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EMPLOYMENT

2014-	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-	Distinguished Chair of Food Engineering, Department of Biological Systems Engineering, Washington State University, Pullman, WA.
2003-	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 include 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 approval for a homogenous food: mashed potato in trays on Oct. 07, 2009 - first ever in USA for industrial microwave sterilization process; received FDA approval 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 (MATS™) Technologies (for shelf-stable foods) and Microwave Assisted Thermal Pasteurization Systems (MAPS™) 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. MATS- MAT30 and 42 (30, 42 meals per min) continuous systems are installed in Singapore and India for commercial production. The licensed patents have generated over $300,000 royalties per year for WSU over the past 2 yrs. The IPs from his team rank number 4 in the history of WSU in generating over $1M total royalty.
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

2021 **Member, National Academy of Engineering**

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).

2001 **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 46 Ph.D. students (35 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 $28 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:

2020 ($1,053,059) **Tang, J.** Preheating of Biomass Using RF Energy. DoE through Forest Concept, Inc. (2020-2021, $116,621).
Tang, J., Humid hot air pasteurization process of spice & herb. McCormick& Company (2020-2021, $180,438).
Tang, J., Microwave assisted oil frying to reduce oil uptake. USDA AFRI, subcontract from UIUC (2020-2024, $220,000).
Tang, J Sustainable, Systems-Based Solutions for Ensuring Low-Moisture Food Safety, USDA AFRI SAS Program ($483,000, part of $9.8M).
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 in 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 $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: Masterfoods ($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).

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

INVITED/KEYNOTE / PLENARY SPEAKER (past 17 years)

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

Invited Talk (15 min) at 2020 Research and Development Association for Miltary 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 Microwaves. 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).

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

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 Novel Pasteurization 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 (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 at Shanghai 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.

2006 Microwave 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-)
- E&J Gallo Winery, Drying Technologies (2017-)

PROFESSIONAL SERVICES

Editorial Boards:

Editorial Boards for 1) J. 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-)

- 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-).

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, Food Engineering Division***
  - **Chair** (2010-2011), Executive Officer (2006- 2010)

- ***American Society of Agricultural and Biological Engineers***
  - Fellows Screening Committee (2017-2021)
  - 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

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-); 2) V. Lane Rawlins Distinguished Lifetime Service Award (2017-, **Chair**, 2021); 3) Regents

Professor Nomination Review Committee (2018-).
- 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-present); Chair (2016-).
- Food Engineering Area Leader, Department of Biological Systems Engineering (2000-2013).
- Co-Chair, Department of Chemical Engineering and Department of Biological Systems Engineering Re-organization Committee (2007).
- Chair, Promotion and Tenure Advisory Committee, College of Agriculture and Home Economics, WSU (2004-05).
- Chair, Graduate Committee, Department of Biological Systems Engineering (2004-present).
- 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 the first authors)

390. Qu, Z., Tang, Z., Liu, F., Sablani, S.S., Ross, C.F., Sankaran, S., Tang, J.*, 2021. Quality of Green Beans (Phaseolus vulgaris L.) Influenced by Microwave and Hot Water Pasteurization, *Food Control, 124, 107936, https://doi.org/10.1016/j.foodcont.2021.107936.*
389. Hong, Y.K., Stanley R., Tang, J.*, Bui, L., Ghandi, A., 2021. Effect of electric field distribution on the heating uniformity of a model ready-to-eat meal in microwave-assisted thermal sterilization using the FDTD method, *Foods, 10, 311, https://doi.org/10.3390/foods10020311.*
388. Hong, Y.K., Liu, F., Tang, Z., Pedrow, P.D., Sablani, S.S., Yang, R., Tang, J.*, 2021. A simplified approach to assist process development for microwave assisted pasteurization of packaged food products. *Innovative Food Science& Emerging Technologies, 68, https://doi.org/10.1016/j.ifset.2021.102628.*
387. Alshammari, J., Dhowlaghar, N., Xie, Y., Xu, J., Tang, J.*, Sablani, S.S., Zhu, M.J. 2021. Survival of *Salmonella* and *Enterococcus faecium* in high fructose corn syrup and honey at room temperature (22ºC), *Food Control,* 114. *https://doi.org/10.1016/j.foodcont.2020.107765.*
386. Zhang, Y., Li, S., Jin, S., Li, F., Tang, J., Yang, J. 2021. Radio frequency tempering multiple layers of frozen tilapia fillets: the temperature distribution, energy consumption, and quality. *Innovative Food Science and Emerging Technologies 68:102603. https://doi.org/10.1016/j.ifset.2021.102603.*
385. Perez-Reyes,M.E., Tang, J.*, Zhu, M.J., Barbosa-Canovas, G,V., Zhu, M.J. 2021. The influence of elevated temperature and composition on the water activity of egg powders, *https://doi.org/10.1111/jfpp.15269.*
384. Perez-Reyes,M.E., Tang, J.*, Barbosa-Canovas, G,V., Zhu, M.J. 2021. Influence of water activity and dry-heating time on egg white powders quality. *LWT-Food Science and Technology 140*:110717. *https://doi.org/10.1016/j.lwt.2020.110717.*
383. Xie, Y., Cheng, T., Wei, L., Zhu, M.J., Sablani, S., Tang, J*. 2021. Thermal inactivation of *Salmonella* Enteritidis PT 30 in ground cinnamon as influenced by water activity and temperature/ Food Control, 124, 107935, *https://doi.org/10.1016/j.foodcont.2021.107935.*
382. Xie, Y., Yang, R., Alshammari, J., Zhu, M.J., Sablani, S., Tang, J*. 2021. Moisture content of bacterial cells determines thermal resistance of *Salmonella enterica serotype* Enteritidis PT 30. Applied and Environmental Microbiology 87, e02194-20. *https://doi.org/10.1128/AEM.02194-20*.

