

Assistant Professor Thanyaporn Siriwoharn, Ph.D.

FOOD SCIENCE AND TECHNOLOGY, FACULTY OF AGRO-INDUSTRY, CHIANG MAI UNIVERSITY

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Education

Ph.D. Food Science and Technology	Oregon State University, USA
M.S. Food Science and Technology	Oregon State University, USA
B.S. Food Science and Technology (1 st class honors)	Chiang Mai University, Thailand

Experience

Lecturer Faculty of Agro-Industry, Chiang Mai University, Thailand	2014 - Present
Business Development Manager Asia Pacific Naturex, France	2010 - 2014
Business Development Manager Asia Pacific Natraceutical Group, Spain	2007 - 2009
Product Development Manager RFI Ingredients, USA	2005 - 2006
Faculty Research Assistant Department of Food Science and Technology, Oregon State University, USA	2004

Research Interest

Phytochemicals, bioactive protection, functional customization, odor minimization, agricultural by-product valorization

Publications

- Muangrat, R., Chalermchat, Y., Jirattananang, W., Siriwoharn, T., Boonyapranai, K., & Wiriyaacharee, P. (2026). Development of oleogels from supercritical CO₂-extracted bee brood oil combined with palm oil, coconut oil, and commercial oleogelators. *Applied Food Research*, 6(1), 101582.
- Eze, F.N., Muangrat, R., Jirattananang, W., Siriwoharn, T., & Chalermchat, Y. (2025). Sustainable production of chitin from supercritical CO₂ defatted domestic cricket (*Acheta domesticus* L.) meal: One-Pot preparation, characterization, and effects of different deep eutectic solvents. *Polysaccharides*, 6(4), 115.
- Lwin, S., Surawang, S., & Siriwoharn, T. (2025). Deodorization of spirulina extracts by ozone and activated carbon: Effects on volatile organic compounds, bioactive pigments, antioxidant activity, and sensory profile. *Foods*, 14(22), 3820.
- Eze, F. N., Muangrat, R., Jirattananang, W., Siriwoharn, T., & Chalermchat, Y. (2025). Sesame seed meal as a sustainable source of high-quality plant-based proteins: Delineating recent advances in the preparation, composition, techno-functionalities, and food industry applications. *Comprehensive Reviews in Food Science and Food Safety*, 24(3), e70188.
- Eze, F. N., Muangrat, R., Jirattananang, W., Siriwoharn, T., & Chalermchat, Y. (2025). Bio-functionalities of sesame (*Sesamum indicum* L.) seed meal and proteins: Illuminating their novel role and mechanisms as versatile functional food ingredients for health promotion. *Current Nutrition Reports*, 14(1), 103.

