,576).

 **Tang, J. WSU** IMPACT Fellow Support ($20,000).

 **Tang, J.** Microwave Sterilization: Rexam Containers ($20,000), Masterfoods ($100,000), Kraft Foods ($150,000), US Army Natick Soldier Center ($250,000).

 **Tang, J.,** Nindo, C. Refractance Window Drying, USDA SBIR ($30,000).

 **Tang, J.**, Nindo, C., Powers.Strategies for Antioxidant Retention and Recovery of Pigments from Press Cake, WSU IMPACT Center ($30,000).

 **Tang, J.**, Patil, R., Swanson, BG., McCluskey, 2006-007. Consumer acceptability and nutraceutical benefits of legume-based extruded snacks and breakfast cereal-type products, WSU IMPACT Center ($33,000).

2005 ($1,328,532) **Tang, J.**, Rasco, B., Clark, S., Pitts, M., Cavalieri, R. Microwave (MW) Sterilization for MREs, US Army Natick Soldier Center ($272,401).

 **Tang, J.**, Nindo, C., Powers, J. Quality and shelf-life of reflectance window dried fruit, vegetable and herbal products, Washington Technology Center ($122,131).

 **Tang, J.,** Optimization of RF systems for shelf-stable group rations, US Army Natick Soldier Center ($175,000).

 **Tang, J.**, Wang, S. Improve quarantine treatments for tropic fruit using thermal energy, USDA NRI ($335,000).

 **Tang, J**. Advanced thermal processing technology for salmon, USDA Special Program through University of Alaska ($309,000).

 **Tang, J.,** Swanson, B., Patil, R. Value-added processes for lentils and dry peas, Cool Season Food Legume Research Program ($65,000).

 **Tang, J.,** Patil, R. Value-added processes for potato. WA Potato Commission ($30,000).

 Tang, J., WSU IMPACT Fellow Support ($30,000).

2004($1,227,726) **Tang, J.** Microwave Dual Use Project, DoD ($250,000).

 **Tang, J**., Wang, S. Radio frequency energy as an alternative to methyl bromide fumigation for controlling pests in stone fruits and nuts. USDA Methyl Bromide Transitions Program ($445,881).

 **Tang, J.**, Pitts, M., Kang, H.C., Clark, S. Optimization of RF Sterilization of Polymeric Trays, US ARMY Natick Soldier Center ($246,831).

 **Tang, J.,** Swanson, B., Cheng, M. Value-added processes for lentils and dry peas. Cool Season Food Legume Research Program ($66,964).

 **Tang, J.**, Powers, J., Swanson, B.G. Value-added processes for asparagus, USDA ($43,000).

 **Tang, J.**, Ben Li. Computer models for microwave/RF heating, WSU IMPACT Center ($30,050).

 **Tang, J.** WSU IMPACT Fellow Support ($30,000).

 **Tang, J.** Microwave Sterilization: MARS foods ($30,000), Hormel ($30,000), Rexam Containers ($20,000), Graphic Packaging, ($10,000), Ocean Beauty Seafoods ($25,000), Ferrite Component, Inc. ($43,000).

2003($1,050,696) **Tang, J.**, Barbosa-Canovas, G., Clark, S., and Kang D.H, 2003-05. Thermal stabilizing of shelf-stable egg products based on radio frequency energy technology. DoD ($248,505).

 **Tang, J.** Microwave Sterilization: Masterfoods ($60,000), Kraft ($50,000).

 **Tang, J.,** Clark, S., McCurdy, A., Kang, D.H. 2003-07. Safety of foods processed by four Alternative Processing Technologies, USDA CREES, ($250,082, as a part of $1.7 million grant led by Sastry S., Ohio State Univ.).

 **Tang, J.** Microwave Dual Use Project, US ARMY Natick Soldier Center ($258,191).

 **Tang, J.,** Pitts, M., Kang, H.C., Clark, S. Optimization of RF Sterilization of Polymeric Trays, US ARMY Natick Soldier Center ($223,233).

 **Tang, J.,** Ben Li. Computer models for microwave/RF heating, WSU IMPACT Center ($30,050).

 **Tang, J.,** Powers, J., Swanson, B. Value-added processes for asparagus, USDA ($47,000).

 **Tang, J.,** Berrios, J.D., Swanson, B. Value-added processes for dry peas and lentils, Cool Season Food Legume Research Center ($30,000).

 **Tang, J.** RF pest control for tropic fruits. Department of Agri., CA ($30,000).

 **Tang, J.** Equipment enhancement grant. US ARMY Natick Soldier Center ($50,000).

1997-2002As PI($4,200,000) and as Co-PI (1,052,000).

**INVITED/KEYNOTE / PLENARY SPEAKER/Webinars (past 17 years)**

2024. **RoundTable Panellist**, Scaling up industrial application of microwave powers-across the valleys of death. 5th Global Congress of Microwave Energy Applications (5GCMEA), Fukuoka, Japan, July 23-26.

2023 **Keynote Speech** (45 min to 600 audience) “Thermal Processing for Pathogen Control in Food Supply Chains, the 2023 International Symposium on Animal Diseases and Food Safety, Wuhan, China, Nov. 14.

 **Plenary Lecture** (45 min for over 500 audience) “Microbial Safety of Low Moisture Foods”, 11th Asia Pacific Drying Conference 2023, India, Feb. 18-19.

 **Panellist** (60 min) for WSU Research Leadership Program, January 25.

**Panellist** (60 min for over 35 faculty members) on Innovation Research and Commercialization, WSU Office of Research -Meeting with Faculty, October, 20.

2022 Plenary Speech (40 min) ”Microwave & RF Heating for Industrial Food Processing: Challenges and Opportunities” The 4th Global Congress on Microwave Energy Application. Organized by Chinese Association of Microwave Power Applications, in collaboration with International Microwave Power Institute, Japanese Association of Microwave Power Application and European Associations of Microwave Power Application, August 17-20.

 Gave webinar (1.5 hr) “Advanced Thermal Processing Technologies for Ready-to-eat Meals: MATS and MAPS” for companies in Hong Kong organized by Hong Kong Economic Development Office, March 23, 2022.

 Invited talk (30min) USDA AFRI Center of Excellence for Food Safety: Bridging Valley of Death. USDA NIFA SAS/CAPS Project Directors Meeting, April 18-20, Kansas City.

2021 Invited Talk to **US National Academy of Engineering, Section 12,** Addressing Challenges in Sustainable Food Systems: Novel Preservation Technologies for Food Supply Chains, June 16, 2021.

 4**-hr Booth (invited by USDA NIFA) at USDA** **Food Loss and Waste Innovation Fair (Virtual)**, Advancing Technology to Extend Shelf-Life and Control Pathogens for Ready-to-Eat Meals, May 28, 2021.

 https://events.labroots.com/event/USDAFoodLossandWasteInnovationFair/en-us#!/WSUHighQuality

 Webinar (1 hr) for **International Microwave Power Engineer (IMPI) Food Processing Webinar Series**, Control of Bacterial and Viral Pathogens Using Microwaves, April 29, 2021.

 2020 **Open Speech (45 min) at e-Latin Food 2020:** Advancing Food Safety Technologies for Ready-to-Eat Meals. Nov. 11. 2020.

 **Invited Talk (15 min) at 2020 Research and Development Association for Military Food and Packaging 2020 Virtual Fall Meeting:** Update on Microwave Assisted Sterilization and Pasteurization Technologies for Ready-to-Eat Meals, Nov. 18, 2020.

 **Webinar (45 min) for USDA FSIS: Control of Bacterial and Viral Pathogens Using Advancing Thermal Processing Technologies,** Oct, 7, 2020.

 **Keynote (35 min):** Principles of microwave heating and application in the food industry. Seventh Jinshan Food Physical Processing Conference, China, Sept. 19, 2020.

 **Invited lecture (120 min):** Agricultural Engineering Research and Graduate Education in USA. College of Engineering. China Agricultural Engineering, Sept. 20, 2020.

2019 **Invited Lecture (60 min**): Advanced Thermal Processing Technologies for Ready-to-Eat Meals. University of Tasmania, Australia, Sept 19, 2019.

 **Invited Lecture (60 min):** Advances in Thermal Processing Technologies for Safe Foods. Australia Defence Food Laboratory. Scottsdale, Australia., Sept.18, 2019. **Invited Lectures (45x3 min**): Sustainability in Food Systems, Food Dehydrations, Advanced Thermal Processing. International Symposium: Resilience in the Global Food System. Hokkaido University, Japan, May 6, 2019.

2018 **Keynote Speaker (60 min**): Advanced Thermal Processing Technologies for Ready-to-Eat Meals. International Symposium: Resilience in the Global Food System. Hokkaido University, Japan Oct.3-4, 2018.

 **Keynote Speaker (30 min):** Advances in Thermal Processing Technologies for Safe Foods.2018 International Forum on Food Science and Health, Changsha, China, Sept. 4-5.

2017 **Speaker for General Session** (30 min):Challenges and Opportunities in Developing and Applying Smart Technologies for the Food Industry. ASABE/IEEE SmartAg International Symposium Dec. 3-6, 2017, East Lansing, MI.