381. Guan, J., Lacombe, A., Tang, J.*, Bridge, F., Sablani, S., Rane, B., Wu, J. 2021. Use of mathematic models to describe the microbial inactivation on baby carrots by gaseous chlorine dioxide. *Food Control, 123. https://doi.org/10.1016/j.foodcont.2020.107832.*

380. Wang, W., Tang, J., Zhao, Y. 2021. Investigation of hot-air assisted continuous radio frequency drying for improving drying efficiency and reducomg shell cracks for inshell hazelnuts: the relationship between cracking level and nut quality. *Food and Bioproducts Processing,* 125:46-56. *https://doi.org/10.1016/j.fbp.2020.10.013.*

379. Yang, R., Xie, Y., Lombardo, S.P., Tang, J.*, 2021. Oil protects bacteria from humid heat in thermal processing, *Food Control, https://doi.org/10.1016/j.foodcont.2020.107690.*

378. Patel, J., Sonar, C. R., Al-Ghamdi, S., Tang, Z., Yang, T., Tang, J., Sablani, S. S. 2021. Influence of ultra-high barrier packaging on shelf-life of microwave assisted thermal sterilized chicken pasta, *LWT-Food Science and Technology 136*:110287 *https://doi.org/10.1016/j.lwt.2020.110287.*

376. Montero, M.L., Sablani, S. S., Tang, J., Ross, C.F. 2020. Characterization of the sensory, chemical, and microbial quality of microwave-assisted, thermally pasteurized fried rice during storage. *Journal of Food Scien*ce, 85(9): 2711-2719.

375. Patel, J., Parhi, A., Al-Ghamdi, S., Sonar, C. R., Mattinson, D.S., Tang, J., Yang, T., Sablani, S. S. 2020. Stability of vitamin C, color, and garlic aroma of garlic mashed potatoes in polymer packages processed with microwave-assisted thermal sterilization technology. *Journal of Food Science.* Published online: 13 August, 2020.

374. Quintanilla, A., Mencia, A., Powers, J., Rasco, B., Tang, J., Sablani, S.S. 2020. Developing vacuum-impregnated dehydrofrozen red raspberries with improved mechanical properties. *Drying Technology*. *https://doi.org/10.1080/07373937.2020.1789654.*

373. Perez-Reyes, M.E., Jie, X., Zhu, M.J., Tang, J.* 2020. Influence of low water activity on the thermal resistance of Salmonella Enteritidis PT30 and Enterococcus faecium as its surrogate in egg powders. *Food Science and Technology International*

372. Chen, Y., He, J., Li, F., Tang, J., Jiao, Y. 2020. Model food development for tuna (*Thunnus Obesus*) in radio frequency and microwave tempering using grass carp mince. *J. Food Engineering*, 292: https://doi.org/10.1016/j.jfoodeng.2020.110267.

371. Xu, J., Song, J., Tan, J., Villa-Rojas, R., Tang, J.* 2020. Dry-inoculation methods for low-moisture foods. *Trends in Food Science & Technology 103: 68-77.*

370. Zhu, M., Song, X., Shen, X., Tang, J. 2020. Listeria monocytogenes in almond meal: desiccation stability and isothermal inactivation. *Frontiers in Microbiology*.

369. Zhang, R., Li, F., Tang, J., Koral, T., Yang, J. 2020. Improved accuracy of radio frequency (RF) heating simulations using 3D scanning techniques for irregular-shape food. LWT: *https://doi.org/10.1016/j.lwt.2019.108951*

368. Zhang, Y., Xie, Y., Tang, J., Wang, S., Wang, L., Zhu, G., F., Liu, Y. 2020. Thermal inactivation of *Cronobacter sakazakii* ATCC 29544 in powdered infant formula milk using thermostatic radio frequency. *Food Control, 114: https://doi.org/10.1016/j.foodcont.2020.107270.*

367. Sonar, R., Parhi, A., Liu, F., Rasco, B., Tang, J., Sablani, S. 2020. Investigating thermal and storage stability of vitamins in pasteurized mashed potatoes packed in barrier packaging films. *Food Packaging and Shelf Life, 24, https://doi.org/10.1016/j.fpsl.2020.100486.*

