

Curriculum Vitae



Wirote Youravong, Ph.D
Associate Professor

**Department of Food Technology, Faculty of Agro-Industry
& Center of Excellence in Membrane Science and Technology
Prince of Songkla University, Hat Yai, Thailand**

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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, 1995-present
- Foremost Friesland (Thailand) PLC, 1993-1995
- Thai-Danish Dairy-Farm Promotion Organization, 1990-1993
- Continental Pacific (1979) limited, 1990

Other appointments

- Committee member of outreach center, Prince of Songkla University, 2018-present
- Member of Prince of Songkla University Council (2017-present)
- Committee member of the Faculty of Veterinary science, Prince of Songkla University, 2017-present
- Committee member of the Faculty of Environmental management, Prince of Songkla University, 2016-present
- Committee member of Prince of Songkla Scientific Center, 2014-present
- Executive committee member of the Food Science and Technology Association of Thailand (FoSTAT) (2014-present)
- Executive committee member of Agro-industry Academic council (AIAC), Thailand (2014-present)
- Dean of the Faculty of Agro-industry, PSU (2014- present)
- Editorial board member: Journal Applied Membrane Science and Technology, 2007-present
- Committee member of the Faculty of medical Technology, Prince of Songkla University, 2015-2016

- 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 (2002-2007)
- Associate Director for Membrane Science and Technology Research Center, PSU, (2002-2007)
- Conference chair : International conference on membrane science and technology (MST2008, MST2012)
- Scientific committee : International conference on membrane science and technology during 2003-2017

Research area/interests:

- Food and bioprocess engineering
- Membrane technology for industrial applications : foods and bio-products, palm oil mill, rubber processing, water recycle and purification, gas purification, wastewater treatment, renewable energy and green industry
- Supercritical fluid extraction
- Functional food ingredients: prebiotic and bioactive peptides
- Sustainability in Agro-food sector

Current research

- Production of bioactive peptides from soybean, fish skin and meat / fish cooking juice and food industrial waste using enzymatic membrane reactor
- Membrane as a clean technology in Agro-food industries
- Forward osmosis/for concentration of fruit juice, low molecular weight functional foods and bio products
- Computational fluid dynamic simulation in membrane process
- Prebiotic from cassava, rice and algae
- Sustainability in Agro-food sector

Selected research article

1. Kasiwut, J., Youravong, W and Sirinupong, N, 2019, Angiotensin I-converting enzyme inhibitory peptides produced from tuna cooking juice hydrolysate by continuous enzymatic membrane reactor, *Journal of Food Biochemistry*, in press
2. Budseekoada, S., Yupanquic, C.T., Alashid, A.M., Aluko, R.E and Youravong, 2019, Anti-allergic activity of mung bean (*Vigna radiata* (L.) Wilczek) protein hydrolysates produced by enzymatic hydrolysis using non-gastrointestinal and gastrointestinal enzymes, *Journal of Food Biochemistry*, 43, 1-15
3. Budseekoada, S., Yupanquic, C.T., Sirinupong, N., Alashid, A.M., Aluko, R.E and Youravong, W, 2018, Structural and functional characterization of calcium and iron-binding peptides from mung bean protein hydrolysate, *Journal of Functional Foods*, 4, 333-341.
4. Sirinupong, T., Youravong, W., Tirawat, D., Lau, W.J., Lai, G.S and Ismail, A.F, 2018, Synthesis and characterization of thin film composite membranes made of PSF-TiO₂/GO nanocomposite substrate for forward osmosis applications, *Arabian Journal of Chemistry*, 11(7),1144-1153.

5. Kasiwut, J., Sirinupong, N and Youravong, W, 2018, The Anticoagulant and Angiotensin I-Converting Enzyme (ACE) Inhibitory Peptides From Tuna Cooking Juice Produced By Alcalase, *Current Nutrition & Food Science*, 14(3), 225-234.
6. Martosa, S., Youravong, W., Kongmanklang, C and Kongnakorn, W, 2018, *Journal of Polymer Engineering*, Applications and characterization of silicalite-1/polydimethylsiloxane composite membranes for the pervaporation of a model solution and fermentation broth, 39(2), 152-160.
7. Saelin, S., Wattanachant and Youravong, W., 2017, Evaluation of water holding capacity in broiler breast meat by electrical conductivity, *International Food Research Journal*, 24(6), 2593-2598.
8. Lertwittayanon, K., Youravong, W and Lau, W.J, 2017 Enhanced catalytic performance of Ni/Al₂O₃ catalyst modified with CaZrO₃ nanoparticles in steam-methane reforming, *International Journal of Hydrogen Energy*, 42 , 28254-28265
9. Thuanthong, M., De Gobba, C., Sirinupong, N., Youravong W and Otte, J. 2017, Purification and characterization of angiotensin-converting enzyme-inhibitory peptides from Nile tilapia (*Oreochromis niloticus*) skin gelatin produced by an enzymatic membrane reactor, *Journal of Functional Foods*, 33, 243-254
10. Narin Charoenphun and Wirote Youravong, 2017, Influence of gas-liquid two-phase flow on angiotensin-I converting enzyme inhibitory peptides separation by ultra-filtration, *Journal of the Science of Food and Agriculture*, 97(1):309-316
11. Penporn Srinuworn, Wirote Youravong and Wassana, Khongnakorn, 2016, Recovery of protein from mung bean processing waste by rotary ultrafiltration, *Journal of Engineering Science and Technology*, 7 : 947-961
12. Lertwittayanon, K., Truektrong, O., Inthanu, W and Youravong, W. 2016, Electroless Plating of Pd on Macro-Porous Alumina Support for H₂Purification, *Key Engineering Materials*, (675-676), 556-559
13. Mantaka Thuanthong, Nualpun Sirinupong, Wirote Youravong, 2016, 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*, 96: 3795-3800
14. Rusman, Dasaesamoh., Wirote, Youravong. and Santad, Wichienchot, 2016 Digestibility, fecal fermentation and anti-cancer of dragon fruit oligosaccharides, *International Food Research Journal*, 23(6): 2581-2587
15. Rusman, Dasaesamoh., Wirote, Youravong. and Santad, Wichienchot, 2016, Optimization on pectinase extraction and purification by yeast fermentation of oligosaccharides from dragon fruit (*Hyloceus undatus*), *International Food Research Journal*, 23(6): 2601-2607
16. Chiraphon Chaikiang, 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
17. 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