 **Speaker for General Session** (30 min): Advancing Food Safety Technologies to Meet Consumer Needs. International Forum on Food Technologies. Nov. 4-5th. YangLing, China (200 attendees).

 **Keynote Speaker** (60min). Theory and Application of RF Heating in Industrial Applications. Novel Drying Technologies Workshop, Taiwan, February 24 (180 attendees).

 **Guest lecture** (2 hr) on microwave heating principles and technology development to **Cornell** graduate students.

2016 **Invited Speaker**, 2016 International Conference on Food Safety Applications. September 29-30. Kaohsiung, Taiwan, Presentation title: Novel in-package thermal processing technologies based on microwave energy for food safety (40 min, 400 people).

 **Panel Speaker,** *Food Engineering Research – Opportunities and Challenges,* 2016 Conference of Food Engineering, September 12-14, Columbus, OH (120 people).

 **Invited Speaker,** IFTPS (Institute for Thermal Processing Specialists) Conference: Responsibilities of Processing Authorities in the Implementation of Alternative Processing Technologies. Presentation Title: Microwave Sterilization of Packaged Foods (60 min).

 **Invited Speaker,** 3rd Global Congress on Microwave Energy Applications. Presentation title: Bridging Gaps in Microwave Technologies for Industrial Production of Safe Foods. July 25-29, Cartagena, Spain. Member of Scientific Committee for the Congress, Chair of Technical Sessions.

 **Panel Speaker:** When microwave heating technologies become main stream operations in the food industry. 3rd Global Congress on Microwave Energy Applications. July 25-29, Cartagena, Spain.

 **Steering Committee and Presenter**: NSF Food-Energy-Water Nexus Workshop: Transformative Food Technologies to Enhance Sustainability. Feb 22-24. Lincoln, Nebraska.

2015 **Keynote Speaker (60 min**): Thermal Processing Technologies based on Microwave Energy. Kuraray Symposium for South America, Houston, TX, Nov. 19-20.

 **Invited Speaker** (45 min): Innovative Thermal Processing (Microwave, RF) to Control Pathogens and Spoilage Microorganisms, 10th International Conference for Food Safety and Quality, San Francisco, Nov. 10-12.

 **Invited Speaker:** A New Microwave Pasteurization Technology to Control Bacterial and Viral Pathogens in Packaged Foods. *Annual Conference of American Society of Agricultural and Biological Systems Engineers. New Orleans, July 27-29.*

 **Featured Speaker (30 min):** Control of food borne bacterial and Viral Pathogens Using Microwave Energy, USDA National Institute of Food and Agriculture Project Directors Conference, Portland, OR, July 24.

2014 **Keynote Speaker (45 min):** Microwave Assisted Pasteurization and Sterilization Technologies, 2nd Southeast Asia Technical Outreach Seminar, Bangkok, Thailand, Nov. 4-5

 **Invited Speaker (45 min):** A New Microwave Pasteurization Technology to Control Bacterial and Viral Pathogens in Packaged Foods. *Annual Conference of Institute for Thermal Processing Specialists*, Orlando, March 11-13

 **Invited Speaker (30 min):** A NovelPasteurization Technology for Packaged Foods. *Conference of Food Engineering*, Omaha, April 8-10.

2013 **Key Speaker (40 min**): Innovative Thermal Processes to Control Pathogens and Spoilage Microorganisms. *8th International Conference for Food Safety and Quality*, Las Vegas, Nov. 5-6.

 **Invited Speaker** (**45 min**): Microwave technologies for packaged foods- challenges and opportunities for packaging industry. Thin Wall Packaging Conference 2013. Cologne, Germany, Dec. 3-5.

 **Keynote Speaker (40 min):** Bridging Gaps between Academic Research and Food Industry in Microwave and RF Applications at opening of *International Microwave Power Annual Symposium*, Providence, RI, June 26/27.

 **Guest Lectures** on Microwave Heating Principles, Cornell University, March 2013.

2012 **Keynote Speaker (30 min)**: Microwave Sterilization Technology for Commercial Production of Safe Foods. *2nd Global Congress on Microwave Energy Applications*, Long Beach, CA July 25.

 **Panellist** for DOE Energy Session: Microwave and Radio Frequency as Enabling Technologies for Advanced Manufacturing. *2nd Global Congress on Microwave Energy Applications*, Long Beach, CA, July 25.

**Invited Speaker (35 min**): *Conference of Food Engineers*, April 2-4, Washington DC.Presentation Title: Microwave sterilization technology – a case study from technology development to commercialization.

 **G. Malcolm Trout Visiting Scholar Lecture**, Michigan State University, March 21,

Title: “Microwave Technology for Food Safety – The Path from Research to FDA Approval”.

2011 ***Invited Speaker (45 min)*:** *Institute for Thermal Processing Specialists (IFTPS) Third European Conference*, 4-5 Oct. 2011, Budapest, Hungary. Presentation Title: Microwave sterilization: a potential technology for production of safe and high quality food products*.*

 ***Keynote Speaker*** *(50 min):* Chinese Bio-resources Application Association Meeting, *Sept. 3, Taipei, Taiwan. Presentation Title: Microwave sterilization for packaged foods.*

2010 ***Keynote* *Speaker*** *(60 min)*: MREs, Military Rations and Packages R&D Annual Meeting, Lake Tahoe, 25 October 2010. *Presentation Title:* *Microwave sterilization, a potential technology for MREs.*

 ***Invited Speaker (****45 min****)*:** 2010 International Association of Refrigerated Warehouses (IARW) - [World Food Logistics Organization](http://iarw.org/wflo) (WFLO) Annual Convention & Expo, Westin Kierland Resort, Scottsdale, Arizona, April 24, 2010. *Presentation Title:* *Microwave energy for food safety.*

 ***Invited Speaker*** *(60 min)*: *International Forum for Future Agricultural Engineering Research and Education,* and atShanghai Ocean University (July 5, 2010); Zhejiang University (July 6, 2010); Yangling (July 9, 2010), China. Presentation Title: Microwave energy for food safety, Microwave/RF energy in food and agricultural processing applications*.*

2009 ***Keynote Speaker*** *(35 min)*: International Symposium on Safety Assessment of Food Products and Processing–Forefront of Food Safety Technology and 39th Annual Conference of Taiwan Association for Food Science Technology, Ilan City, Taiwan, 25-27 November 2009. *Presentation Title:* *Food safety issues related to microwave sterilization technology.*

 ***Plenary Speaker****:* Food Safety Summit, 27-29 April 2009 Washington, DC. *Presentation Title:* *Thermal Processing Using Microwave Energy: a possible fourth dimension for food safety and quality challenges*.

 ***Plenary Speaker*** *(30 min):* American Associate of Cereal Chemists (AACC) International Meeting, 13-16 2009, Baltimore, MD. *Presentation Title:* *Novel Thermal processing based on microwave and radio frequency energy for packaged foods.* A panel member in Symposium: Advances in Delivery of Food Nutrients - Tailoring Process Operations for Health and Wellness.

 ***Plenary Speaker*** *(45 min):* International Forum on Emerging Technologies in Food Processing, 13-16 *Sept. 2009, University of Illinois, Urbana-Champaign IL. Presentation Title: Microwave Heating Applications and Food Processing.*

2008***Plenary Speaker*** *(45min): 14th World Congress of Food Science and Technology, Shanghai, China,* 20-23 October 2008 Presentation Titles: 1) Hot Topics in Food Engineering- Microwave and Radio Frequency Sterilization, Plenary Symposium: Food Engineering: Past and Future Directions; and 2) Computer Simulation in Design of Microwave and Radio Frequency Systems. Food Processing Equipment – Computer Aided Design and Energy Saving Technologies.

 ***Anjan Bose Outstanding Researcher Award Lecture (40 min)***: College of Engineering and Architecture, WSU, 20 April 2008. *Presentation Title:* *Multi-disciplinary research in developing emerging food technologies.*

 ***Keynote Speaker*** *(45 min)*: 2008 *Global Congress on Microwave Energy Applications* - Global Perspective on Microwave Technology in 21st Century, Lake Biwa, Otsu, Japan, August 5-7, 2008. *Presentation Title:* US Development of Single-Mode 915 MHz Microwave Sterilization Technology for Packaged Foods**.**

 ***Plenary Speaker****:* IFT Symposium–Safety of Food Processed Using Four Alternative Processing Technologies, Part I: Thermal processing, IFT Annual Meeting, New Orleans, 29 June 2008. *Presentation Title:* In package microwave processing.

 ***Plenary Speaker****:* IFT Symposium – Historical Developments of Novel and Nonthermal Processing, IFT Annual Meeting, New Orleans, 1 July 2008. *Presentation Title:* Historic development of microwave and radio-frequency processing.

 ***Plenary Speaker****:* IFT Symposium – Innovation in Numerical Modeling of Emerging Technologies, Part II-Microwave and Ohmic Heating, IFT Annual Meeting, New Orleans, 1 July 2008. *Presentation Title:* Microwave induced temperature patterns in food packages.

