

Curriculum Vitae



Wirote Youravong

Associate Professor

Department of Food Technology

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Education

- Ph.D (Food engineering), University of Reading, UK
- M.Eng (Food engineering), KMITT, Thailand
- B.Sc (Agro-industry), PSU, Thailand

Employment

- Prince of Songkla University, 1996 - present
- Foremost Friesland (Thailand) PLC, 1994 - 1996
- Thai-Danish Dairy-Farm Promotion Organization, 1990 - 1994
- Continental Pacific (1979) limited, 1990

Other appointments

- Dean of the Faculty of Agro-industry, PSU (2014- present)
- Director for Membrane Science and Technology Research Center, PSU, (2007-2013)
- Acting Dean, Faculty of Agro-industry, PSU (Dec 2006- Mar 2007)
- Associate Dean, Faculty of Agro-industry, PSU (2002-2006, 2007)
- Associate Director for Membrane Science and Technology Research Center, PSU, (2002- 2007)

Research area/interests:

- Food and bioprocess engineering
- Membrane processes for industrial applications : foods and bio-products, water purification, environment, gas purification and renewable energy; including microfiltration, ultrafiltration, nanofiltration, reverse osmosis, forward osmosis, membrane distillation, pervaporation, catalyzed membrane, and membrane emulsification

Current research

- Production of bioactive compounds from plant or food industrial waste using enzymatic membrane reactor
- Membrane as a clean technology in Agri-food based industries
- Forward osmosis/membrane distillation process for concentration of low molecular weight functional food and bio products
- Membrane emulsification

Selected publications:

Original article

1. Mantaka Thuanthong, Nualpun Sirinupong, Wirote Youravong; Triple Helix Structure of Acid Soluble Collagen derived from Nile tilapia Skin as Affected by Extraction Temperature, Journal of the science of food and agriculture, Accepted
2. Dasaesamoh, Rusman., Youravong, Wirote. and Wichienchot, Santad., Digestibility, fecal fermentation and anti-cancer of dragon fruit oligosaccharides, International Food Research Journal, accepted
3. Dasaesamoh, Rusman., Youravong, Wirote. and Wichienchot, Santad, Optimization on pectinase extraction and purification by yeast fermentation of oligosaccharides from dragon fruit (*Hyloceus undatus*), International Food Research Journal, accepted
4. Chiraphon Chaikliang, Santad Wichienchot, Wirote Youravong and Potchanapond Graidist, 2015, Evaluation on prebiotic properties of Beta-glucan and oligo-Beta-glucan from mushrooms by human fecal microbiota in fecal batch culture, Functional Foods in Health and Disease; 5(11): 395-405
5. Santad Wichienchot, Wirote Youravong, Suwattana Prueksasri and Budsaraporn Ngampanya, Recent researches on prebiotics for gut health in Thailand, 2015, Functional Foods in Health and Disease; 5(11): 381-394
6. Mokhtar, N. M. , Lau, W.J, Ismail, A.F, Youravong, W, Khongnakornb W, and Lertwittayanon, K ,2015, Performance evaluation of novel PVDF–Cloisite 15A hollow fiber composite membranes for treatment of effluents containing dyes and salts using membrane distillation, RSC Advances, 5, 38011–38020
7. Aporn Laorko ., Sasitorn Tongchitpakdee and Wirote Youravong , 2015, Economic Assessment for Cold Sterilization and Clarification of Pineapple Juice and Coconut Water using Microfiltration, J. Applied Membrane Science and Technology, 17: 35-46

