



## Curriculum Vitae

Institute of Nutrition, Mahidol University (INMU)

999 Phutthamonthon 4 Rd., Salaya, Phutthamonthon

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**Name** Thunnalin Winuprasith

ธัญญ์นลิน วิญญูประสิทธิ์

**Email Address** : [thunnalin.win@mahidol.ac.th](mailto:thunnalin.win@mahidol.ac.th)

**Current positions** : Assistant Professor

### Education

- 2014      Doctoral of Philosophy (Biotechnology) Faculty of Science, Mahidol University, Thailand
- 2009      Master of Science (Food and Nutrition for Development) Institute of Nutrition, Mahidol University, Thailand
- 2005      Bachelor of Science (Public Health) Faculty of Public Health, Mahidol University, Thailand

### Research interest and expertise

1. Food emulsions and encapsulations for controlling digestibility and release of nutrients and bioactive compounds in gastrointestinal tract
2. Nanocellulose for food applications
3. Food product development for nutritional purposes and food for the elderly with chewing and swallowing difficulties
4. Heat treatment using a water spray retort for sterilizing food products
5. Utilization of slow digestible starch and low glycemic sugar for specific purposes

### Research Experiences:

- 2019-Present:
- Modulating fat digestion of single and mixed colloidal delivery systems using nanocellulose (funded by Thailand Research Fund)
  - Development of swallowing practice kit for swallowing difficulty (dysphagia) patients (funded by Mahidol University, Pre-seed Fund)
  - Development of low glycemic index powdered food with complete nutrition from rice flour and vegetable powder (funded by NIA and Chiangmai Bioveggie Co., Ltd.)
  - Development of energy gel product (funded by iTAP and Boon Corporation Co., Ltd.)
  - Development of Nutritious Tube Feeding Diet Using Water Spray Retort (funded by Nutribay Company Limited)
  - Sensory evaluation of texture-modified pork, boiled rice product for elderly (funded by CP Foodlab Co., Ltd.)



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- Development of encapsulation and freeze dry technique promoting nutritional value stability in food products for specific people groups (Under Talent mobility program, Office of Higher Education Commission and Mahidol University, and CP Foodlab Co., Ltd.)
- 2018-2019:
  - Development of reduced-fat emulsion products using nanofibrillated cellulose as a functional ingredient preventing fat digestion (funded by Thailand Research Fund)
  - Development Healthy Thai Dessert from Reducing Rapidly Digestible Starch Content in Flour (Under Talent mobility program, Office of Higher Education Commission and Mahidol University, and CP Foodlab Co., Ltd.)
  - Development of low glycemic index rice pudding (funded by National Innovation Agency, Thailand)
- 2016-2018:
  - Development of vegetable powder pudding product for improving nutritional status in elderly with tooth loss (funded by Thailand Research Fund)
  - Encapsulation of vitamin D3 in Pickering emulsion fabricated using microfibrillated cellulose from mangosteen rind (*Garcinia mangostana* L.) and its *in vitro* digestion study (funded by Thailand Research Fund)
  - Development of nutritious boiled rice product for elderly (funded by CPram Co., Ltd.)
- 2012-2015:
  - Physicochemical Properties of Biopolymer-stabilized Colloidal Particles: Microfibrillated Cellulose-stabilized Emulsions and  $\beta$ -lactoglobulin-coated Gold Nanoparticles (The Royal Golden Jubilee Ph.D. Program funded by Thailand Research Fund)