2007 Product Collaboration on WTC Projects. Discover WSU Workshop, organized by Washington Technology Center, WSU Grant Office, and SIRTI. April 10, 2007.

 How to write multi-disciplinary proposal, WSU OGRD Workshop for New Faculty. March 20, WSU.

2006Microwave Sterilization Technology, USDA Short Course on Advanced Processing Technologies, University of California, Davis, March, 5-6, 2006

 Novel Thermal Processing Technologies for Military, Space, and Retail Markets. Zhejiang University, HongZhou, August 10, 2006.

 Principles of MW and RF Sterilization Processes. South YangZie University, Wuxi, China, August 5, 2006.

2005 ***Keynote Speaker****(40 min):* 6th International Conference on Food Science and Technologies, Gongzhou, China, 6-10 November 2006. *Presentation Title:* Development of advanced thermal processing technologies in USA.

 ***Plenary Speaker****:* 39th Annual Microwave Symposium of the International Microwave Power Institute, Seattle, WA, , 13-15 July 2005. *Presentation Title:* Microwave and RF sterilization technologies for packaged foods.

***Plenary Speaker****:* USDA Emerging Processing Technologies Symposium. Washington DC, 26-27 May 2005. *Presentation Title:* Microwave and RF sterilization technologies.

 *By special invitation:* Multi-disciplinary and institution research at WSU in addressing challenges in food and agriculture engineering. To USDA CSREES and NRI National Program Leaders, Washington DC, February 17.

 ***Plenary Speaker****:* Pacific Northwest Farm Forum, Spokane, WA, 12 January 2005. *Presentation Title:* Extruded snack foods from legumes.

2004 ***Plenary Speaker****:* USA Dry Pea and Lentil Council, Western Pea and Lentil Grower Association, 2004 Annual Meeting “Pulse Outlook 2005”, Moscow, Idaho, 8 December 2004. *Presentation Title*: Puffed lentils­­­-the future of extruded legume snack, Market Outlook Feature Presentation.

 *By special invitation:* How To Write Scientific Papers – China Agricultural University, Beijing, China, 13 October 2004.

 Research Strategy and Methods for Developing Thermal Quarantine and Phytosanitary Treatment for Postharvest Pest Control. U.S. Pacific Basin Agricultural Research Center, Hilo, Hawaii, 4 May 2004.

 Engineering in Food Industry and New Technology Development at WSU. Chemical Engineering, Department, WSU, 4 April 2004.

 Advanced Thermal Processing Technology Development at Washington State University Northwest Food Processors Association Annual Meeting, Portland, OR, 15-16 January 2004.

2003  ***Plenary Speaker****:* Northwest Food Safety and Sanitation Conference, Portland, OR, Oct. 21-22. *Presentation Title*: Emerging Food Processing Technologies.

 ***Plenary Speaker****: Conference of Food Engineering*, AIChE Annual Meeting - Tutorial on Engineering Properties of Biological Materials, San Francisco, CA, 16-21 November 2003. *Presentation Title*: Dielectric Properties Related to Radio Frequency and Microwave Heating.

**CONSULTING ACTIVITIES**

* Invited speech on Current and Emerging Technologies in Fruit and Vegetable Processing, PepsiCo Fruit and Vegetable Research and Innovation Summit (2008, 2009, 2010)
* RF Drying Technology for Low Oil Potato Chips, Fritolay, TX (2007)
* PepsiCo International R&D Center, UK, Microwave Processing, (2009)
* ConAgra, Microwavable foods (2012)
* McCormick, Low Moisture Food Safety (2015-2023)
* E&J Gallo Winery, Drying Technologies (2017)
* PepsiCo Technical Advisory Board, microwave consultant (2024-)

**PROFESSIONAL SERVICES**

***Editorial Boards:***

Editorial Boards for 1) Journal of Food Engineering (2010-2018),

2) International Journal of Food Engineering (2004-)

3) Journal of Food Processing and Preservation (2008-)

4) Journal of Microwave Power and Energy (2010-)

5) Sustainable Food Technology, Royal Society of Chemistry (2022-)

6) Food Physics (2023-)

* Section Editor and Vice Chair of Editorial Board, International Journal of Agricultural and Biological Engineering (2008)
* Associate Editor, J. Applied Engineering in Agriculture, Food & Process Engineering Institute of the American Society of Agricultural Engineers (2000-2012)
* Associate Editor, Transactions of the ASAE, Food & Process Engineering Institute of the American Society of Agricultural Engineers (2000-present)
* Contributing Editor, Advances in Agricultural Science and Technology Series Vol. 1: Advances in Bioprocessing Engineering (1998-2002)

***Advisory Boards:***

Scientific Advisory Board for American Institute of Frozen Foods (2014-2022).

## **LEADERSHIP IN PROFESSIONAL ORGANIZATIONS:**

* **International Microwave Power Institute**
	+ **President** (2009-2010)
	+ Board of Governors (2005-present)
	+ Annual Symposium Committee Chair (2006-2011)
	+ Organizing Committee Member, 2nd World Congress on Microwave Energy Applications for 2012 (2008- present)

**Institute of Food Technologists (member ID,** 00042272, 2/19/1992-)**, Food Engineering Division**

* + **Chair** (2010-2011), Executive Officer (2006- 2010)
* **American Society of Agricultural and Biological Engineers**
	+ Co-Chair, Food Systems of ASABE Bio-circular Economy Initiative (2022-)
	+ Fellows Screening Committee (2017-2022)
	+ Co-Chair, Task-Force for Revitalization of Food Engineering within ASABE (2014-)
	+ Technical Paper Awards Committee, Food & Process Engineering Institute of ASAE (1999 -present; Chair, 2000-01)
	+ Publication Committee, Food & Process Engineering Institute of ASAE (2000 - ; Chair,2001-02)
	+ Organizer of technical sessions on microwave and radio frequency heating at ASAE annual meetings (1999-2007)
* ***Association of Overseas Chinese Agricultural, Biological and Food Engineers***

**President** (2004-05), **Board of Directors** (2002- 2010), **AOC Foundation Board of Directors** (2005-2012), **Organizing Committee** (2001), **Chair** of Meetings and Conference Committee (2002-04).

**OTHER PROFESSIONAL SERVICES**

**A key organizer and fund raiser for the Conference of Food Engineering, Seattle, August 25-28, 2024.**

**Initiator and Key Organizer:** Advances in Thermal Processing Technologies for Safe Foods.2018 International Forum on Food Science and Health, Changsha, China, Sept. 4-5, 2018, Sponsored by Hunan Agricultural University, Hunan, China and Chinese America Food Society (CAFS).

**Leader of Five Member International Team:** External review of the graduate program in the College of Food Science, China Agriculture University, Beijing, China. May 11-15, 2018, to fulfil the guidance of the Chinese Ministry of Education for top ranked Chinese graduate programs.

**Member of Organization Committee: 2018 Conference of Food Engineering,** Minneapolis, MN, Sept. 16-19, 2018.

**Member of Organization Committee**: SmartAg Strategic Planning Workshop, Sponsored by ASABE and IEEE, Detroit, MI. August 2, 2018.

**LEADERSHIP AND SERVICES AT WASHINGTON STATE UNIVERSITY**

* University Committees: 1) President’s Distinguished Award for Innovation and Entrepreneurship (2018-2020); 2) V. Lane Rawlins Distinguished Lifetime Service Award (2017-, **Chair**, 2020-); 3) Regents Professor Nomination Review Committee (2018-2020); Panellist for multi-disciplinary grant competition (2021).
* Co-Chair for University 2014-2015 Strategic Planning - Outreach, Engagement and Economic Development Sub-team (2014-2015).
* Associate Chair, Department of Biological Systems Engineering (2011-2016); **Chair (**2016-2020).
* Food Engineering Area Leader, Department of Biological Systems Engineering (2000-2013, 2021-).
* Co-Chair, Department of Chemical Engineering and Department of Biological Systems Engineering Re-organization Committee (2007).
* Promotion and Tenure Advisory Committee, College of Agriculture and Home Economics, WSU (2002-2003, 2021, **Chair**, 2004-05).
* Chair, Graduate Committee, Department of Biological Systems Engineering (2004-2016).
* Chair, Postharvest/Food Engineering/Food Science Strategic Planning Team for the College of Agriculture and Home Economics (2000-01).
* Chair, WSU Food Processing Pilot Plant Committee (2000-02).
* Chair, Scholarship Committee, Department of Biological Systems Engineering (1997-01).
* Advisor of Biological Systems Engineering Student Club (1996-1998).