8. Penporn Srinuworn, Wirote Youravong and Santad Wichienchot. 2015. Permeate flux enhancement in ultrafiltration of tofu whey using pH-shifting and gas- liquid two-phase flow, *Separation Science and Technology*, 50, 2367-2374
9. Jirawadee Kasiwut, Wirote Youravong, Pittaya Adulyatham and Nualpun Sirinupong, 2015, Angiotensin I-converting enzyme inhibitory and Ca-binding activities of peptides prepared from tuna cooking juice and spleen proteases, *International Journal Food Science and Technology*, 50, 389–395
10. Mantaka Tauntong, Nualpun Sirinupong and Wirote Youravong, 2014, Effect of Pre-Hydrolysis by Alcalase on Enzymatic Membrane reactor Performance in Production of Low Molecular Weight Peptide from Nile Tilapia Skin Gelatin, *Kasetsart J. (Nat. Sci.)* 48 : 1 - 13
11. Watsa Khongnakorn., Weerapong Bootluc and Wirote Youravong, 2014, Surface Modification of CTA-FO Membrane by CO₂ Plasma Treatment, *J Teknol* 70(2): 71-75
12. Sothyreak, Chhun., Wats,a Khongnakorn and Wirote Youravong, 2014, Energy consumption for brine solution recovery in direct contact membrane distillation, *Advanced materials research*, 931-932 : 256-260
13. Aporn, Laorko, Sasitorn Tongchitpakdee and Wirote Youravong, 2013, Storage quality of pineapple juice non-thermally pasteurized and clarified by microfiltration, *J Food Eng*, 16(2): 554-561
14. Narin, Charoenphun., Wirote, Youravong and Benjamas, Cheirsilp, 2013, Determination of reaction kinetics of hydrolysis of Tilapia (*Oreochromis niloticus*) muscle protein for manipulating production of bioactive peptides with antioxidant activity, angiotensin-I-converting anzyme (ACE) inhibitory activity and Ca-binding properties, *Int J Food Sci Tech*, 48 (2): 419-428
15. Narin, Charoenphun, Benjamas, Cheirsilp, Nualpun, Sirinupong and Wirote, Youravong, 2013, Calcium-binding peptides derived from tilapia (*Oreochromis niloticus*) protein hydrolysate, *Eur Food Res Technol*, 236 : 57-63
16. Muhammadameen, Hajihama and Wirote, Youravong, 2013, Concentration and desalination of protein derived from tuna cooking juice by nanofiltration, *J Teknol*, 65(4): 1-6
17. Aporn Laorko ., Sasitorn Tongchitpakdee and Wirote Youravong, 2012, Effect of gas sparging on fouling and fouling mechanism during microfiltration of pineapple juice and coconut water, *J. Appli Membr Sci Tech*, 15: 31-41
18. Aporn Laorko , Zhen-yu Li., Sasitorn Tongchitpakdee and Wirote Youravong, 2011, Effect of gas sparging on flux enhancement and phytochemical properties of clarified pineapple juice by microfiltration , *Sep Purif Technol*, 80 : 445-451
19. Aporn Laorko, Zhen-yu Li., Sasitorn, Tongchitpakdee., Suphitchaya Chantachum. and Wirote Youravong, 2010, Effect of membrane property and operating conditions on phytochemical properties and permeate flux during clarification of pineapple juice, *J Food Eng*, 100: 514-521
20. Adisorn, Khatprathum., Piyarat, Siriwongpaisaan. and Wirote, Youravong., 2010, Concentration of Protein in fish mince wash water discharged from surimi processing plant by ultrafiltration, *Desalination and water treatment*, 21: 1-7

21. Wirote Youravong, Zhen-yu Li, Aporn Laorko, 2010, Influence of gas sparging on clarification of pineapple wine by microfiltration, *J Food Eng*, 9 : 427-432
22. Zhen-Yu Li, Aran H-Kittikun and Wirote Youravong, 2010, Protein hydrolysis by protease isolated from tuna spleen by membrane filtration: A comparative study with commercial proteases. *LWT*, 43(1), 166-172
23. Zhen-Yu Li, Aran H-Kittikun and Wirote Youravong. 2009. Purification of protease from pre-treated tuna spleen extract by ultrafiltration: An altered operational mode involving critical flux condition and diafiltration. *Sep Purif Technol*, 66 : 368 – 374.
24. Zhen-Yu Li, Aran H-Kittikun and Wirote Youravong, 2008, Separation of protease from yellowfin tuna spleen extract by ultrafiltration: effect of hydrodynamics and gas sparging on flux enhancement and selectivity, *J Membrane Sci*, 311(1-2): 104-111
25. Zhen-Yu Li, Wirote Youravong and Aran H-Kittikun, 2008, Removal of suspended particles from extract of tuna spleen by microfiltration: experimental evaluation of a low fouling condition, *J. Food Eng*, 85 (2): 309-315
26. Zhen-yu Li, Aran H-Kittikun and Wirote Youravong, 2008, Removal of suspended solids from tuna spleen extract by microfiltration: a batch process design and improvement, *Biochemical Eng J*, Vol. 38(2): 226-233
27. Aporn Laorko , Zhenyu Li, Wirote Youravong, Sasitorn Tongjitpakdee and Supitchaya Chantachum, 2007 Cold sterilization of coconut water using membrane filtration: effect of membrane property and operating condition, *J Appli Membrane Sci Tech*, 6: 9-17
28. Zhen-Yu Li, Wirote Youravong and Aran H-Kittikun, 2006, Analysis of fouling mechanism during dead end microfiltration of tuna spleen, *J. Anhui U of tech and sci*, 21: 1-6
29. Ritthipairote, T., Youravong, W. and Wanichapichart, P., 2006, Flux, rejection and fouling during ultrafiltration and microfiltration of sugar palm sap using a pilot plant scale. *Songklanakarin J Sci Techno*, 28(4): 817-828
30. Zhen-yu, Li., Youravong, W. and H-Kittikhun, A., 2006, Separation of protease enzymes from yellowfin tuna extract by ultrafiltration. *Bioresource Technol*, Vol. 97: 2364-2370.
31. Youravong, W., Pakdeekong, M. and Taksinpatanapong, P., 2005, Influence of membrane properties on pineapple wine clarification and fouling behavior. *J. Appli Membrane Sci Tech*, 1: 9-18
32. Tachratanamane, R, Cherdrungsi, K. and Youravong, W, 2004, Fractionation of protein in surimi waste water using membrane filtration. *J. Teknologi*, 41(F): 1-10
33. Youravong, W, Lewis, M.J. and Grandison, A.S., 2003, Critical flux in ultrafiltration of skimmed milk. *Trans. IChemE, Part C*, 81: 303-308.
34. Youravong, W, Grandison., A.S. and Lewis, M.J., 2003, The effect of physicochemical change on critical flux of skimmed milk ultrafiltration , *Songklanakarin J Sci Techno*, 24 : 929-939
35. Youravong, W, Grandison, A.S. and Lewis, M.J., 2002, The effect of hydrodynamic and physicochemical changes on critical flux of milk protein suspensions. *J. of Dairy Research*, 69: 443-455
36. Grandison, A.S., Youravong, W and Lewis M.J, 2000, Hydrodynamic factors effecting flux and fouling during ultrafiltration of skimmed milk, *Lait*, 80 (1): 165–174.

Book/book chapter

1. Youravong, W. and Li, Z.Y. 2009. Membrane Technology in the Fishery Industry — A State of the Art, Book chapter in *Biochemical Engineering : Biotechnology in Agriculture, Industry and*

Conference proceeding/attending

1. Wirote Youravong, An enzymatic membrane reactor for nutraceutical and functional foods. Keynote speaker, the 11th International conference on membrane science and technology (MST2013), 27-29 August, 2013, Seri Pacific Hotel, Kuala Lumpur, Malaysia
2. Mantaka Tauntong, Wirote Youravong and Nualpun Sirinupong, Acetic acid removal of fish skin collagen by ultrafiltration, the 11th International conference on membrane science and technology, 27-29 August, 2013, Seri Pacific Hotel, Kuala Lumpur, Malaysia
3. Penporn Srinuworn, Santad Wichienchot and Wirote Youravong, Separation of oligosaccharides from UF-pretreated tofu whey by nanofiltration, the 11th international conference on membrane science and technology, 27-29 August, 2013, Seri Pacific Hotel, Kuala Lumpur, Malaysia
4. Muhammadameen Hajihama, Wirote Youravong, Concentration and desalination of protein derived from tuna cooking juice by nanofiltration, **the 11th international conference on membrane science and technology, 27-29 August, 2013, Seri Pacific Hotel, Kuala Lumpur, Malaysia**
5. Rusman Dasaesamoh, Wirote Youravong and Santad Wichienchot, Optimization of oligosaccharides extraction from dragon fruit's flesh. the 4th International conference on Natural products for health and beauty. 28-30 November, 2012. Chiang Mai Royal Orchid, Chiang Mai, Thailand.
6. Kridsada Keawyok, Wirote Youravong, and Santad Wichienchot, Extraction of prebiotics from dragon fruit's peel, the 4th International conference on Natural products for health and beauty. 28-30 November, 2012. Chiang Mai Royal Orchid, Chiang Mai, Thailand.
7. Narin, Charoenphun, Benjamas, Cheirsilp, and Wirote, Youravong, Influence of gas/liquid two phase flow during ultrafiltration of tilapia protein hydrolysate on Ca-binding peptide separation. The 10th International on membrane on membrane science and technology. 22 -24 August, 2012. Amari Atrium hotel, Bangkok, Thailand.
8. Penpron, Srinuworna., Santad, Wichienchot, and Wirote, Youravong., Enhance of permeate flux during soy whey ultrafiltration by gas sparging and pH modification. The 10th International on membrane on membrane science and technology. 22 -24 August, 2012. Amari Atrium hotel, Bangkok, Thailand.
9. Narin, Charoenphun, Benjamas, Cheirsilp, and Wirote, Youravong, Production of antioxidant peptides from tilapia protein hydrolysate using membrane bioreactor. The 38th Congress on Science and Technology of Thailand (STT 38) , 17-19 October 2012, Chiang Mai, Thailand.
10. Narin, Charoenphun, Benjamas, Cheirsilp, and Wirote, Youravong, Ca-binding peptides derive for tilapia (*Oreochromis niloticus*) protein hydrolysate. The international conference on food structures, Digestion health (FSDH), 7 - 9 March 2012, Convention Centre, Palmerston North, New Zealand.
11. Narin, Charoenphun, Benjamas, Cheirsilp, and Wirote, Youravong, Influence of gas/liquid two phase flow during ultrafiltration of tilapia protein hydrolysate on Ca-binding peptide