- Phosarith, N., Siriwoharn, T., & Jirarattanarangsri, W. (2025). Comparison of the conventional, chemical, and ultrasound extraction of crude polysaccharides and their properties from *Lentinula edodes* (Berk.) Pegler. *Foods*, 14(14), 2428.
- Eze, F. N., Muangrat, R., Jirarattanarangsri, W., Siriwoharn, T., & Chalermchat, Y. (2025). Towards sustainable production of edible cricket protein concentrates: Impact of different defatting pre-treatments and extraction methods on the structural, physicochemical, and techno-functional properties of *Acheta domesticus* L. proteins. *International Journal of Biological Macromolecules*, 146929.
- Manochai, T., Kamthai, S., & Siriwoharn, T. (2025). Comparative study of free radical grafting and alkaline conjugation for enhanced resveratrol incorporation and whey protein functionalities. *Foods*, 14(15), 2596.
- Orpool, S., Kamthai, S., Siriwoharn, T., Khaw-on, P., Deenu, A., & Naruenartwongsakul, S. (2025). Enhanced bacterial cellulose production using hempseed meal: Optimal conditions and properties. *BioTech*, 14(3), 66.
- Muangrat, R., Chalermchat, Y., Jirattanarangsri, W., Siriwoharn, T., Phongphisutthinant, R., Chaipoot, S., & Wiriyaacharee, P. (2025). Supercritical CO₂-extracted oil from tray-dried and freeze-dried bee brood: Physicochemical properties and oleogelation potential. *Applied Food Research*, 101248.
- Pothinam, S., Putpim, C., Siriwoharn, T., Jirarattanarangsri, W. 2025. Effects of perilla seed oil on blood lipids, oxidative stress, and inflammation in hyperlipidemic rats. *Foods*, 14(8), 1380.
- Pothinam, S., Siriwoharn, T., Jirarattanarangsri, W. 2025. Optimization of perilla seed oil extraction using supercritical CO₂. *Quality Assurance and Safety of Crops & Foods*, 17(1), 14-29.
- Wiriyaacharee, P., Chalermchat, Y., Siriwoharn, T., Jirarattanarangsri, W., Tangjaidee, P., Chaipoot, S., Phongphisutthinant, R., Pandith, H., Muangrat, R. 2024. Utilizing supercritical CO₂ for bee brood oil extraction and analysis of its chemical properties. *Foods*, 13(16):2486.
- Eze, F.N., Muangrat, R., Singh, S., Jirarattanarangsri, W., Siriwoharn, T., Chalermchat, Y. 2024. Upcycling of defatted sesame seed meal via protein amyloid-based nanostructures: Preparation, characterization, and functional and antioxidant attributes. *Foods*, 13(14), 2281.
- Muangrat, R., Chalermchat, Y., Siriwoharn, T., Jirarattanarangsri, W., Tangjaidee, P., Pongsirikul, I., Pannasai, S. 2024. Ultrasound and low-pressure supercritical CO₂ extraction: A synergistic approach to hemp seed oil extraction. *Journal of Applied Research on Medicinal and Aromatic Plants*, 43, 100595.
- Pakkaew, Y., Jirarattanarangsri, W., Siriwoharn, T. 2024. Unlocking Nutritional potential: Extended germination boosts nutrition and phytochemicals of yellow soybean sprouts. *Proceedings of the 7th International Conference on Food and Applied Bioscience 2024, Thailand*, 230-237.
- Saiwong, S., Autsavapromporn, N., Siriwoharn, T., Techapun, C., Wangtueai, S. 2023. Enzymatic hydrolysis optimization for preparation of sea cucumber (*Holothuria scabra*) hydrolysate with an antiproliferative effect on the HepG2 liver cancer cell line and antioxidant properties. *International Journal of Molecular Sciences*, 24(11), 9491.
- Doungapai, C., Siriwoharn, T., Malila, Y., Autsavapromporn, N., Makkhun, S., Yarnpakdee, S., Jantanasakulwong, K., Regenstein, J.M., and Wangtueai, S. 2022. UV-B protective and antioxidant activities of protein hydrolysate from sea cucumber (*Holothuria scabra*) using enzymatic hydrolysis. *Frontiers in Marine Science*, 9, 892255.
- Upata, M., Siriwoharn, T., Makkhun, S., Yarnpakdee, S., Regenstein, J.M., and Wangtueai, S. 2022. Tyrosinase Inhibitory and Antioxidant Activity of Enzymatic Protein Hydrolysate from Jellyfish (*Lobonema smithii*). *Foods*, 11(4), 615.
- Somjai, C., Siriwoharn, T., Kulprachakarn, K., Chaipoot, S., Phongphisutthinant, R., Chaiyana, W., Srinuanpan, S., and Wiriyaacharee, P. 2021. Effect of drying process and long-term storage on characterization of Longan pulps and their biological aspects: Antioxidant and cholinesterase inhibition activities. *LWT*, 112692.
- Somjai, C., Siriwoharn, T., Kulprachakarn, K., Chaipoot, S., Phongphisutthinant, R., and Wiriyaacharee, P. 2021. Utilization of Maillard reaction in moist-dry-heating system to enhance

physicochemical and antioxidative properties of dried whole longan fruit. *Heliyon*, 7(5), e07094.

- Dountip, P., Kim, K.T., Hong, H.D., Ju, S.E., Choi, J.W., Siriwoharn, T., Prinyawiwatkul, W. and Sriwattana, S., 2021. Effects of immersion in fermented tea liquid and steam treatments on physicochemical properties and ginsenoside profiles of Korean ginseng. *Journal of Food Processing and Preservation*, 45(1), e15050.
- Phovisay, S., Siriwoharn, T., and Surawang, S. 2018. Effect of drying process and storage temperature on probiotic *Lactobacillus casei* in edible films containing prebiotics. *Food and Applied Bioscience Journal*, 6(Special), 105–116.
- Siriwoharn, T. and Surawang, S. 2018. Protective effect of sweet basil extracts against vitamin C degradation in a model solution and in guava juice. DOI: 10.1111/jfpp.13646. *J. Food Process Preserv.*, 42(7), e13646.
- Sriwattana, S., Pongsirikul, I. Siriwoharn, T., and Chokumnoyporn, N. 2016. Strategies for reducing sodium in instant rice porridge and its influence on sensory acceptability. *CMU J. Nat. Sci.*, 15(3), 203-212.
- Siriwoharn, T., Wrolstad, R. E., and Durst, R. W. 2005. Identification of ellagic acid in blackberry juice sediment. *J. Food Sci.*, 70(3), 189-197.
- Siriwoharn, T., Wrolstad, R. E., and Pereira, C. B. 2004. Influence of cultivar, maturity and sampling on blackberry (*Rubus* L. Hybrids) anthocyanins, polyphenolics, and antioxidant properties. *J. Agric. Food Chem.*, 52(26), 8021-8030.
- Siriwoharn, T. and Wrolstad, R. E. 2004. Polyphenolic Composition of Marion and Evergreen blackberries. *J. Food Sci.*, 69(4), 233-240.
- Wrolstad, R. E., Siriwoharn, T., Durst, R. W., and Finn, E. 2002. Impact of blackberry polyphenolics on juice quality. Pre-Proceedings for the 2002 Northwest Center for Small Fruits Research Annual Conference. December 2, 2002. Doubletree Hotel Lloyd Center, Portland, Oregon, USA, 4.