**JOURNAL ARTICLES** (\*corresponding author or major advisor of graduate students who are first authors)

452. Sivabalan, S., Ross, C.F., Tang, J., Sablani, S.S. 2024. Physical, thermal, and storage stability of multilayered emulsion loaded with β-carotene, *Food Innovation and Advances* 2024, 3(3): 244−255, *https://doi.org/10.48130/fia-0024-0022.*

# 451. Guan, J., Lacombe, A., Rane, B., Artiga, C., Tang, J., Sablani, S., Wu, VCH. 2024. Scaling up gaseous chlorine dioxide (ClO2) treatment in the cold storage of fresh apples. Postharvest Biology and Technology, [Volume 217](https://www.sciencedirect.com/journal/postharvest-biology-and-technology/vol/217/suppl/C), 113118, [*https://doi.org/10.1016/j.postharvbio.2024.113118*](https://doi.org/10.1016/j.postharvbio.2024.113118)*.*

450. Qu, Z., Shah, D.H., Sablani, S.S., Ross, C.F., Sankaran, S., Tang, J.\* 2024. Thermal inactivation kinetics of Salmonella and Campylobacter in chicken liver. *Poultry Science,* *103:103961, https://doi.org/10.1016/j.psj.2024.103961.*

449. Albahr, Z., Promsorn, J., Tang, Z., Ganjyal, G. M., Tang, J., Sablani, S.S., 2024. Storage and thermal stability of selected vegetable purees processed with microwave-assisted thermal sterilization. Food Innovation and Advances, 2024, 3(2):99-110, *https://doi.org/10.48130/fia-0024-0010.*

448. Bhunia, K., Tang, J., Sablani, S.S. 2024. Microwave-based sustainable in-container thermal pasteurization and sterilization techniques for foods. *Sustainable Food Technology, published by the Royal Society of Chemistry*.5/16/2024, *DOI: 10.1039/d3fb00176h*

447. Guan, J., Lacombe, A., Rane, B., Blair, J.V., Zheng, Y., Tang, J., Sablani, S.S., Wu, V.C.H. 2024. The stress response of *L. monocytogenes*, inoculated on fresh apples exposed to gaseous chlorine dioxide. *Journal of Food Safety* *2024;44:e13126, https://doi.org/10.1111/jfs.13126.*

446.Zhou, X., Czekala, P., Olszewska–Placha,M., Salski, B., Zhang, S., Pedrow, P.D., Sablani, S.S., Tang, J.\*, 2024. Understanding microwave heating of oil. *J. Food Engineering,*

445. Sun, S., Yang, R., Xie, Y., Zhu, M.J., Sablani, S.S., Tang, J.\* 2024. The effect of water activity on thermal resistance of *Salmonella* in chocolate products with different fat contents. *Food Control, 162,110443,* *https://doi.org/10.1016/j.foodcont.2024.110443.*

444. Zhang, S., Yang, R., Zhou, X., Feng, Y., Tang, J\*. 2024. *Salmonella* control for dried apple cubes. *Food Control* [*162*](file:///C%3A%5CUsers%5Cjtang%5CAppData%5CLocal%5CMicrosoft%5CWindows%5CINetCache%5CContent.Outlook%5CHR6EK6C0%5C162)*, 110428,* [*https://doi.org/10.1016/j.foodcont.2024.110428*](https://doi.org/10.1016/j.foodcont.2024.110428)*.*

443. Hua Z., Thapa, B.B., Younce, F., Tang, J., Zhu, M.J. 2024. Impacts of water activity on survival of *Listeria innocua* and *Enterococcus faecium* NRRL 2354 in almonds during steam treatments. *International J. Food Microbiology 110592****,*** [*https://doi.org/10.1016/j.ijfoodmicro.2024.110592*](https://doi.org/10.1016/j.ijfoodmicro.2024.110592)*.*

442. Gezahegn, Y.A., Tang, J.\*, Pedrow, P., Sablani, S.S., Tang, Z., Barbosa-Cánovas, G.V. 2024. Development and validation of engineering charts: heating time and optimal salt content prediction for microwave assisted thermal sterilization. *J. Food Eng. 369, 111909,* [*https://doi.org/10.1016/j.jfoodeng.2023.111909*](https://doi.org/10.1016/j.jfoodeng.2023.111909)*.*

441.Zhang, Y., Chen, X., Liu, Y., Li, F., Tang, J., Shi, H., Yang, J. 2024. Using ice surrounding to improve radio frequency tempering uniformity of bulk pacific white shrimp (*Litopenaeus vannamei*). *J. Food Engineering.* [*https://doi.org/10.1016/j.jfoodeng.2024.111967*](https://doi.org/10.1016/j.jfoodeng.2024.111967)*.*

440. Zhou, X., Gezahegn, Y., Zhang, S., Tang, Z.,Takhar, PS., Pedrow, PD. Sablani, SS., Tang J.\* 2023. Theorical reasons for rapid heating of vegetable oils by microwaves*. Current Research in Food Science,://doi.org/10.1016/j.crfs.2023.100641.*

439. Patel, J., Parshi, A., Tang, Z., Tang, J., Sablani, S. 2023. Storage stability of vitamin C fortified purple mashed potatoes processed with microwave assisted thermal sterilization system. *Food Innovation and Advances 2(2):* 106-114.

438. Yang, R., Tang., J.\* 2023. Developing thermal control of Salmonella in low-moisture foods using predictive models. *Food Safety Magazine. August/September Issue, https://www.food-safety.com/articles/8787-developing-thermal-control-of-salmonella-in-low-moisture-foods-using-predictive-models*

437. Sun, S., Xie, Y., Zhou, X., Zhu, M.J., Sablani, S., Tang., J.\* 2023. Survival and thermal resistance of *Salmonella* in chocolate products with different water activities. *Food Research International, 172,* 113209, *https://doi.org/10.1016/j.foodres.2023.113209.*

436. Guan, J., Lacommbe, A., Rane, B., Tang, J. \*, Sablani. S. Wu, C.H., 2023. Efficacy of gaseous chlorine dioxide (ClO2) treatment on quality parameters and against Listeria innocua growth on apple surfaces under controlled atmosphere (CA) storage condition and post-treatment quality analysis, *Food Control.* *152:109791.* *https://doi.org/10.1016/j.foodcont.2023.109791.*

435. Rane, B., Lacombe, A., Guan, J., Bridges, D.F., Sablani, S.,Tang, J., Wu, V.C., 2023. Gaseous chlorine dioxide inactivation of microbial contamination on whole black pepper corns. *J. Food Safety,* https*://doi.org/10.1111/jfs.12948.*

434. Ross, C., Sablani, S.S., Tang, J.\* 2023. Preserving ready-to-eat meals using microwave technologies for future space programs, *Foods.* 12:1322, *https://doi.org/10.3390/foods12061322.*

# 433. Gezahegn, Y.A., Hong, Y.K., Tang, J\*., Pedrow, P.D., Sablani, S.S., Liu, F., Tang, Z., 2023. Development and validation of analytical charts for microwave assisted thermal pasteurization of selected food products. *J. Food Eng. 111434,* [*https://doi.org/10.1016/j.jfoodeng.2023.111434*](https://doi.org/10.1016/j.jfoodeng.2023.111434)*.*

432. Zhou, X., Tang, Z., Pedrow, P.D., Sablani, S.S., Tang, J.\* 2023. Microwave heating based on solid-state generators: New insights into heating pattern, uniformity, and energy absorption in foods. *J. Food Eng., 357:11165, https://doi.org/10.1016/j.jfoodeng.2023.111650.*

431. Zhou, X., Pedrow, P.D., Bohnet, S., Sablani, S.S., Tang, J.\* 2023. Heating performance of microwave ovens powered by magnetron and solid-state generators. *Innovative Food Science & Emerging Technologies* 83: 103210, *https://doi.org/10.1016/j.ifset.2022.103240.*

430. Shen, X., Su, Y., Hua, Z., Zhu, H., GÜnlü, G., Ross, C., Mendoza, M., Hanrahan, I., Tang, J., Zhu, M.J. 2023. Listeria monocytogenes cross-contamination during apple waxing and subsequent survival under different storage conditions, *Food Microbiology 110:104166, https://doi.org/10.1016/j.fm.2022.104166.*

# 429. Sun, S., Xie, Y., Yang, R., Zhu, M.J., Sablani, S., Tang., J.\* 2023. The influence of temperature and water activity on thermal resistance of Salmonella in milk chocolate. *Food Control,* 109292, [*https://doi.org/10.1016/j.foodcont.2022.109292*](https://doi.org/10.1016/j.foodcont.2022.109292)*.*

428. Rane, B., Lacombe, A., Guan, J., Lucero, L., Bridges, D.F., Sablani, S.,Tang, J., Wu, V.C., 2023. Reduction of Aspergillus flavus and aflatoxin on almond kernels using gaseous chlorine dioxide fumigation. *Food Chemistry, 402*, [*https://doi.org/10.1016/j.foodchem.2022.134161*](https://doi.org/10.1016/j.foodchem.2022.134161)*.*

427. Chen, X., Li, F., Tang, J., Shu, H., Xiw, J., Jiao, Y. 2023. Temperature uniformity of frozen pork with various combinations of fat and lean portions tempered in radio frequency. *J. Food Eng. 111396*, *https://doi.org/10.1016/j.jfoodeng.2022.111396.*

426. Yildiz, S., Shin, G.Y., Franco, B., Tang, J., Sablani, S.S., Barbosa-Canovas, G.V., 2023. Equivalent processing for pasteurization of a pineapple juice-coconut milk blend by selected nonthermal technologies. *J. Food Sci*., *https://doi.org/10.111/1750-3841.16403.*