18. 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
19. 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
20. 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
21. 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
22. 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 Journal. (Nat. Sci.) 48 : 1 - 13
23. Watsa Khongnakorn., Weerapong Bootluc and Wirote Youravong, 2014, Surface Modification of CTA-FO Membrane by CO₂ Plasma Treatment, Journal of Teknol 70(2): 71-75
24. 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
25. Aporn, Laorko, Sasitorn Tongchitpakdee and Wirote Youravong, 2013, Storage quality of pineapple juice non-thermally pasteurized and clarified by microfiltration, J Food Engineering, 16(2): 554-561
26. 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
27. 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
28. Muhammadameen, Hajihama and Wirote, Youravong, 2013, Concentration and desalination of protein derived from tuna cooking juice by nanofiltration, J Teknol, 65(4): 1-6
29. 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
30. 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

31. 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
32. 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
33. 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
34. 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
35. 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.
36. 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
37. 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
38. 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
39. 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
40. 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
41. 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. *Songklanakarini J Sci Techno*, 28(4): 817-828
42. 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.
43. 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
44. Tachratanamane, R, Cherdrungsi, K. and Youravong, W, 2004, Fractionation of protein in surimi waste water using membrane filtration. *J. Teknologi*, 41(F): 1-10
45. Youravong, W, Lewis, M.J. and Grandison, A.S., 2003, Critical flux in ultrafiltration of skimmed milk. *Trans. IChemE, Part C*, 81: 303-308.
46. Youravong, W, Grandison., A.S. and Lewis, M.J., 2003, The effect of physicochemical change on critical flux of skimmed milk ultrafiltration , *Songklanakarini J Sci Techno*, 24 : 929-939

47. 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
48. 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 chapter

1. Youravong, W and Marthosa, S. 2017, Membrane Technology in Fish-processing Waste Utilization: Some Insights on Sustainability, Book chapter in *Sustainability Challenges in the Agro-food Sector*, Bhat, R (Ed). John Wiley & Sons, Inc., SBN: 978-1-119-07276-8
2. Charoenphun, N and Youravong, W. 2017. Utilization of by-products and waste generated from the tilapia processing industry, Book chapter in *Tilapia and Trout: harvesting, prevalence and benefits*, Barbara Richardson (Ed), Nova Science Publishers, Inc. ISBN: 978-1-53610-557-5.
3. 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 Medicine*, Fabian E. Dumont and Jack A. Sacco (Eds). Nova Science Publishers, Inc. ISBN: 978-1-60741-257-1.

Conference proceeding/attending

1. Wrote Youravong, Innovation Processing of Membrane Filtration for Foods: Minimum thermal pasteurization of fruit juice by microfiltration, the 21st Food Innovation Asia Conference, 13-15 June, 2019, BITEC, Bangkok, Thailand.
2. Wrote Youravong, Membrane technology as a minimum thermal process for the fruit juice industry, Invited speaker, the 13th International conference on membrane science and technology (MST2017), 16th November, 2017, Patra Jasa Hotel, Semarang, Indonesia
3. Wrote 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
4. Mantaka Tauntong, Wrote 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
5. Penporn Srinivorn, Santad Wichienchot and Wrote 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
6. Muhammadameen Hajihama, Wrote 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
7. Rusman Dasaesamoh, Wrote 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.
8. Kridsada Keawiyok, 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.
 9. 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.
 10. Penpron, Srinivorn., 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.
 11. 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.
 12. 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.
 13. 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.
 14. 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
 15. 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
 16. 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.
 17. Khatprathum, A ., Siriwongpaisaan, 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
 18. Khatprathum, A ., Siriwongpaisaan, 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

19. Sakpetch, P., Suntinalert, 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
20. 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
21. 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
22. Sakpetch, P., Suntinalert, 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
23. Rhittipairote, T, Youraovng, 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, Jahor, Malaysia.
24. 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, Jahor, Malaysia.
25. 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
26. Youravong, W, Flux and fouling during ultrafiltration of surimi wash water, the 5th international conference on membrane science and technology, 10-14th November 2003, UNESCO center for membrane science and technology, The University of New South Wales, Australia.

Consultancy

Fields

Process development for novel foods and bio-products, clean/green technology in agro-industry, Membrane technology: process development, system & plant design and industrial applications, thermal and non- thermal aseptic processing technology

Major industry

Membrane system manufacturing, Seafood industry, fruit & vegetable industry, dairy industry, functional food industry, palm oil industry, rubber industry

Technical training course/workshop

Course director/Trainer

- Membrane technology in the food, palm oil mill and rubber industries
- UHT technology for beverage and dairy industries
- Heat and mass transfer in food processing

Course Trainer

- Process authority of thermal process sterilization for the food industries
(Series of Food Safety Course of Thai Food and Drug Administration)
- Retort supervisor of thermal process sterilization for the food industries
(Series of Food Safety Courses of Food and Drug Administration, Thailand)