## Publications

### International level (Peer review paper)

1. Surangna, J., **Winuprasith, T.**, & Suphantharika, M\*. (2020). Encapsulation of lycopene in emulsions and hydrogel beads using dual modified rice starch: Characterization, stability analysis and release behaviour during *in-vitro* digestion. *Food Hydrocolloids*, 104. <https://doi.org/10.1016/j.foodhyd.2020.105730>
2. Mitbumrung W., Jain S., & **Winuprasith T\***. (2020). Properties and stability of Pickering emulsions stabilized by nanofibrillated mangosteen cellulose: Impact of oil type and emulsifier concentration. *Songklanakarin Journal of Science and Technology*, 42(2), 468-476.
3. Rungraung, N., Trachootham, D., Muangpracha, N., Purttiponthanee, S., & **Winuprasith, T\***. (2020). Textural properties and sensory acceptability of texture-modified pork balls for the elderly. *Asia-Pacific Journal of Science and Technology*, 25(01), 1-10.
4. Surangna, J., **Winuprasith, T.**, & Suphantharika, M\*. (2020). Digestion behavior and gastrointestinal fate of oil-in-water emulsions stabilized by different modified rice starches. *Food & Function*, 11, 1087-1097.
5. Mitbumrung W., Suphantharika, M., McClements, D.J., & **Winuprasith T\***. (2019). Encapsulation of Vitamin D3 in Pickering Emulsion Stabilized by Nanofibrillated Mangosteen Cellulose: Effect of Environmental Stresses. *Journal of Food Science*, 84(11), 3213-3221. doi: 10.1111/1750-3841.14835.



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6. Pratiwi, I. A., Kemsawasd, V., & **Winuprasith, T\***. (2019). Storage stability of high fiber snack bar. *Global Health Management Journal*, 3(3), 124-137.
7. Suttireung, P., **Winuprasith, T.**, Srichamnong, W., Paemuan, W., Phonyiam, T., & Trachootham, D\*. (2019). Riceberry rice puddings: rice-based low glycemic dysphagia diets. *Asia Pacific Journal of Clinical Nutrition*, 28(3), 467-475. doi: 10.6133/apjcn.201906/PP.0003.
8. Treesattayakul, B., **Winuprasith, T.**, Theeranuluk, B., & Trachootham, D\*. (2019). Loss of posterior occluding teeth and its association with protein-micronutrients intake and muscle mass among Thai elders: A pilot study. *The Journal of Frailty & Aging*, 8(2), 100-103. <http://dx.doi.org/10.14283/jfa.2019.2>
9. Surangna, J., **Winuprasith, T.**, & Suphantharika, M\*. (2019). Design and synthesis of modified and resistant starch-based oil-in-water emulsions. *Food Hydrocolloids*, 89, 153-162.
10. **Winuprasith, T.\***, Khomein, P., Mitbumrung, W., Suphantharika, M., Nitithamyong, A., & McClements, D.J. (2018). Encapsulation of vitamin D<sub>3</sub> in Pickering emulsions stabilized by nanofibrillated mangosteen cellulose: Impact on in vitro digestion and bioaccessibility. *Food Hydrocolloids*, 83, 153-164.
11. **Winuprasith, T.** & Suphantharika, M\*. (2015). Properties and stability of oil-in-water emulsions stabilized by microfibrillated cellulose from mangosteen rind. *Food Hydrocolloids*, 43, 690-699.
12. Li, Y., Driver, M., **Winuprasith, T.**, Zheng, J., McClements, D. J., & He, L\*. (2014). In situ SERS detection of emulsifiers at lipid interfaces using label free amphiphilic gold nanoparticles. *Analyst*, 139, 5075-5078.
13. **Winuprasith, T.**, Suphantharika, M., He, L. & McClements, D. J\*. (2014). Alterations in protein corona around nanoparticles by biological surfactants: Impact of bile salts on  $\beta$ -lactoglobulin-coated gold nanoparticles. *Journal of Colloids and Interface Science*, 426, 333-340.
14. **Winuprasith, T.**, Suphantharika, M., McClements, D. J. & He, L\*. (2014). Spectroscopic studies of conformational changes of  $\beta$ -lactoglobulin adsorbed on gold nanoparticle surfaces. *Journal of Colloids and Interface Science*, 416, 184-189.
15. **Winuprasith, T.** & Suphantharika, M\*. (2013). Microfibrillated cellulose from mangosteen (*Garcinia mangostana* L.) rind: Preparation, characterization, and evaluation as an emulsion stabilizer. *Food Hydrocolloids*, 32, 383-394.