- separation. The 10th International on membrane on membrane science and technology. 22 -24 August, 2012. Amari Atrium hotel, Bangkok, Thailand.
12. Wirote, Youravong,, Membrane as clean technology for the food industry, Keynote Speaker, The 8th International on membrane on membrane science and technology. 30-31 November, 2010. Institute of Technology Bandung, Bandung, Indonesia
 13. Wirote, Youravong,, Membrane technology in fishery waste utilization., Keynote speaker, The 7th International on membrane on membrane science and technology. 13-15 May, 2009. Corus Hotel, Kuala Lumpur, Malaysia
 14. Zhenyu, Li H-Kittikhun, A and Youravong, W., A multi stages membrane filtration process for separation and purification of proteases from the waste of fishery industry. The 6th Regional symposium on membrane science and technology. 13th-15th August, 2008. Phuket Graceland Resort & Spa Hotel, Phuket, Thailand.
 15. Khatprathum, A ., Siritwongpaisaan, P. and Youravong, W, Functional properties of protein recovery from wash water fish mince in surimi industry using ultrafiltration, Food innovation Asia conference,12-13 June, 2008, Bitec, Bangna, Bangkok, Thailand
 16. Khatprathum, A ., Siritwongpaisaan, P. and Youravong, W, Concentration of protein in surimi wash water using ultrafiltration : performance and modeling of permeate flux, The 4nd Regional symposium on membrane science and technology. 26-29 April, 2006. Nanyang Technological University, Singapore
 17. Sakpetch, P., Suntinanalert, P and Youravong, W, Diafiltration and concentration of protein hydrolysate mixture by nanofiltration, The 4nd Regional symposium on membrane science and technology. 26-29 April, 2006. Nanyang Technological University, Singapore
 18. Ritthipairote, T ., Sripaiboon, P. and Youravong, W, Fouling and fouling mechanism during membrane filtration of sugar palm Sap using ceramic membrane, The 4nd Regional symposium on membrane science and technology. 26-29 April, 2006. Nanyang Technological University, Singapore
 19. Zhenyu, Li., Youravong, W. and H-Kittikhun, A, Effect of crossflow velocity on suspended solid removal : critical flux and limiting flux in microfiltration of tuna spleen extract. The 4nd Regional symposium on membrane science and technology. 26-30 April, 2006. Nanyang Technological University, Singapore
 20. Sakpetch, P., Suntinanalert, P and Youravong, W The possibility of separating NaCl from protein hydrolysate mixtures using nanofiltration, The 3nd Regional symposium on membrane science and technology. 26-29 April, 2005. Institute of Technology Bandung, Indonesia
 21. Rhittipairote, T, Youravong, W and Wanichapichat, P. Clarification of sugar palm sap using a pilot scale microfiltration. . The 2nd Regional symposium on membrane science and technology. 22nd-25th April, 2004. The University technology Malaysia, Johor, Malaysia.
 22. Zhenyu, Li, Youravong, W and Kittikhun, A.H., Separation of protease enzymes from yellowfin tuna viscera by ultrafiltration. the 2nd Regional symposium on membrane science and technology. 22-25 April, 2004 .The University technology Malaysia, Johor, Malaysia.
 23. Youravong, W, Grandison, A.S, Lewis, M.J. The effect of physicochemical changes on critical flux of skimmed milk ultrafiltration. Proceeding of regional symposium on membrane science and technology, 16-17 January 2003, BP Samila Beach Hotel, Songkhla, Thailand

24. Youravong, W, Flux and fouling during ultrafiltration of surimi wash water, the 5th international conference on membrane science and technology, 10-14 November 2003, UNESCO center for membrane science and technology, The University of New South Wales, Australia.

Consulting service

Fields

Process development for novel foods and bio-products, clean/green technology in agro-industry, Membrane technology process and plant design; and application, Aseptic processing technology

Major industries

Seafood industry, fruit & vegetable industry, dairy industry, **functional food industry**, palm oil industry, rubber industry,