366. Kumar, P.K., Joyner, H.S., Tang, J., Rasco, B.A., Sablani. S.S. 2020. Kinetics of Starch Retrogradation in Rice (*Oryza sativa*) Subjected to State/Phase Transitions. *Food and Bioprocess Technology, https://doi.org/10.1007/s11947-020-02488-9.*

365. Parhi, A., Tang, J., Sablani, S. 2020. Functionality of ultra-high barrier metal oxide-coated polymer films for in-package, thermally sterilized food products. *Food Packaging and Shelf*

Life.25: https://doi.org/10.1016/j.fpsl.2020.100514.

364. Inanoglu, S., Barbosa-Canovas, G.V., Patel, J., Zhu, M.J., Sablani, S.S., Liu, F., Tang, Z., Tang, J.* 2021. Impact of high-pressure and microwave-assisted thermal pasteurization on inactivation of *Listeria innocua* and quality attributes of green beans, *J. Food Eng.,* 288.
363. Yang, R., Xu, J., Lombardo, S.P., Ganjyal. G.M., Tang, J.* 2020. Desiccation in oil protects bacteria in thermal processing. *Food Research International 137* https://doi.org/10.1016/j.foodres.2020.109519.
362. Yang, R., Guan, J., Sicheng, S., Sablani, S.S., Tang, J.* 2020. Understanding water activity change in oil with temperature. *Current Research in Food Science* 3:158-165. *https://doi.org/10.1016/j.crfs.2020.04.001.*
361. Alshammari, J., Xu, J., Tang, J.*, Sablani, S.S., Zhu, M.J. 2020. Thermal resistance of Salmonella in low-moisture high-sugar products, *Food Control* 114. *https://doi.org/10.1016/j.foodcont.2020.107255.*
360. Wang, W., Wang, W., Jung, J., Yang, R., Tang, J., Zhao, Y. 2020. Investigation of hot-air assisted radio frequency (HARF) dielectric heating for Improving drying efficiency and ensuring quality of dried hazelnuts (corylus avellana L.). *Food and Bioproducts Processing 120:179-190.*
359. Wang, W., Wang, W., Wang, Y., Yang, R., Tang, J., Zhao, Y. 2020. Hot-air assisted continuous radio frequency heating for improving drying efficiency and retaining quality of inshell hazelnuts (*Corylus avellana* L. cv. Barcelona). *J. Food Eng.* 279:
358. Ballom, K.F., Tsai, H.C., Taylor M., Tang, J., Zhu, M.J. 2020. Stability of Listeria monocytogenes in non-fat dry milk powder during isothermal treatment and storage. *Food Microbiology* https://doi.org/10.1016/j.fm.2019.103376.
357. Barnett, S.M., Sablani, S.S., Tang, J., Ross, CF. 2020. The potential for microwave technology and the ideal profile method to aid in salt reduction. *Food Science* https://doi.org/10.1111/1750-3841.15034.
356. Jin, Y., Tang, J.*, Zhu, M.J. 2020. Water activity influence on the thermal resistance of Salmonella in soy protein powder at elevated temperatures. *Food Control* https://doi.org/10.1016/j.foodcont.2020.107160.
355. Xu, J., Shah, D.H., Song, J., Tang, J*. 2020. Changes in cellular structure of heat-treated Salmonella in low-moisture environment. *J. Applied Microbiology* https://doi.org/10.1111/jam.14614 .
354. Xu, J., Yang R., Jin, Y., Barnett, G., Tang, J*. 2020. Modeling the temperature-dependent microbial reduction of *Enterococcus faecium* NRRL B-2354 in radio-frequency pasteurized wheat flour, *Food Control*, https://doi.org/10.1016/j.foodcont.2019.106778.
353. Li, S., Li, F., Tang, J., Koral, T., Jiao, Y. 2019. Influence of composition, temperature, and frequency on dielectric properties of selected saltwater and freshwater fish. *International Journal of Food Properties 116:90-102.*
352. Parhi, A., Bhunia, K., B Rasco, B., Tang, J., Sablani, S.S. 2019. Development of an oxygen sensitive model gel system to detect defects in metal oxide coated multilayer polymeric films, *Journal of Food Science 84(9):2507-2519.*
351. Barnett, S.M., Sablani, S.S., Tang, J., Ross, CF. 2019. Utilizing herbs and microwave-assisted thermal sterilization to enhance saltiness perception in a chicken pasta meal, *J. Food Sci.84(8):2313-2324.*
350. Patel. J., Parhi, A., Sonar, C.R., Mattinson, D.S., Tang. J., Yang. T., and Sablani, S.S. 2020. Stability of vitamin C, color, and garlic aroma of garlic mashed potatoes in polymer packages processed with microwave-assisted thermal sterilization technology. *Food Science.* https://doi.org/10.1111/1750-3841.15366.