425. Albahr, Z., Al-Ghamdi, S., Tang, J., Sablani,. S.S. 2022*.* Pressure-assisted thermal sterilization and storage stability of avocado puree in high barrier polymeric packaging. *Food Bioprocess Technol.,,* 15, 2616–2628, *https://doi.org/10.1007/s11947-022-02904-2.*

# 424. Parhi, A., Zhang, C., Sonar, C., Sankaran, S., Rasco, B., Tang, J., Sablani, S.S. 2022. Finding a carbohydrate gel-based oxygen indicator for expedited detection of defects in metal-oxide coated food packaging, Food Packaging and Shelf-life, 34, 100972, *https://doi.org/10.1016/j.fpsl.2022.100973.*

423. Yang, R., Lombardo, S.P., Conway, W.F., Tang, J.\* 2022. Inactivation of Salmonella Enteritidis PT 30 on black peppercorns in thermal treatments with controlled relativity humidities. *Food Research International 162:112101.* *https://doi.org/10.1016/j.foodres.2022.112101.*

422. Inanoglu, S., Barbosa-Canovas, G.V., Sablani, S.S., Zhu, M.J., Keener, L., Tang, J.\* 2022. High-pressure pasteurization of low-acid chilled ready-to-eat food. *Comprehensive Reviews in Food Science and Food Safety, https://doi.org/10.1111/1541-4337.13058.*

# 421. Low, M., Scharff, R., Tang, J., Grasso-Kelley, E.M., Feng, Y. 2022. Food handling practices of apple drying in home kitchens in the United States: a survey, *J. Food Protection, 85(10):1418-1430.* *https://doi.org/10.4315/JFP-22-106.*

# 420. Ahmad, N., Hildebrand, J.M., Pickens, S.R., Vasquez, S., Jin, Y., Liu, S., Halik, L.A., Tsai, H.C., Lau, S.K., D’Souza, R.C., Kumar, S., Sabbiah, J., Thippareddi, H., Zhu, M.J., Tang, J., Anderson, N.M., Grasso-Kelley, E.M., Ryser, E.T., Marks, B. 2022. Interlaboratory evaluation of enterococcus faecium NRRL B-2354 as a Salmonella surrogate for validating thermal treatment of multiple low-moisture foods. *Journal of Food Protection, 85(11):1538-1552, https://doi.org/10.4315/JFP-22-054.*

419. Zhou, X., Zhang, S., Tang, Z., Tang, J.\*, Takhar, P.S. 2022. Microwave frying and post-frying of French fries. *Food Research International, 159, 111663*, *https://doi.org/10.1016/j.foodres.2022.111663*

418. Yang, R., Wei, L., Dai, J., Tang, J.\* 2022. Thermal death kinetics of Salmonella Enteritidis PT30 in peanut butter as influenced by water activity. Food Research International. *157: 111288,* https://doi.org/10.1016/j.foodres.2022.111288.

417. Yao, Y., Han, R., Li, F., Tang, J., Jiao, Y. 2022. Mass transfer enhancement of tuna brining with different NaCl concentrations assisted by ultrasound, Ultrasonics Sonochemistryhttps://doi.org/10.1016/j.ultsonch.2022.105989.

416. Xie, Y., Zhang, S., Sun, S., Zhu, M.J., Shyam, S.S., Tang, J.\* 2022. Survivability of Salmonella and Enterococcus faecium in chili, cinnamon and black pepper powders during storage and isothermal treatments. *Food Control 137: 108935, https://doi.org/10.1016/j.foodcont.2022.108935.*

415. Quintanilla, A., Mencia, A., Powers, J., Rasco, B., , Tang, J., Sablani, S.S. 2022. Developing vacuum-impregnated dehydrofrozen red raspberries with improved mechanical properties*, Drying Technology 40 (2*), 299-309.

414. Pokhrel, P., R., Boulet, C., Yildiz, S., Sablani, S.S., Tang, J., Barbosa-Cánova, G.V., 2022. Effect of high hydrostatic pressure on microbial inactivation and quality changes in carrot-orange juice blends at varying pH, *LWT*, 159, 113219, https://doi.org/10.1016/j.lwt.2022.113219.

# 413. Lin, Y., Liu, Y.H., J. Tamg. Wang, S., Qao Z.J. 2022. Dielectric loss mechanism of powdered infant formula milk. *Innovative Food Science & Emerging Technologies* 76, 102950. https://doi.org/10.1016/j.ifset.2022.102950.

412. Yang, R., Cheng, T., Hong, Y., Wei, L., Tang, J.\* 2022. The effect of dry headspace on the thermal resistance of bacteria in peanut oil and peanut butter. *Food Control*. *https://doi.org/10.1016/j.foodcont.2022.108851.*

411. Sonar, C.R., Tang, J., Sablani, S.S. 2022. Polymer packaging for in-pack thermal pasteurization technologies. *Food Engineering Innovations Across the Food Supply Chains,* 307-322.

410. Xu, J., Xie, Y., Paul, N.C., Roopesh, M.S., Shah, D.H., Tang, J.\*, 2022, Water sorption characteristics of freeze-dried bacteria in low-moisture foods. *International Journal of Food Microbiology*, *https://doi.org/10.1016/j.ijfoodmicro.2021.109494*.

409. Inanoglu, S., Barbosa-Canovas, G.V., Tang, Z., Liu, F., Sablani, S.S., Zhu, M.J., Tang, J.\* 2022. Qualities of high pressure and microwave‐assisted thermally pasteurized ready‐to‐eat green beans during refrigerated storage at 2 and 7°C, *Food and Bioprocess Technology*, [*https://doi.org/10.1007/s11947-021-02736-6*](https://doi.org/10.1007/s11947-021-02736-6)***.***

408*.* Liu, S., Wei, X., Tang, J.\*, Qin, W., Wu, Q. 2022. Recent developments in low-moisture foods: microbial safety and thermal process. *Food Research International* *155, 111072* *https://doi.org/10.1016/j.foodres.2022.111072.*

407. Liu, S., Wei, X., Tang, J.\*, Qin, W., Wu, Q. 2021. Recent developments in low-moisture foods: microbial validation studies of thermal pasteurization processes. *Critical Reviews in Food Science and Nutrition,* [*https://doi.org/10.1080/10408398.2021.2016601*](https://doi.org/10.1080/10408398.2021.2016601)*.*

406. Guan, J., Lacombe, A., Rane, B., Tang, J.\*, Sablani, S.S., Wu, V.C.H., 2021. A review: gaseous interventions for listeria monocytogenes control in fresh apple cold storage. *Frontiers in Microbiology 12:782934,* [*https://doi.org/10.3389/fmicb.2021.782934*](https://doi.org/10.3389/fmicb.2021.782934)*.*

405. Zhang, Y., Li, F., Yao. Y., He, J., Tang, J., Jiao, Y. 2021. Effects of freeze-thaw cycles of Pacific white shrimp (Litopenaeus vannamei) subjected to radio frequency tempering on melanogesis and quality. *Innovative Food Science and Emerging Technologies. https://doi.org/10.1016/j.ifset.2021.102860.*

404. Gezahegn, Y.A. Tang, J\*., Sablani, S.S., Pedrow, P.D., Hong, Y.K., Lin, H., Tang, Z., 2021.  Dielectric properties of water relevant to microwave assisted thermal pasteurization and sterilization of packaged foods. *Innovative Food Science & Emerging Technologies*, 74, 102837, *https://doi.org/10.1016/j.ifset.2021.102837.*

403. Cao, F., Zhang, R., Tang, J., Li, F., and Jiao, Y. 2021. Radio frequency combined hot-air (RF-HA) drying of tilapoa (*Oreochromis niloticus, L.)* fillets. Drying kinetics and quality analysis. *Innovative Food Science & Emerging Technologies, 74, 102791, https://doi.org/10.1016/j.ifset.2021.102791.*

402. Garrido, D., Gallardo, K., Carolyn, Ross, Maria Laura, M., Tang, J., 2021. Does the order of preparation ofextrinsic and intrinsic quality attributes matter when eliciting willingness to pay? *Journal of Food Science*, *https://doi.org/10.1111/1750-3841.15825.*

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3. Tang, J., Liu, F., The South Korean patents entitled “Microwave Sterilization or Pasteurization,” filed from the PCT/US15/29468 patent on 5/6/2015, and assigned Registration Serial Number 2016-7034227.
4. Tang, J., Liu, F., The Thailand patents entitled “Microwave Sterilization or Pasteurization,” filed from the PCT/US15/29468 patent on 5/6/2015, and assigned Registration Serial Number 1601006460.
5. Tang, J., Liu, F., The Chinese patents entitled “Microwave Sterilization or Pasteurization Transport Carriers,” filed from the PCT/US2018/020168 application]
6. Tang, J., Liu, F., The European patents entitled “Microwave Sterilization or Pasteurization Transport Carriers,” filed from the PCT/US2018/020168 application]
7. Tang, J., Liu, F., The Indian patents entitled “Microwave Sterilization or Pasteurization Transport Carriers,” filed from the PCT/US2018/020168 application on 8/14/2019, and assigned reference number 201917032849.
8. Tang, J., Younce, F., Tang, Z., Liu, F. Solid-states microwaves sterilization and pasteurization. *(US Patent, file in June 2021).*

**PATENTS (failed or incomplete)**

1. Tang, J. Luan, D., Liu, F. New field domestic microwave oven (US *Patent, provisional filing made on July 9, 2015*).
2. Tang, J., Wang J., Liu, F. A chemical marker system for heating pattern determination of microwave assisted pasteurization processes (*US Patent, provisional filing made on July 25, 2015, withdrew in October, 2021)*.
3. Barrios, JDJ., Tang, J., Swanson, B. 2006. Extrusion-cooking of high fiber products based on legume flours. Official application filed through USDA ARS Western Regional Center at Albany, CA, Dec. *16, 2006, serial No. 11/641,318. Publication US-2008-0145483-A1*.
4. Barrios, JDJ., Patil, RT, Tang, J., Swanson, B. 2006. Method for the production of functional food type products as fortified potato based French fries developed by conventional, hypobaric and supercritical fluid extraction. Patent Disclosure to USDA ARS (No. 0033,06).