Keynote speaker at conferences

- Topic “Effect of sweet basil extracts on ascorbic acid degradation” at the International Conference on Food and Applied Bioscience. February 4, 2016. Empress Hotel Chiang Mai, Thailand.
- Topic “Natural color innovation: fields of investigation” at Technical Seminar Food Ingredients China 2013. March 28, 2013. Shanghai World Expo Exhibition & Convention Center, Shanghai, People’s Republic of China.
- Topic “Botanical Extracts and Trends in Functional Foods” at Naturex Technical Seminar: Get Healthy, Go Natural. October 2, 2012. La Grandeur Manger Dua Hotel, Jakarta, Indonesia.
- Topic “New Generation Natural Ingredients for Food & Beverage” at the 2nd Natural & Functional Ingredient Conference 2012. September 26, 2012. Rama Gardens Hotel, Bangkok, Thailand.
- Topic “All about Natural Colours” at Ice Cream Seminar. November 22, 2012. Lou Lou'a Beach Resort, Sharjah, United Arab Emirates.
- Topic “Thaumatococin - Naturally Masking Bitterness” at the 6th NUTRA INDIA SUMMIT 2011. February 15, 2011. Hotel Vivanta by Taj President, Mumbai, India.
- Topic “Rosemary extract: A Natural Solution to Food Rancidity” at the Food Industry Forum 6 & Workshop: Use of Functional Ingredients Food Additives for Food. August 6, 2010. The Emerald Hotel Bangkok, Thailand.
- Topic “Color Naturally” at Nutrition SC Technical Seminar: A Healthy Choice from Botanical Extracts. October 5, 2010. Grand Millennium Sukhumvit Hotel, Bangkok, Thailand.
- Topic “Natural flavour enhancer” at NATUREX Seminar. September 28, 2010. Sheraton Media & Towers Hotel, Jakarta, Indonesia.

- Topic “Exploring the Latest Health Promoting Concepts in Confectionery” at The Industry Forum: Health & Wellness Ingredients Thailand 2009. June 26, 2009. Grand Millennium Sukhumvit Bangkok, Thailand.
- Topic “Developing Health Products Naturally using Natural Colours” at The Technical Seminar Program: Helping to Create Healthier Food Naturally 2009. June 9, 2009. Sunway Hotel, Kuala Lumpur, Malaysia.
- Topic “Exploring the Health Promoting Concepts using Flavour Enhancer” at The Technical Seminar Program: Helping to Create Healthier Food Naturally 2009. June 9, 2009. Sunway Hotel, Kuala Lumpur, Malaysia.
- Topic “All Fiber Are Not Equal: Learning from Oat Beta-glucan and Heart Health” at the Food Ingredient Asia Technical Conference 2009. September 10, 2009. Queen Sirikit National Convention Center, Bangkok, Thailand.
- Topic “Cocoa Polyphenols and Cardiovascular Health” at the Food Ingredient Asia Conference 2008. September 25, 2008. Queen Sirikit Convention Centre, Bangkok, Thailand.
- Topic “Natural Colours for Food and Beverage Applications” at the Natraceutical Group Seminar Asia Pacific Region. September 23, 2008. Landmark Hotel, Bangkok, Thailand.
- Topic “Natural Flavour Enhancer for Food and Beverage Applications” at the Natraceutical Group Seminar Asia Pacific Region. September 23, 2008. Landmark Hotel, Bangkok, Thailand.
- Topic “Natural Colours: Helping to Create Healthier Food Naturally” at Nutrition SC Technical Seminar: 2008 Value Creation For Food. September 18, 2008. Landmark Hotel, Bangkok, Thailand.
- Topic “Thaumatococcus – The Natural Multifunctional Ingredient and Its Unique Properties in Health Foods” at the Food Ingredient Asia Technical Conference 2007. September 27, 2007. Queen Sirikit National Convention Center, Bangkok, Thailand.
- Topic “Talin®: The Multifunctional Natural Ingredient” at Natraceutical Group Agency Seminar & Workshop Asia Pacific Region. September 25, 2007. Sheraton Grande Sukhumvit Hotel, Bangkok, Thailand.
- Topic “Functions of Talin® for Food Industry” at Nutrition SC Technical Seminar: Welcome Today to Tomorrow’s Healthy Food 2007. September 21, 2007. Sheraton Grande Sukhumvit Hotel, Bangkok, Thailand.
- Topic “Talin®: The Multifunctional Natural Ingredient” at the Technical Seminar, Northeast Section, Institute of Food Technologists, Food Industry Expo 2005. May 11, 2005. DCU Center, Worcester, Massachusetts, USA.
- Topic “Impact of Blackberry Polyphenolics on Juice Quality” at the Northwest Center for Small Fruit Research 2002 Annual Conference. December 3, 2002. Doubletree Hotel Lloyd Center, Portland, Oregon, USA.