349. Patel, J., Al-Ghamdi, S., Zhang, H., Queiroz, R., Tang, J., Yang, T., Sablan, S.S. 2019. Determining shelf life of ready-to-eat macaroni and cheese in high barrier and oxygen scavenger packaging sterilized via microwave-assisted thermal sterilization. *Food and Bioprocess Technology 12(9):1516-1526.*
348. Sonar, C. R., Rasco, B., Tang, J., Sablani, S. S. 2019. Natural color pigments: Oxidative stability and degradation kinetics during storage in thermally pasteurized vegetable purees. *Journal of the Science of Food and Agriculture 99:5934-5945.*
347. Jin, Y., Tang, J.*, Sablani, S.S. 2019. Food component influence on water activity of low-moisture powders at elevated temperatures in connection with pathogen control. *LWT 112, https://doi.org/10.1016/j.lwt.2019.108257.*
346. Muñoz, N., Sonar, CR., Bhunia, K., Tang, J., Barbosa-Cánovas, GV., Sablani, SS. 2019. Use of protective culture to control the growth of Listeria monocytogenes and Salmonella typhimurium in ready-to-eat cook-chill products. *Food Control 102:81-86.*
345. Zhang, H. Patel, J., Bhunia, K., Al-Ghamdi, S., Sonar. C. Ross, C., Tang, J. Sablan, S.S. 2019. Color, vitamin C, β-carotene and sensory quality retention in microwave assisted thermally sterilized sweet potato puree: Effects of polymeric package gas barrier during storage. *Food Packaging and Shelf Life: 21:*
344. Ozturk, S., Liu, S., Xu, J., Tang, J., Chen, J., Singh,,RK., Kong F. 2019. Inactivation of Salmonella Enteritidis and Enterococcus faecium NRRL B-2354 in corn flour by radio frequency heating with subsequent freezing, *LWT 111: 782-789.*
343. Jin, Y., Tang, J.* 2019. Improved design of aluminum test cell to study the thermal resistance of *Salmonella enterica* and *Enterococcus faecium* in low-water activity foods. *Food Control 104:343-348.*
342. Sonar, C. R., Paccola, C. S., Al-Ghamdi, S., Rasco, B., Tang, J., Sablani, S. S. 2019. Stability of color, *β*-carotene, and ascorbic acid in thermally pasteurized carrot puree to the storage temperature and gas barrier properties of selected packaging films. *Journal of Food Process Engineering* e13074. *https://doi.org/10.1111/jfpe.13074.*
341. Wang, J., Tang, J.*, Park, J.W., Rasco, B., Liu, F., Qu, Z., 2019. Thermal gelation of pacific whiting surimi in microwave assisted pasteurization. *J. Food Engineering 258:18-26.*
340. Al-Ghamdi, A., Rasco, B., Tang, J., Barbosa-Canovas, G.V., Sablani, SS. 2019. Role of package headspace on multilayer films subjected to high hydrostatic pressure. *Packaging Technology and Science 32:247-257*.
339. Pokhrel, P.R., Toniazzo, T., Boulet, C., Oner, M.E., Sablani, S., Tang, J., Barbosa-Cánovas, G.V. 2019. Inactivation of Listeria innocua and Escherichia coli in carrot juice by combining high pressure processing, nisin, and mild thermal treatments. *Innovative Food Science & Emerging Technologies 54:93-102.*
338. Tsai, H.C., Ballom, K.F., Xia, S., Tang, J., Marks, B.P., Zhu, M.J. 2019. Evaluation of Enterococcus faecium NRRL B-2354 as a surrogate for Salmonella during cocoa powder thermal processing. *Food Microbiology* 82:135-141.
337. Tsai, H.C., Taylor, M.H., Song, X., Shen, L., Tang, J. Zhu, M.J. 2019. Thermal resistance of *Listeria monocytogenes* in natural unsweetened cocoa powder under different water activity. *Food Control 102:22-28.*
336. Kumar, P.K.K., Bhunia, K., Tang, J., Rasco, B.A., Takhar, P., Sablani. S.S. 2019. State/phase transitions induced by ice recrystallization and its influence on the mechanical properties of potatoes (*Solanum tuberosum L.*) Var. Russet Brown. *J. Food Eng*. 251:45-56.