### National level (Peer review paper)

1. Amornsil, P., Winuprasith, T., & Trachootham, D\*. (2020). Effect of Nutri-Jelly Matrix on Cytotoxicity of Phenethyl Isothiocyanate in Oral Cancer Cells. *Thai Journal of Toxicology*, 35(1). (In press)
2. Choublab, P., & **Winuprasith, T.** (2019) Application of Nanofibrillated Cellulose Extracted from Mangosteen Rind as a Single Emulsifier in mayonnaise. *Srinakharinwirot University (Journal of Science and Technology)*, 11(22), 119-130.



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3. Chimkerd, C., Rungraung, N., Thiyajai, P., Purttiponthane, S., Sahasakul, Y., Trachootham, D., **Winuprasith, T\***. (2019). Formulation of vegetable pudding for elderly and their storage effect on total phenolics and antioxidant activities. *Srinakharinwirot University (Journal of Science and Technology)*, 11(21), 64-76.
4. Kaewsriro, P., On-Nom, N., Suttisansanee, U., **Winuprasith, T.**, Chamchan, R., Sriden, N., Aursalung, A., & Sahasakul, Y\*. Development of Healthy Tom Yum Flavored Rice Seasoning (Furikake) from Vegetable Powder. (2018). *Agricultural Science Journal*, 49, 165-168.
5. **ธัญญ์ณลิน วิญญูประสิทธิ์\***, ยราพร สหัสกุล, น้ำผึ้ง รุ่งเรือง. (2560). นาโนเซลล์โลส: การประยุกต์ใช้ในอาหารและความปลอดภัยอาหาร. *วารสารพิษวิทยาไทย*, 32, 67-79.
6. สายพิน แสงสุข, **ธัญญ์ณลิน วิญญูประสิทธิ์**, พรพรรณ ตีระพัฒน์, ฉัตรภา หัตถโกศล, พรอมลักษณ์ สมบูรณ์ปัญญากุล. (2559). ผลของสายพินธัญญ์ณลินที่มีต่อสมบัติทางเคมี-กายภาพของผลิตภัณฑ์เต้าหู้จากผลิตภัณฑ์ผลพลอยได้จากการสกัดน้ำมันถั่วดาวอินคา. *วารสารวิทยาศาสตร์เกษตร*, 47, 385-388.

### Commercialized innovations

1. Nutri-Pudding in retort pouch as a healthy snack under "Taste'n Time" brand
2. Texture-modified pork boiled rice for elderly with CPram

### Consultation and others

- 2017-Present Part-time lecturer in Food Business Program (FBM) at Collage of Management, Mahidol University, Thailand.
- 2017-Present Consultant at CP Foodlab Co., Ltd., Thailand.

### Article in magazine

1. Winuprasith, T. & Kittipongpittaya K. (2016). Coconut oil: 21st Century oil. Food Focus Thailand.
2. Winuprasith, T. (2016). Upcoming food trends: Functional foods and Excipient foods. Food Focus Thailand.

### Training

- 2019 Multi Mentoring System 2 (MMS2) by Thailand Research Fund (TRF) and Office of Higher Education Commission (OHEC) joined with Mahidol University (April 29, 2019 – May 1, 2019)
- 2017 *In vitro* fat digestibility measurement in food emulsions and microencapsulation technique, Food Biopolymers and Colloids Research Laboratory, Department of Food Science, University of Massachusetts, Amherst, USA. (August 2017 – January 2018)
- 2016 Technique for sensory evaluation and consumer testing, FoSTAT, Thailand



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- 2016 ACS training course communicating science to the public and publishing research, *Thailand*
- 2015 Transformative education and active learning, Mahidol University, *Thailand*
- 2014 Magnetic Resonance Imaging (MRI) for quality determination of marine products after freezing, Department of Food Science and Technology, Faculty of Marine Science, Tokyo University of Marine Science and Technology, *Japan*
- 2014 Physicochemical study of polysaccharide gel using Nuclear Magnetic Resonance (NMR) technique, Department of Food Science and Technology, Faculty of Marine Science, Tokyo University of Marine Science and Technology, *Japan*
- 2013 Spectroscopic studies, including surface-enhanced Raman scattering (SERS) technique of conformational changes of protein-coated gold nanoparticle, Food Biopolymers and Colloids Research Laboratory, Department of Food Science, University of Massachusetts, Amherst, *USA*.