**TRADMARKS**

“MAPS” word mark filed in the USA Patent Office on March 4, 2019 and assigned serial number 88/324354 for Microwave Assisted Pasteurization Systems.

**Graduate Students in My Laboratory (**all students received full support either from my grants or with external scholarships identified below**)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Student Name** | **Research Topic or Dissertation Title, and Awards** | **Degree****Program** |  | Starting – or **Graduation Date****(-Expected)** | **Position after graduation** |
|  |  |  |  |  |  |
| **56. Sheng Yu Wu** | UV pasteurization of foods | PhD. |  | 1/2023- |  |
| **55. Shuang Zhang** | Low moisture food safety | PhD. | 11/ | 1/2023- |  |
| **54**. **Zhou Xu** | Solid-state MW heatingsupported by CSC.BSE Graduate Students Seminar Presentation, 1st place (2023)The Robert F. Schiffmann Memorial Scholarship, IMPI, 202,3Oral Presentation Excellence Awards (2) at the 2023 ASABE Annual International Meeting | PhD. |  | 1/2020-11/2023 |  |
| **53. Sicheng Sun** | Low moisture food safetysupported by CSC | PhD. |  | 8/2018, defended 4/17/2023 | Research Scientist, R&D Dept., Beijing Run-Food Co. |
| **52. Yucen Xie** | Microwave pasteurizationsupported by CSC | PhD. |  | 1/2018-3/2022 | Post-Doctorate Fellow, UC Davis |
| **51. Sumeyye Inanoglu** | Microwave processing | PhD. |  | 8/2017-4/2021 | Research Scientist, USDA Western Regional Center, Auburn, CA |
| **50. Gezahegn Yonas** | Microwave pasteurization | PhD. |  | 8/2017-12/2022 | Research Engineer, Nestle |
| **49. Jiewen Guan** | Low Moisture Food Safetyjointly with USDA ARS | PhD. |  | 8/2017-11/2022 | Scientist, AEMTEK, Fremont, CA.  |
| **48. Qu Zhi** | Microwave Processingsupported by CSC | PhD |  | 8/2016-7/2021 | Senior R&D EngineerBeijing Industrial Technology Research InstituteNo.5, Xingguang 4 Ave, Opto-Mechatronics Industrial Park, Zhongguancun Science Park, Tongzhou District, Beijing 101111, China<qzhkiwi@126.com> |
| **47. Yuqiao Jin** | Low Moisture Foods Safety PhD.*Intern at Nestle Food, Summer 2019* | PhD. |  | 8/2016-1//2020 | **Assistant Professor** at IIT, Chicago |
| **46. Yoon Ki Hong** | Microwave Processing*Intern at Australia Department of Defense Food Lab, summer 2020* | PhD. |  | 8/2016-7/2021 | Scientist, 415-238-7085ykhoog@ju.st.Eat Just, Inc., 2000, Folsom St. San Francisco, CA 94110 |
| **45. Marco Esteban Perez Reyes** | Thermal Inactivation of Salmonella Enteritidis Pt30 and Enterococcus Faecium in Egg Powders at Different Water Activities*Mexican Scholarships (CONACYT)* | Ph.D  |  | 8/2015-2/2020   | *Research Assistant Professor, Mexico* |
| **44. Ren Yang** | The Protective Effect of Oil on Bacterial Thermal Inactivation in High-fat Low-Moisture Foods: Mechanism and Solutions.*Intern for McCormick and Comany**2018* | Ph.D. |  | 8/2015-6/2020 | **Assistant Professor,***South Dakota State University* |
| **43. Jaza Shammari** | Thermal Resistance of Salmonella in Low-Moisture Sugar Products*Saudi Arabia Government* (3+3yr, with travel for one meeting per year) | Ph.D. |  | 1/2015-5/2020 | **Assistant Professor**Department of Public Health and Health Informatics University of Hail. Saudi Arabia, jaza.alshammari@uoh.edu.sa, Phone # +966566999913  |
| **42. Jie Xu** | Control of Salmonella in Low-moistire Foods: Thermal Death Kinetics and Microbial Validation of Radio-Frequency Processes*CSC Scholarship**IFTPS Paper Competition, First Place, 2017**Intern at McCormick and Company* | Ph.D. |  | 8/2014- 4/2019  | Post-Doct. **Harvard University** |
| **41. Shuxian Liu** | Low moisture food safety*CSC Scholarship**Received 2nd Place in 2017 AACCI Best Student**Research Paper Competition* *2017 Feed for Tomorrow Scholarship from IFT**2017 IAFP Travel Award**Intern at McCormicl and Company* | Ph.D.  |  | 8/2013-10/2017 | **Associate Professor**Sichuan Agricultural University, China |
| **40. Ravi Kiran Tapapaneni** | RF processing | Ph.D. |  | 1/2013-12/2017 |  **Ajinomoto**  **Commercialization Manager** Innovation Team,**tadapanenir@ajiusa.com** (312) 810-3593  tadapanenir@ajiusa.com  250 East Devon Ave., Itasca, IL 60143 |
| **39. Deepali Jain** | Microwave processing | Ph.D. |  | 1/2013- 12/2017 | **Senior Vice President**, Food Security, Sync Energy Inc.New York, deepali@sync.energy |
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| --- | --- | --- | --- | --- |
| **38. Jungang Wang** | Salt diffusion in food during thermal processing *2013 IFT Puget Sound Travel Award**2013 NASA Summer Fellow* | M.S. | (( 1/2012-5/2013 |  |

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| Food quality through thermal processing*CSC Scholarship* |  | M.S. | (( 1/2012-5/2013 |  |

 | PhD. |  | 1/2014-1/2018 | **Senior Process Engineer,** Campbell Soup |
| **37. Hongchao Zhang** | Food PackagingJointly with Dr. Sablani | PhD. |  | 1/2013-11/2016 | Associate Professor, China Agricultural College , Beijing, China |
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| **36. Ellen Bornhorst** | Salt diffusion in food during thermal processing *2013 IFT Puget Sound Travel Award**2013 NASA Summer Fellow* | M.S. | (( 1/2012-5/2013 |  |

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| --- | --- | --- | --- | --- |
| Microwave heating*USDA National Need Scholarship**2016 IECEF Paper Award**2015 NASA Intern* |  | M.S. | (( 1/2012-5/2013 |  |

 | PhD. |  | 7/2013-12/2016 | **Senior Research Engineer**, erbornhorst@gmail.comPepsi-Cole  |
| **35. Rossana Villa** | RF Processing*Mexican Scholarship (CONACYT)* | Ph.D. |  | 1/1/2012-11/2015 | **Assistant Professor,** University of Nebraska |
| 34. Ellen Bornhorst | Salt diffusion in food during thermal processing *2013 IFT Puget Sound Travel Award**2013 NASA Summer Fellow* | M.S. |  | (( 1/2012-5/2013 | WSU PhD Student |
| 33. **Rajat Tyagi**32. **Wenjia Zhang**31. Yage Shi30. **Donglei Luan**29. **Jiao Yang** 28. **Jing Peng** | MW Engineering, modeling, energy efficiency, engineering scaling-up*2012 IFT Puget Sound Travel Award*Chemical marker for MW pasteurization *China Scholarship Council Support**2012 IFT Puget Sound Travel Award**2012 IMPI Paper Poster Competition 1st Place**2013 IFT Puget Sound Outstanding Student Award**2013 IFT Feeding Tomorrow Graduate Student Scholarship**2013 WSU Biological Systems Engineering Graduate Studies Achievement Award*Food kinetics in short thermal processing, **jointly** with Northwest University of Agriculture and Forestry, ***China Scholarship Council support***Microwave heating/Computer Simulation*China Scholarship Council support**2013 IFT Puget Sound Outstanding Student Award*MW sterilization energy efficiency*China Scholarship Council* *Support**2012 IFT Puget Sound Outstanding Student Award**2013 IFT Puget Sound Travel Award*Microwave pasteurization-quality kinetics *China Scholarship Council (CSC) Support**2013 IFT Puget Sound Travel Award* | Ph.D.Ph.D.Ph.D.Ph.D.Ph.D. Ph.D. |  | (08/2013)05/2015(01/2013)08/201407/201412/2013 |  WithdrawSenior Research Scientist,zhangatko@gmail.com Coca Cola, USA**Assistant Professor,** Northwest University of Agriculture and Forest, China**Associate Professor**, Shanghai Ocean University, Shanghai, China**Associate Professor**, **Department Chair**. Shanghai Ocean University, Shanghai, China (yjiao@shou.edu.cn)**Assistant Professor**, Nanjing Agricultural University, China |
| 27. **Shunshan Jiao** | RF heating/computer simulation/system design, *China Scholarship Council support* | Ph.D. |  | 12/2011 | **Associate Professor**Shanghai JiaoTongUniversity |
| 26. **Ofero A Caparino** | Drying technologies for tropic fruits *s****cholarships from Ford Foundation 2007-2010******2004 IFT Puget Sound Travel Award******Excellence in Research awarded by R Wiley Research, WSU GPSA, 2012*** | Ph.D. |  | 05/2012 | **Division Chief**Biosystems EngineeringPhilippine Center for Post-Harvest Development and Mechanization, CLSU Compound, Science City of Munoz, Nueva Ecija 3120PhilippinesTel. +63444560213Email. Ofero.caparino@email.wsu.eduOfero1058@yahoo.com |
| 25. **Fermin Resurreccion** | Microwave sterilization***2011 IMPI Poster Competition 1st Place Award******2008 IFT Puget Sound Travel Award******2012 IFT Puget Sound Travel Award*** | Ph.D. |  | 12/2011 | **Senior Microwave Engineer,** Graphic Packaging, R&D Center, Denver, CO |
| 24. **Bandar Alfaifi** | RF/MW heating for pest and m/o control ***scholarships from Saudi Arabia Government***  | Ph.D. |  | 05/2013 | **Vice Dean** of Student Affairs, King Saud University |
| 23. **Yanhong Liu** | Joint with China Agric. Univ. ***scholarships from Chinese Government*** | Ph.D. |  | 04/2009 | **Associate Professor,** China Agricultural University, Beijing, China |
| 22. **Bandar Alnahdi**21. **Balunkeswar Nayak**  | Dielectric properties of solid powders***Supported by scholarships from Saudi Arabia Government***Extrusion of potato and legumes*Excellence in Agriculture Scholarship for 2007-08, 08-09, 09-10 from WA Potato Commission, Second Prize in Wiley graduate research competition for 2008 from WSU Graduate and Professional Student’s Association in the category of Engineering and Physical Sciences, 2010 IFT Feed for Tomorrow Scholarship* | M.S.PhD. |  | 05/201101/2011 | Faculty, King Saud University, Kingdom of Saudi Arabia**Associate Professor**, University of Maine |
| 20. Ho Ki Lee19. **Gopal Tiwari** | Coupled heat and EM simulationjointly with Professor Ben Li, MMEPostharvest pest and m/o control with RF ***2009 IFT Food Engineering Paper 1st place award*** | M.S.Ph.D. |  | 03/200504/2010 | Post-doc., UC Davis |
| 18. Wendy Lu | Thermal characteristics of PA 3679 spores, *Jointly with Dr. Kang, FSHN* | M.S. |  | 04/2006 | Manager of food microbiology, Michelson Laboratories, LA |
| 17. Yu Wang | MW Fish processing | M.S. |  | 12/2006 | Q/A manager, Eagle Beverage and Accessory Products LLC, dba Calson Industries, Seattle  |
| 16. **Fanbin Kong** | Microwave processing of salmon | Ph.D. |  | 01/2007 | **Professor,** University of Georgia |
| 15. **K. Khana Mokwena Nthoiwa** | Novel food packaging for MW processes ***scholarships from Botswana Government*** | Ph.D. |  | 04/2010 | **Research Scientist in Thermal Processing** National Food Technology Center, Kanye, Botswana ***Cellphone: +267-74178837******alternate e-mail:*** ***kknmet@rit.edu*** |
| 14. **Hao Chen** | 3-D Microwave heating simulation | Ph.D. |  | 02/2008 | **Software Engineer**, Microsoft, Redmond, WA  |
| 13. **Ali Alshami** | Dielectric Properties of Protein and Carbohydrate Solutions, ***USDA National Needs Fellow*** | Ph.D. |  | 03/2007 | **Associate Professor**Chemical Engineering, University of North Dakota 241 Centennial Dr.| Grand Forks | ND 58202-7101 **T** 701-777-6838|**F** 701-777-3773  |
|  |  |  |  |  |  |
| 12**. Ram Bhuwan Pandit** | Microwave processing, computer vision for heating pattern | Ph.D. |  | 12/2006 | **Research Engineer**, Nestle |
| 11. **Sohanlal Birla** | Quarantine treatments for fruits  | Ph.D. |  | 12/2006 | **Principal scientist**, ConAgra, Omaha |
| 10. **Jian Wang** | RF sterilization | Ph.D. |  | 05/2007 | Wal-Mart IT Center, LA |
| 9. Ting Sun | Process for asparagus products ***2004 IFT******Puget Sound Travel Award*** jointly with Dr. Power*s* | Ph.D. |  | 2005 | Post Doc. University of Wisconsin  |
| 8. **Kanchalee Luechaparganap** | RF sterilization, ***2004 IFT Puget Sound Scholastic Award, 2003 Marvin Byer Scholarship Award from R&DA, a*** *n****ationwide for R&D activities related to military rations and packaging*** | Ph.D. |  | 2005 | R&D Director for Asia/ANZ BevKunchalee.Luechapattanaporn@pepsico.comPepsiCo, Asia Pacific Region, Bangkok |
| 7. **Dongsheng Guan** | Microwave sterilization***2000 IFT Puget Sound Scholastic Award 2001 R&DA Student Achievement Award*** | Ph.D. |  | 2003 | **Director**, Food Safety & Quality AssuranceBumble Bee Seafoods13006 Arctic Circle · Santa Fe Springs ·  CA 90670Mobile: 001-562-322-4660 (Preferred)Fax:      001-858-694-9523Office:  001-562-207-1307Email: don.guan@bumblebee.com |
| 6. **Yifen Wang** | RF sterilization, ***1999 IFT Puget Sound Scholastic Award , 2001 IFTPS paper Competition Award (1st place)******2002 IFT Puget Sound Travel Award*** | Ph.D. |  | 2002 | **Professor,** Auburn University, Auburn, AB |
| 5. **Timothy Wig** | System Simulation for Microwave and RF Processes  | Ph.D. |  | 2001 | **Research Engineer**, High Speed Circuits, MA, a subsidiary of Intel. |
| 4. **Hao Feng** | Microwave drying of particulate foods in a spouted bed | Ph.D.  |  | 1999 | **Professor**, University of Illinois, Urbana, IL |
| 3. **Minghwei Lau** | Microwave pasteurization and sterilization of food products | Ph.D. |  | 2000 | Principal Researcher, Technical Center of Kraft Foods, IL |
| 2. **Julian Ikediala**  | Quarantine treatment for fruits using radio frequency and microwave energy***1999 WSU Science & Engineering Graduate Student Research Paper Competition Award (2nd Place).*** ***2000 ASAE Superior Paper Award*** | Ph.D.. |  | 1997-00 | Research Engineer, Technical Center, McCain Foods, NB, Canada |
| 1. BrendanAbonyi | Evaluation of refractance window drying method for fruits and vegetables | M.S. |  | 1998-00 | Plant Engineer, J.R. Simplot Company, ID |
|  |  |  |  |  |  |

#### **VISING PROFESSORS/STUDENTS/POST\_DOCTRATE FELLOWS**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Research Topic | Duration | Ph.D. Degree | Current Position |
| 53 Shuang Zhang | Food Engineering | 9/2020 | PhD Student from Northwest A&F University |  |
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| --- | --- | --- | --- | --- |
| 52. Ren Yang | Low Moisture Food | 6/2020-7/2023 | WSU | Assistant Professor, South Dakota University |

 | Low Moisture Food | 6/2020-7/2023 | WSU | Assistant Professor, South Dakota State University |
| 52 Teng Cheng | Low moisture food | 9/2019-9/2020 | PhD Student at NorthwestA&F University |  |
|  |  |  |  |  |
| 51 Lina Wei | Low moisture food | 8/2019- | Shaanxi Normal University, China | Lecture, Shaanxi University of Science & Technology |
| 50. Jianwu Dai | RF Processing | 8/2018- | China Agriculture University | Assistant Professor, Sichuan Agriculture University |
| 49. Fei Shen | RF Processing | 1/2018-12/2019 | Zhejiang University | Associate Professor, Nanjing University of Commerce  |
| 48. Thammanoonq Auksornsri | Microwave processing | 7/16-12/16 | Kasetsart University | PhD. Student, Kasetsart University, Thailand |
| 48. Xie Long | Food Processing | 11/15-11/16 | China Agriculture University | PhD. Student, China Agriculture University, Beijing China. |
| 47. Zhihui Zhu | Food Processing | 5/15-5/16 | Wuhan University | Associate Professor, Central China University of Agriculture, Wuhan, China |
| 46. Li Li45.Xue Dong Yao | Food PackagingRF Drying | 11/14-11/159/14-9/15 | Shanghai University of TechnologyChina Agricultural University | Associate Professor, Shanghai Ocean University, Shanghai, ChinaAssociate Professor, Shihezi University, Xinjiang, China |
| 44. Donglei Luan | Microwave Simulation | 9/14-9/15 | WSU | Associate Professor, Shanghai Ocean University |
| 43. Jiao Yang | RF Simulation | 8/14-8/15 | WSU | Associate Professor, Shanghai Ocean University |
| 42. Qingping Zhong, | Low moisture food safety | 8/14-8/15 | South China Agricultural University | Associate Professor, South China Agricultural University |
| 41. Roopesh Syamaladevi  | Pathogen control in low moisture food | 5/2013- | WSU | Assistant Professor, University of Alberta, Canada |
| 40. Huojie Shi39. Shunshan Jiao | RF processingRF Processing | 5/2013-8/20148/2012-8/2013 | WSU | PhD. Student, China Agriculture UniversityAssistant Professor, Shanghai JiaoTong University |
| 38. Yuqin Huang | Food Quality | 1/2013- | WSU | Professor, Shanghai University of Ocean |
|  |  |  |  |  |
| 37. Chunfan Song | Thermal Processing | 8/2012-7/2013 | China Agricultural University | Associate Professor, Jianan University, China |
| 36. Yage Shi | Thermal Processing  | 1/2009-1/2012 |  | Northwest A&F University, Yangling, Shaanxi, China. |
| 35. Sudhir Uprit34. Haihua Cong33. Baher M. A. Amer32. Mengxiang Gao,31. Rossana Villa30. Su-Der Chen | MW pasteurization***Fulbright Scholar***MW processing of seafoods, *visiting student*RF drying, ***Fulbright Scholar***RF heating*Sabbatical leave*RF heating*visiting student*RF heating*Sabbatical leave* | 8/2010-4/20111/2010-9/201011/2011-8/09-2/201002-201006/09-01/09-5/201008/08-12/08 | IIT, Kharagpur, IndiaHumboldt University Berlin, GermanyJiangXu University, ChinaMichigan StateUniversity | Prof, Chair Dept. Diary TechnologyCollege of Diary Technology, Raipur, IndiaChina Ocean University, Qingdao, ChinaAssistant Professor, Cairo UniversityFood Science Department, Yangtze University,Associate Professor, Department of Food Engineering, College Life Science, Yangtze University, Jingzhou, Hubei, China, 434025University of America, MexicoProfessor, Department of Food ScienceNational Ilan University, Taiwan |
| 29. Yunyang Wang | RF drying*Sabbatical leave* | 01/09-01/10 | NW A&F University, China | Associate Professor, Department Chair, Food Science and Engineering CollegeNorthwest A&F University, Yangling, Shaanxi, China |
| 28. Ram Pandit27. Du Kang | Thermal processing-*Post Doc*Food Processing*Sabbatical leave* | 05/08-09/0805/07-12/08 | WSULurven University, Belgium | Frito-Lay, Research EngineerProfessor, Head of Food Science Department, Nanjing Agricultural University, Nanjing, China |
| 26. Zeng Ruan25. Yulin Ji | Dairy processing*Sabbatical leave*Extrusion – *Post Doc* | 8/07-12/075/07-6/08 | South China University of Science and Tech.Iowa State University | Associate Professor , South China University of Science and Tech., QuangZhou, ChinaPepsi-Cole R&D Center, USA |
| 24. Maria Elena Sosa Morales23. Wenchuan Guao | Mango treatment with RF - *Sabbatical leave*Dielectric properties*Sabbatical leave* | 5/07-8/071/07-5/07 | Instituto Tecnologico de Veracruz of MexicoNorthwest University of Agricultural and Forestry | Assistant Professor Department of Food EngineeringUniversity of America, MexicoProfessor, Associate Dean of Agricultural EngineeringNorthwest University of Agricultural and Forestry, China |
| 22. Jae Hyung Mah | Microbial validation of thermal processes – *Post Doc.* | 08/06-12/2010 | National Korea University | Associate ProfessorDepartment of Food and Biotechnology, Korea University518B College of Science and Technology, Sejong Campus,Jochiwon-eup Yeongi-gun, Chungnam 339-700, South KoreaE-mail : nextbio@korea.ac.kr, C.P: 82-10-9164-4987Tel: 82-41-860-1431, Fax: 82-41-865-0220 |
| 21. Lahan Sinha | Extrusion – *Post Doc*. | 06-07 | IIT, Kharagpur, India | Senior Scientist, Soybean Processing and Utilization Centre, Central Institute of Agricultural Engineering, Bhopal, India |
| 20. Sohanlal Birla | Mash room soups-*Post Doc* | 06-07 | Ph.D, WSU | Principal Research ScientistBreakthrough Science/Innovation/RQISix ConAgra Drive, Omaha, NE 68102 Phone : 402-240-6184 Cell       : 402-639-4454Sohan.Birla@conagrafoods.com |
| 19. Zhang Min | Drying Technologies- *Sabbatical leave* | 2005(6 months) | China Agri. College | Professor of Food Engineering at South Yangtze University, China |
| 18. Luigi Ragni | Dielectric Properties of Egg in storage - *Sabbatical leave*  | 2005 (3 months) | University of Bologna | Associate Professor, University of Bologna, Italy |
| 17. Hyun-Jung Chung | Microbial validation of RF and MW processes- *Post Doc*. | 2004-06 | Ohio State University, Columbus, OH | Assistant Professor, Inha University, South Korea  |
| 16. Ramabhau Patil | Lentil extrusion – *Post Doc.* | 2003-05 | University of Saskatchewan, Saskatoon, Canada | Vice President of Indian Society of Agriculture Engineering, Director, Central Institute of Agricultural Engineering, Nabi Bagh, India |
| 15. Zhongwei Tang | RF & MW process design – *Post Doc.* | 2003- | University of Manitoba, Winnipeg, Canada |  |
| 14. Xinming Yin | Insect mortality – Post Doc. | 2002-04 | Southwest China Agricultural University | Professor, Dean of Graduate Studies, Henan Agricultural University, China |
| 13. Yifen Wang | RF heating – *Post Doc*. | 2003-04 | WSU | Associate Professor,Auburn University, AB |
|  |  |  |  |  |
| 12. T.V. Chan | RF Simulation – *Post Doc.* | 2003- | University of Stellenbosch, South Africa | University of Toronto, Canada, Lab Director in EE |
| 11. Slava Komarov | Microwave Simulation – *Post Doc.* | 2002-03 | Saratov State University, Russia | Professor and Chair of Radio Engineering, Saratov State University, Russia |
| 10. Yiqun Huang | Food gel rheology – *Post Doc,* | 2002-04 | WSU | Professor, Shanghai Ocean University |
| 9. Minghau Cheng | Extrusion of legume products – *Post Doc*. | 2001-03 | China Agriculture University | Cargill, MN |
| 8. Frank Liu | Microwave sterilization – *Post Doc*. | 2001- | Institute of Danian Sciences and Technology, Danian, China |  |
| 7. Caleb Nindo | Advanced drying technologies – *Post Doc*. | 2001-06 | Iwate University, Japan | Associate Professor, Director, Department of Food Science University of Maryland, Eastern Shore.  |
| 6. Surya Pathak | Computer simulation of microwave and RF heating – *Post Doc*. | 2001-03 | Institute of Technology of Banaras Hindu University, Varanasi, India | 03- Assistant Professor, Institute of Plasma Research, BHAT, India |
| 5. Shoajin Wang | RF control of insect pests in fruits and nuts – *Post Doc.* | 2000- | Department of Physics, Gembloux Agricultural University, Belgium  |  |
| 4. Julian Ikediala  | Quarantine treatment for fruits – *Post Doc*. | 2000-01 | WSU | Research Engineer, Technical Center, McCain Foods, NB, Canada |
| 3. RunSheng, Mao | Food gel rheology *– Post Doc.* | 1997-00 | University of Salford, UK | Research ChemistIndium Corporation of AmericaClinton, NY 13323  |
| 2. Hao Feng  | Dehydration using microwaves and inert gases – *Post Doc*. | 1999-00 | WSU | 0ssociate Prof. Food Eng.University of Illinois, Urbana, IL |
| 1. Yui Dain Sheng | Dehydration – *sabbatical leave* | 1997-08 | Shangshi Agriculture University | Professor, Shangshi Agr. University, China |
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Google Scholar Juming Tang, 05/20/2024

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| --- | --- | --- | --- | --- | --- |
| **Citation indices** | All |  |  |  | Since 2019 |
| Citations | 36318 |  |  |  | 16945 |
| h-index | 106 |  |  |  | 63 |
| i10-index | 412 |  |  |  | 345 |

1. \* *Senior author (see definition in the promotion manual of the College of Agric. and Home Economics, WSU, April, 2002).* [↑](#footnote-ref-1)