335. Jain, D., Tang, J.*, Pedrow, P., Tang, Z., Sablani, S., Hong, Y. 2019. Effect of changes in salt content and food thickness on electromagnetic heating of rice, mashed potatoes and peas in 915 MHz single mode microwave cavity. *Food Research International 119:584-595.*
334. Munoz, N., Sonar, C.R., Bhunia, K., Tang, J., Barbosa-Canovas, G.V., Sablani, S.S. 2019. Use of protective culture to control the growth of *Listeria monocytogenes* and *Salmonella* typhimurium in ready-to-eat cook-chill products. *Food Control 102:81-86.* 333.
333. Zhu, Y., Li, F., Tang, J., Wang, T.T., Jiao, Y. 2019. Effects of radio frequency, air and water tempering, and different end-point tempering temperatures on pork quality. J. Food Process Engineering 42(4), e13026.
332. Qiu, L., Zhang, M., Tang, J., Adhikari, B., Cao, P. 2019. Innovative technologies for producing and preserving intermediate moisture foods: review. *Food Research International 116:90-102.*
331. Xu, J., Tang, J.*, Jin, Y., Song, J., Yang, R., Sablani, S.S., Zhu, M.J. 2019. High temperature water activity as a key factor influencing survival of *Salmonella* Enteritidis PT30 in thermal processing. *Food Control 98:520-528.*
330. Liu, S., Xu, J., Xie, L., Zhu, M.J., Tang, J.* 2019. Dry inoculation methods for non-fat milk powder *J. Dairy Science 102:77-86.*
329. Tang, J.*, Hong, Y.K., Inanoglu, S., Liu, F. 2018. Microwave pasteurization for ready-to-eat meals. *Current Opinion in Food Science 23:133-141.*
328. Ovissipour, M., Shiroodi, S.G., Rasco, B., Tang, J., Sablani, S.S. 2018. Electrolyzed water and mild-thermal processing of Atlantic salmon (Salmo salar): Reduction of Listeria monocytogenes and changes in protein structure. *International Journal of Food Microbiology 276: 10-19.*
327. Jain, D., Tang, J.*, Liu, L., Tang, Z., Pedrow, P.D. 2018. Computer evaluation of food carrier designs to improve heating uniformity in microwave assisted thermal pasteurization. *Innovative Food Science and Emerging Technologies 48:274-286.*
326. Niu, L., Sun, X., Tang, J., Wang, J., Wang, J., Rasco, B.A., Lai, K., Fan, X., Huang, Y. 2018. Combination effects of salts and cold storage on the formation of protein-bound N^{ε}-(carboxymethyl) lysine and N^{ε}-(carboxyethyl) lysine in in raw and subsequent commercially sterilized ground pork. *Food Chemistry 264:455-461.*
325. Taylor, M.H., Tsai, H, Rasco, B., Tang, J., Zhu, M.J. 2018. Stability of Listeria monocytogenes in wheat flour during extended storage and isothermal treatment. *Food Control 91:434-439.*
324. Li, Y., Li, F., Tang, J., Zhang, Z., Wang, Y.Y., Koral, T., Yang, J., 2018. Radio frequency tempering uniformity investigation of frozen beef with various shapes and sizes. *Innovative Food Science and Emerging Technologies 48:42-55.*
323. Pongpichaiudom, A., Songsermpong, S., Tang, J., Sablani, S. 2018. Modelling the dielectric and thermal properties of protein-enriched instant noodles as a function of food chemical composition. *International Journal of Food Engineering 14 (5-6).*
322. Auksornsri, T, Bornhorst, E., R., Tang, J.*, Tang, Z., Songsermpong, S. 2018. Developing model food systems with rice based products for microwave assisted thermal sterilization. *LWT- Food Science and Technology 96:551-559.*
321. Auksornsri, T., Tang, J.*, Tang, Z., Lin, H., Songsermpong, S. 2018. Dielectric properties of rice model food systems relevant to microwave sterilization process. *Innovative Food Science and Emerging Technologies 45: 98-105.*
320. Jiao, Y., Tang, J.*, Wang, Y., Koral, T.L. 2018. Radio-frequency applications for food processing and safety. *Annual Review of Food Science and Technology 9: 105-127.*
319. Kumar, P.K., Bhunia, k., Tang, J., Rasco, BA, Takhar, P.S., Sablani, S. 2018. Thermal transition and thermo-physical properties of potato (*Solanum tuberosum L.*) var. Russet brown, *Journal of Food Measurement and Characterization 12 (3): 1572-1580.*

318. Ovissipour, M., Liu, C., Unlu, G., Rasco, B., Tang, J., Sablani, S. 2018. Quality changes in chum salmon (Oncorhynchus keta) caviar (ikura) affected by thermal pasteurization, storage time, and packaging material, *Journal of Aquatic Food Product Technology 27 (2), 200-210.*
317. Wang, J., Tang, J.*, Liu, F., Bohnet, S. 2018. A new chemical marker-model food system for heating pattern determination of microwave- assisted pasteurization processes, *Food and Bioprocess Technology 11:1274-1285.*
316. Wang, J., Tang, J.*, Rasco, B., Sablani, S.S., Ovissipour M., Qu, Z. 2018. Kinetics of quality changes of shrimp (*Litopenaeus setiferus*) during pasteurization. *Food and Bioprocess Technology 11(5):1027-1038*.
315. Tadapaneni, R.K., Xu, J., Yang, R., Tang, J.* 2018. Improving design of thermal water activity cell to study thermal resistance of *Salmonella* in low-moisture foods. *LWT-Food Science and Technology 92:371-379.*
314. Quintanilla, A., Mencia, A., Powers, J., Rasco, B., Tang, J., Sablani, S.S. 2018. Vacuum impregnation of firming agents in red raspberries, *J. Science of Food and Agriculture 88:3706-3714.*
313. Liu, S., Rojas, R.V., Gray, P., Zhu, M.J., Tang, J.*, 2018. *Enterococcus faecium* as a *Salmonella* surrogate in the thermal processing of wheat flour: influence of water activity at high temperatures. *Food Microbiology 74:92-99.*
312. Liu, S., Tang, J.*, Tadapaneni, R., Yang, R., Zhu, MJ. 2018. Exponentially increased thermal resistance of *Salmonella* and *Enterococcus faecium* at reduced water activity, *Applied and Environmental Microbiology 84(8):e02742-17.*
311. Liu, S., Ozturk, S., Xu, J., Kong, F., Gray, P., Zhu, M.J., Sablani, S. Tang J.* 2018. Microbial validation of radio frequency pasteurization of wheat flour by inoculated pack studies. *J. Food Engineering 217: 68-74.*
310. Xu, J., Liu, S., Tang, J.*, Ozturk, S., Kong, F., Shah, D.H. 2018. Application of freeze-dried *Enterococcus faecium* NRRL B-2354 in radio-frequency pasteurization of wheat flour. *LWT-Food Science and Technology 90: 124-131.*
309. Xu, J., Liu, S., Song, J., Tang, J.*, Zhu, M.J., Gray, P., Villa-Rojas, R. 2018. Dry-inoculation method for thermal inactivation studies in wheat flour using freeze-dried *Enterococcus faecium* NRRL B-2354. *LWT-Food Science and Technology 89: 10-17.*
308. Zhang, M., Chen, H., Mujumdar, A.S., Tang, J., Miao, S., Wang, Y. 2017. Recent developments in high-quality drying of vegetables, fruits and aquatic products. *Critical Reviews in Food Science and Nutrition 57(6):1239-1255.*
307. Tadapaneni, R.K, Yang R., Carter, B., Tang, J.* 2017. A new method to determine the water activity and the net isosteric heats of sorption for low moisture foods at elevated temperatures. *Food Research International 102:203-212.*
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* *Senior author (see definition in the promotion manual of the College of Agric. and Home Economics, WSU, April, 2002).*

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3. Tang, J., Liu F. 2017, Microwave Sterilization or Pasteurization-Systems, ***US Patent No. 9,642,385 B2*** (*filed on 10/14/2015, granted 5/9/2017. Patent application filed in China-granted in Sept. 2019, Australia, Brazil, Canada, India, Israel, Japan, Mexico, South Korea, Thailand, and Europe).*
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7. Tang, J., Liu, F. 2020. Microwave Sterilization or Pasteurization Transport Carrier, ***US Patent No.10,681923*** *(Filed on 3/1/2018, WSU Ref:12770079AA/TA, WSU OC1783, granted 6/16/2020)*.
8. Tang, J., Liu, F. 2020. Microwave Sterilization or Pasteurization, ***Japanese Patent No. 6671297*** *(filed on 5/6/2015, granted 3/5/2020).*

9. Tang, J., Liu, F. 2020. Microwave Sterilization or Pasteurization, ***European Patent,*** filed from the PCT/US15/29468 patent on 5/6/2015, assigned Registration Serial Number 15789133.4, claims allowed per notification received on 3/30/2020. Covered countries: UK, Germany, Italy, France, Netherlands, Turkey, and Spain.
10. Tang, J., Liu, F. 2020. Microwave Sterilization or Pasteurization, ***Canadian Patent No. CA2947053***, (filed on 5/6/2015, issued on Nov. 17, 2020).
11. Tang, J., Liu, F. 2020. Microwave Sterilization or Pasteurization, ***Australian Patent No. 2015256068*** **(**filed on 5/6/2015, issued on Nov. 26, 2020, term of patent 20 yrs from 2015).

PATENTS (Pending US and International Applications)

1. The Brazilian patents entitled "Microwave Sterilization or Pasteurization," filed from the PCT/US15/29468 patent on 5/6/2015, and assigned Registration Serial Number BR 11 2016 025733-2.
2. The Indian patents entitled "Microwave Sterilization or Pasteurization," filed from the PCT/US15/29468 patent on 5/6/2015, and assigned Registration Serial Number 201617039945.
3. The Israel patents entitled "Microwave Sterilization or Pasteurization," filed from the PCT/US15/29468 patent on 5/6/2015, and assigned Registration Serial Number 248663.
4. The Mexican patents entitled "Microwave Sterilization or Pasteurization," filed from the PCT/US15/29468 patent on 5/6/2015, and assigned Registration Serial Number MX/a/2016/013842
5. 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.
6. 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.
7. The Chinese patents entitled "Microwave Sterilization or Pasteurization Transport Carriers," filed from the PCT/US2018/020168 application]
8. The European patents entitled "Microwave Sterilization or Pasteurization Transport Carriers," filed from the PCT/US2018/020168 application]
9. 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.
10. 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)*.

