



Name : Assoc. Prof. Thawien Wittaya (Bourtoom)

Education

Degree : Ph.D. (Food Technology) Chulalongkorn University, Bangkok, Thailand

Present employment :

Department of Material Product Technology
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Field of interest:

- Biopolymer from natural sources and their application in packaging.
- Active biopolymer food packaging.
- Packaging permeability and shelf-life of food products.

Current researches:

- Improvement of rice starch film properties by using physical, mechanical and chemical treatments.
- Production, properties and potential application of antimicrobial biodegradable films incorporated with antimicrobial compounds derived from plant materials
- Microencapsulation of antimicrobial and antioxidant compounds derived from plant materials and potential uses in food packaging.
- Production and Improvement of polysaccharide composite biodegradable packaging by cooperating with starch nanocrystals, cellulose and crystalline.

Awards:

- Project profession vote held by IRPUS.
- Thailand innovation awards (Southern region)
- Outstanding of poster presentation held by PSU (2007)

Publication:

- Woggum, T., Sirivongpaisal. P. and **Wittaya, T.** 2014. Properties and characteristics of dual-modified rice starch based biodegradable films. *International Journal of Biological Macromolecule*. 67: 490-502.
- Detduangchan, N., Sridach, W. and **Wittaya, T.** 2014. Enhancement of biodegradable rice starch films by using chemical crosslinking agents. *International Food Research Journal*. 21(3): 1189-1199.
- Wittaya, T.** 2013. Influence of Type and Concentration of Plasticizers on the Properties of Edible Film From Mung Bean Proteins. *KMITL Science and Technology Journal*. 13(1): 51-58.
- Narapakdeesakul, D., Sridach, W. and Wittaya, T. 2013. Synthesizing of Oil Palm Empty Fruit Bunch's Lignin Derivatives and Potential Use for Production of Linerboard Coating. Accepted for Publication in *Songklanakarin Journal of Science and Technology*. . 36(5): 705-703.
- Narapakdeesakul, D., Sridach, W. and **Wittaya, T.** 2013. Recovery, characteristics and potential use as linerboard coatings of lignin from oil palm empty fruit bunch's black liquor. *Industrial Crops and Products*. 50: 8-14.
- Narapakdeesakul, D., Sridach, W. and **Wittaya, T.** 2013. Synthesizing of oil palm empty fruit bunch's lignin derivatives and potential use for production of linerboard coating. *Songklanakarin Journal of Science and Technology*. 35: 705-713.
- Detduangchan, N and **Wittaya, T.** 2013. Effect of UV-treatment on the properties of biodegradable rice starch films. *International Food Research Journal*. 20(3): 1617-1626.
- Narapakdeesakul, D., Sridach, W. and **Wittaya, T.** 2013. Novel use of oil palm empty fruit bunch's lignin derivatives for production of linerboard coating. *Progress in Organic Coatings*. 76: 999-1005.
- Kaewpool, P., Sridach, W. **Wittaya, T.** 2013. Mechanical, thermal and structural properties of rice starch films reinforced with rice starch nanocrystals. *International Food Research Journal*. 20(1): 439-449.

- Narapakdeesakul, D., Sridach, W. and **Wittaya, T.** 2013. Development of oil palm empty fruit bunch's lignin for production of linerboard coating: effect of selected stabilizers on coating characteristics and coated linerboard properties. *Progress in Organic Coatings*. 76: 482-487.
- Jonjankiat, S., Sridach, W. and Wittaya, T. 2013. Effect of citric acid, PVOH and starch ratio on the properties of cross-linked poly (vinyl alcohol)/ starch adhesive. *Journal of Adhesion Science and Technology*. 27(15): 1727-1738.
- Jonjankiat, S. **Wittaya, T.** and Sridach, W. 2011. Improvement of poly(Vinyl Alcohol) adhesives with cellulose microfibre from sugarcane bagasse. *Iranian Polymer Journal*. 20 (4): 305-317.
- Kiatsomboon, N., Chantachum, S. and **Wittaya, T.** 2011. Antimicrobial Activity and the Properties of Edible Films Incorporated with Encapsulated Clove (*Eugenia caryophyllata* Thunb.) Oil. *International Food Research Journal*. 18(4): 1531-1541.
- Thongsane, P., Sridach, W. and **Wittaya, T.** 2011. Effect of palm pressed fiber (PPF) surface treatment on the properties of rice starch films. *International Food Research Journal*. 18: 287-302.
- Chana-Thaworn, J., Chanthachum, S. and **Wittaya, T.** 2011. Antimicrobial Activity and Characteristics of Edible Films Incorporated with Phayom Wood (*Shorea toluca*) Extracts. *International Food Research Journal*. **18: 39-54**
- Chana-Thaworn, J., Chanthachum, S. and **Wittaya, T.** 2011. Properties and Antimicrobial Activity of Edible Films Incorporated with Kiam Wood (*Cotyleobium lanceotatum*) Extracts. *LWT-Food Science and Technology*. **44(1): 284-292.**
- Thongsane, P., Sridach, W., Ariffin, F. and **Wittaya, T.** 2010. Characteristics and Properties of Edible Rice Starch Films Reinforced with Palm Pressed Fibers. *International Food Research Journal*. 17:535-547.
- Wittaya, T.** and Sopanodora, P. 2009. