Tabkrich Khumsap, Ph.D.

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Scopus: https://www.scopus.com/authid/detail.uri?authorId=57200140906
Google scholar: https://scholar.google.com/citations?user=b6xTNLgAAAAJ&hl=en&oi=ao

Education

May 2022: Doctor of Philosophy in Food Engineering and Bioprocess Technology, School of Environment, Resources, and Development, Asian Institute of Technology, Thailand

May 2014: Master of Science in Food Engineering and Bioprocess Technology, School of Environment, Resources, and Development, Asian Institute of Technology, Thailand

March 2012: Bachelor of Science in Food Science and Technology (Second class honors), Faculty of Agro - Industry, Chiang Mai University, Thailand

Professional Experiences

2025 – now: **Assistant Dean**, Faculty of Agro-Industry, Chiang Mai University, Thailand

2022 – now: **Lecturer**, Division of Food Science and Technology, Faculty of Agro-Industry, Chiang Mai University, Thailand

2017 - 2021: **Part time Lecturer**, Department of Innovation in Food Technology and Nutrition, College of Health Science, Christian University of Thailand

2014 – 2017: **Lecturer**, Department of Innovation in Food Technology and Nutrition, College of Health Science, Christian University of Thailand

Research Expertise

1. Bio/chemical sensor for food safety application
2. Nanotechnology in food application
3. Molecularly imprinted polymer
4. Novel techniques in food processing

PhD Dissertation

Development of a Novel Epitope-imprinted Polydopamine Interface for Food Allergen Detection.

Publications under Dissertation

Khumsap, T., Bamrungsap, S., Thu, V. T., & Nguyen, L. T. (2021). Epitope-imprinted polydopamine electrochemical sensor for Ovalbumin Detection. *Bioelectrochemistry*, *140*, 107805.

Khumsap, T., Corpuz, A., & Nguyen, L. T. (2021). Epitope-imprinted polymers: Applications in protein recognition and separation. *RSC Advances*, *11*(19), 11403–11414.

Khumsap, T., Bamrungsap, S., Thu, V. T., & Nguyen, L. T. (2022). Development of epitope-imprinted polydopamine magnetic nanoparticles for selective recognition of allergenic egg ovalbumin. *Chemical Papers*.

Publications

Book Chapter

Khumsap, T., & Nguyen, L. T. (2021). Chapter 12 - Molecularly imprinted polymer composites for detecting toxic contaminants in agricultural products. In Molecularly Imprinted Polymer Composites Synthesis, Characterization and Applications (pp. 309–344). Woodhead Publishing, Elsevier.

Corpuz, A., **Khumsap, T**., & Nguyen, L. T. (2025). Cellulose-based nanocomposites. In G. Korotcenkov (Ed.), The handbook of paper-based sensors and devices (pp. 547–581). Springer. https://doi.org/10.1007/978-3-031-91080-7_20

Journals

Jeenpitak, T., Pattarapisitporn, A., Tangjaidee, P., **Khumsap, T**., Yawootti, A., Phongthai, S., Noma, S., & Klangpetch, W. (2026). Valorization of Hericium erinaceus by-products for β-glucan recovery via pulsed electric field-assisted alkaline extraction and prebiotic potential analysis. Foods, 15(1), Article 145. https://doi.org/10.3390/foods15010145

Puttawong, A., Bamrungsap, S., Nguyen, L. T., & **Khumsap, T**. (2026). Novel electrochemical sensing platform for alpha s-1 casein detection: Integration of gold nanoparticles reduced graphene oxide and epitope imprinting. Food and Chemical Toxicology, 207, Article 115795. https://doi.org/10.1016/j.fct.2025.115795

Rinpan, R., Panudta, V., Phongkhedkham, R., Janpitu, S., Phongthai, S., Klangpetch, W., & **Khumsap, T**. (2025). Effect of riboflavin and blue light-emitting diode irradiation on microbial inactivation and the physicochemical properties of betel leaves. Processes, 13(10), Article 3130. https://doi.org/10.3390/pr13103130

Warnasooriyaa, W. M. P. B. K., Chaikaew, A., Phongthai, S., Unban, K., Klangpetch, W., K**humsap, T.**, Rachtanapun, P., & Tangjaidee, P. (2025). Bioactive properties of selenium-enriched polysaccharides extracted from Pleurotus ostreatus using ultrasonic-assisted extraction. Current Research in Food Science, 11, Article 101207. https://doi.org/10.1016/j.crfs.2025.101207

Tongdonyod, S., Na Lamphun, J., Wichaphon, J., Phongthai, S., Tangjaidee, P., Unban, K., **Khumsap, T**., Kittiwachana, S., Funsueb, S., & Klangpetch, W. (2025). Development of non-alcoholic beer from barley and rice bran with shelf-life extension using high pressure processing. Food Bioscience, 69, Article 106962. https://doi.org/10.1016/j.fbio.2025.106962

Janpitu, S., Puttawong, A., Tangjaidee, P., Klangpetch, W., Unban, K., Phongthai, S., & **Khumsap, T.** (2025). Influence of visible light wavelengths on bioactive compounds and GABA contents in barley sprouts. Open Agriculture, 10(1), Article 20250482. https://doi.org/10.1515/opag-2025-0482

Tongdonyod, S., Lamphun, J. N., Wichaphon, J., Phongthai, S., Tangjaidee, P., Unban, K., **Khumsap, T**., Kittiwachana, S., Funsueb, S., & Klangpetch, W. (2025). Development of Non-Alcoholic Beer from Barley and Rice Bran with Shelf-Life Extension Using High Pressure Processing. Food Bioscience, 106962.

Paksin, P., Tangjaidee, P., Klangpetch, W., Unban, **K., Khumsap**, T., Klunklin, W., Yawootti, A., Jantanasakulwong, K., Rachtanapun, P., & Phongthai, S. (2025). Quality attributes, structural characteristics, and functional properties of Brewer's spent grain protein concentrates as affected by alkaline and pulsed electric Field-Assisted extraction. Foods, 14(9), 1515.

Fareed, S. Z., Tangjaidee, P., **Khumsap, T**., Klangpetch, W., Phongthai, S., Kanpiengjai, A., Khanongnuch, C., & Unban, K. (2025). Xylooligosaccharides from Barley Malt Residue Produced by Microwave-Assisted Enzymatic Hydrolysis and Their Potential Uses as Prebiotics. Plants, 14(5), 769.

Fashakin, O. O., Tangjaidee, P., Unban, K., Klangpetch, W., **Khumsap, T.**, Sringarm, K., Rawdkuen, S., & Phongthai, S. (2023). Isolation and identification of antioxidant peptides derived from cricket (gryllus bimaculatus) protein fractions. *Insects*, *14*(8), 674.

Corpuz, A., **Khumsap, T**., Bamrungsap, S., Thu, V. T., & Nguyen, L. T. (2023). Epitope-imprinted polydopamine and reduced graphene oxide-based sensing interface for label-free detection of gliadin. *Journal of Food Composition and Analysis*, 117, 105090. https://doi.org/10.1016/j.jfca.2022.105090

Thasak, S., Arellano, C. A., **Khumsap, T.**, & Nguyen, L. T. (2023). Influence of different visible led light sources on photo-degradation of red cabbage extract. International Journal of Food Engineering. https://doi.org/10.1515/ijfe-2022-0249

Marzuki, S. U., Pranoto, Y., **Khumsap, T**., & Nguyen, L. T. (2020). Effect of blanching pretreatment and microwave-vacuum drying on drying kinetics and physicochemical properties of purple-fleshed sweet potato. *Journal of Food Science and Technology*, 58(8), 2884–2895. https://doi.org/10.1007/s13197-020-04789-5

Khumsap, T. (2016)**.** Approaches in Developing Food Products for Elderly. *International Journal of Nursing and Health Science 4(2)*.

รัชฎาพร แก้วสีงาม, ภานุ ยอดสุข, **ทับกฤช ขุมทรัพย์.** (2561). ผลของการบริโภคน้ำมันมะพร้าวต่อไขมันในเลือด. *วารสารมหาวิทยาลัยคริสเตียน 24(3).* 459 – 466.

<u>Conference Proceedings</u>

Khumsap, T., Yingcharoen, S. (2014). The Development of Ohmic Heating Equipment in Reserving Coconut Juice (Phase I), Proceedings “The Multidisciplinary Research and Innovation for Globally Sustainable Development”, P.44-54.

Sambath S., **Khumsap, T**. (2014). Product Development and Quality Evaluation of Broken Rice Soybean-Based Milk, *Proceedings “Global Health Sciences for a Better Quality of Life”,* P.103-116.

Kittiamornkul, N., **Khumsap, T.**, Yingcharoen, S., & Inklab, L. (2017). A Small Pasteurization System using Magnetic Induction for Coconut Juice. *14th International Conference on Electrical Engineering/Electronics, Computer, Telecommunications and Information Technology (ECTI-CON)*, 381–384.

อธิชา เนตรบุตร, ลักษณา อินทร์กลับ, **ทับกฤช ขุมทรัพย์.** (2565). การพัฒนาผลิตภัณฑ์เยลลี่คาราจีแนนมะม่วงหาวมะนาวโห่. การประชุมวิชาการระดับชาติ วิทยาลัยนครราชสีมา,. 497-505.

Service/Outreach

1. Member of Thai Association for Cooperative Education
2. Program Committee of Bachelor of Science in Food Technology and Nutrition, Christian University of Thailand (2013 – 2021)
3. Food Process Control Supervisor (Low acid can food and acidified food) , Thai-FDA
4. Process Authority (Low acid can food and acidified food), Thai-FDA
5. Preventive Control Qualified Individual, FSPCA, USFDA

Consultant experiences

1. I.O.P. Foods Co. Ltd. 7/5, Moo 3, Huai Chorakhe, Muang, Nakhon Pathom, 73000
2. Dok Bua Food Co. Ltd. 101, Ta Kwang, Sarapee, Chiang Mai, 50140
3. Paiboon Products Co. Ltd. 38/56, Aom noi, Kratumban, Samutsakorn, 74130
4. K.P. Foods Co.Ltd. 68/1, Sampatuan, Nakhonchaisri, Nakhon Pathom, 73120
5. Bupha sawan Drinking water community enterprise (วิสาหกิจชุมชนน้ำดื่ม บุผาสวรรค์), Pong Yang, Mae rim, Chiang Mai, 50180
6. กลุ่มวิสาหกิจชุมชนผู้ผลิตผลไม้ปลอดสารพิษเพื่อส่งออก, Bang Pae, Ratchaburi, 70160

Teaching experiences

As lecturer at Christian University of Thailand

1. TIFT3204 Introduction to Food Technology
2. TIFT3301 Food Processing I
3. TIFT3302 Food Processing II
4. TIFT3303 Food Engineering
5. TIFT3306 Food Microbiology
6. TIFT3311 Food Packaging
7. TIFT3411 Meat Technology and processing
8. TIFT3412 Fruits and vegetables processing
9. TFTN3331 Cooperative Education for Food Technology
10. TFTN3233 Product Development Technology in Food Technology

As Teaching Assistant at Asian Institute of Technology

1. Food Process Engineering Laboratory

2. Properties of Food Biomaterials and Nutrients Laboratory

As lecturer at Chiang Mai University

1. 601201 Principle of Food Processing and Preservation
2. 601202 Food Processing and Preservation 1
3. 601341 Food Engineering 1
4. 601344 Food Processing 2
5. 601345 Food Processing Laboratory
6. 601346 Food Processing 3
7. 601347 Food Processing Laboratory 2
8. 601494 Pre-Cooperative Education
9. 601495 Cooperative Education
10. 601702 Food Processing and Engineering
11. 601745 Advances in Food Processing and Technology
12. 601775 Advances in Food Science and Analysis