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11. Tang, J. Luan, D., Liu, F. New field domestic microwave oven (US *Patent, provisional filing made on July 9, 2015*).
12. 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*.
13. 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 serioal number

88/324354 for Microwave Assisted Pasteurization Systems.

OVER 300 CONFERENCE PRESENTATIONS (not listed here)

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 Dissetation Title, and Awards**	**Degree Program**	Starting – or **Graduation Date (-Expected)**	**Position after graduation**
54. Zhou Xu	Food Engineering supported by CSC	PhD.	1/2020	
53. Sicheng Sun	Low moisture food safety supported by CSC	PhD.	8/2018	
52. Yucen Xie	Microwave pasteurization supported by CSC	PhD.	1/2018	
51. Sumeyye Inanoglu	Microwave processing	PhD.	8/2017 Prelim:4/2020	
50. Gezahegn Yonas	Microwave pasteurization	PhD.	8/2017	
49. Jiewen Guan	Low Moisture Food Safety jointly with USDA ARS	PhD.	8/2017 Prelim: 12/2018	
48. Qu Zhi	Microwave Processing supported by CSC	PhD	8/2016-	
47. Yuqiao Jin	Low Moisture Foods Safety PhD. *Intern at Nestle Food, Summer 2019*	PhD.	8/2016- 1/30/2020	Mérieux NutriSciences, Chicago
46. Yoon Ki Jong	Microwave Processing *Intern at Australia Department of Defense Food Lab, summer 2020*	PhD.	8/2016- Prelim:3/2020	
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	8/2015-02/2020	*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	*Post-Doct., Washington 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- 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.	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.	2013-10/2017	**Associate Professor** Sichuan Agricultural University, China
40. Ravi Kiran Tapapaneni	RF processing	Ph.D.	1/2013-12/2017	**Food Engineering Manager**, Impossibe Foods, CA
39. Deepali Jain	Microwave processing	Ph.D.	1/2013- 12/2017	**Senior Vice President**, Food Security, Sync Energy Inc. New York, deepali@sync.energy
38. Jungang Wang	Food quality through thermal processing *CSC Scholarship*	PhD.	M.S. 1/2014-1/2018	**Senior Process Engineer**, Campbell Soup
	Salt diffusion in food during thermal processing *2013 IFT Puget Sound Travel Award* *2013 NASA Summer Fellow*		M.S. 1/2012-5/2013	1/2012-5/2013
37. Hongchao Zhang	Food Packaging Jointly with Dr. Sablani	PhD.	/2013-11/2016	Post-doctorate fellow University of Maryland
36. Ellen Bornhorst	Microwave heating *USDA National Need Scholarship* *2010 IECEF Paper Award* *2015 NASA Intern*	PhD.	M.S. /2013-12/2015	**Senior Research Engineer**, erbornhorst@gmail.com Pepsi-Cole
	Salt diffusion in food during thermal processing *2013 IFT Puget Sound Travel Award* *2013 NASA Summer Fellow*		M.S. 1/2012-5/2013	1/2012-5/2013
35. Rossana Villa	RF Processing *Mexican Scholarship (CONACYT)*	Ph.D.	/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.	/2012-5/2013	WSU PhD Student
33. **Rajat Tyagi**	MW Engineering, modeling, energy efficiency, engineering scaling-up *2012 IFT Puget Sound Travel Award*	Ph.D.	(08/2013)	Withdraw
32. **Wenjia Zhang**	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*	Ph.D.	05/2015	Senior Research Scientist, zhangatko@gmail.com Coca Cola, USA

31. Yage Shi	Food kinetics in short thermal processing, **jointly** with Northwest University of Agriculture and Forestry, ***China Scholarship Council support***	Ph.D.	(01/2013)	**Assistant Professor,** Northwest University of Agriculture and Forest, China
30. **Donglei Luan**	Microwave heating/Computer Simulation *China Scholarship Council support* *2013 IFT Puget Sound Outstanding Student Award*	Ph.D.	08/2014	**Associate Professor**, Shanghai Ocean University, Shanghai, China
29. **Jiao Yang**	MW sterilization energy efficiency *China Scholarship Council Support* *2012 IFT Puget Sound Outstanding Student Award* *2013 IFT Puget Sound Travel Award*	Ph.D.	07/2014	**Associate Professor**, **Department Chair**. Shanghai Ocean University, Shanghai, China (yjiao@shou.edu.cn)
28. **Jing Peng**	Microwave pasteurization-quality kinetics *China Scholarship Council (CSC) Support* *2013 IFT Puget Sound Travel Award*	Ph.D.	12/2013	**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 JiaoTong University
26. **Ofero A Caparino**	Drying technologies for tropic fruits ***scholarships 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 Engineering Philippine Center for Post-Harvest Development and Mechanization, CLSU Compound, Science City of Munoz, Nueva Ecija 3120 Philippines Tel. +63444560213 Email. Ofero.caparino@email.wsu.edu Ofero1058@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**	Dielectric properties of solid powders ***Supported by scholarships from Saudi Arabia Government***	M.S.	05/2011	Faculty, King Saud University, Kingdom of Saudi Arabia
21. **Balunkeswar Nayak**	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*	PhD.	01/2011	**Associate Professor**, University of Maine
20. Ho Ki Lee	Coupled heat and EM simulation jointly with Professor Ben Li, MME	M.S.	03/2005	
19. **Gopal Tiwari**	Postharvest pest and m/o control with RF ***2009 IFT Food Engineering Paper 1st place award***	Ph.D.	04/2010	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	**Associate 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 Ashami**	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. Powers	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 nationwide for R&D activities related to military rations and packaging***	Ph.D.	2005	**Principle Scientist** Kunchalee.Luechapattanapor n@pepsico.com PepsiCo, 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 Assurance Bumble Bee Seafoods 13006 Arctic Circle · Santa Fe Springs · CA 90670 Mobile: 001-562-322-4660 (Preferred) Fax: 001-858-694-9523 Office: 001-562-207-1307 Email: 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. Brendan Abonyi	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	
52 Teng Cheng	Low moisture food	9/2019-	PhD Student at Northwest A&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 Li	Food Packaging	11/14-11/15	Shanghai University of Technology	Associate Professor, Shanghai Ocean University, Shanghai, China
45.Xue Dong Yao	RF Drying	9/14-9/15	China Agricultural University	Associate 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 Shi	RF processing	5/2013-8/2014		PhD. Student, China Agriculture University
39. Shunshan Jiao	RF Processing		WSU	
		8/2012-8/2013		Assistant 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 Uprit	MW pasteurization ***Fulbright Scholar***	8/2010-4/2011	IIT, Kharagpur, India	Prof, Chair Dept. Diary Technology College of Diary Technology, Raipur, India
34. Haihua Cong	MW processing of seafoods, *visiting student*	1/2010-9/2010 11/2011-		China Ocean University, Qingdao, China
33. Baher M. A. Amer	RF drying, ***Fulbright Scholar***	8/09-2/2010	Humboldt University Berlin, Germany	Assistant Professor, Cairo University Food Science Department, Yangtze University,
32. Mengxiang Gao,				

	RF heating *Sabbatical leave*	02-2010 06/09-	JiangXu University, China	Associate Professor, Department of Food Engineering, College Life Science, Yangtze University, Jingzhou, Hubei, China, 434025
31. Rossana Villa	RF heating *visiting student*	01/09-		University of America, Mexico
30. Su-Der Chen	RF heating *Sabbatical leave*	5/2010 08/08- 12/08	Michigan State University	Professor, Department of Food Science National 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 College Northwest A&F University, Yangling, Shaanxi, China
28. Ram Pandit	Thermal processing- *Post Doc*	05/08- 09/08	WSU	Frito-Lay, Research Engineer
27. Du Kang	Food Processing *Sabbatical leave*	05/07- 12/08	Lurven University, Belgium	Professor, Head of Food Science Department, Nanjing Agricultural University, Nanjing, China
26. Zeng Ruan	Dairy processing *Sabbatical leave*	8/07-12/07	South China University of Science and Tech.	Associate Professor , South China University of Science and Tech., QuangZhou, China
25. Yulin Ji	Extrusion – *Post Doc*	5/07-6/08	Iowa State University	Pepsi-Cole R&D Center, USA
24. Maria Elena Sosa Morales	Mango treatment with RF - *Sabbatical leave*	5/07-8/07	Instituto Tecnologico de Veracruz of Mexico	Assistant Professor Department of Food Engineering University of America, Mexico
23. Wenchuan Guao	Dielectric properties *Sabbatical leave*	1/07-5/07	Northwest University of Agricultural and Forestry	Professor, Associate Dean of Agricultural Engineering Northwest 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 Professor Department of Food and Biotechnology, Korea University 518B College of Science and Technology, Sejong Campus, Jochiwon-eup Yeongi-gun, Chungnam 339-700, South Korea E-mail : nextbio@korea.ac.kr, C.P: 82-10-9164-4987 Tel: 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		06-07	Ph.D, WSU	Principal Research Scientist

	Mash room soups-*Post Doc*			Breakthrough Science/Innovation/RQI Six ConAgra Drive, Omaha, NE 68102 Phone : 402-240-6184 Cell : 402-639-4454 Sohan.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 Institute of	Cargill, MN
8. Frank Liu	Microwave sterilization – *Post Doc*.	2001-	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 Chemist Indium Corporation of America Clinton, 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

Google Scholar Juming Tang, 2/05/2020		
Citation indices	All	Since 2016
Citations	24385	12557
h-index	89	55
i10-index	330	270

2918 citations in 2020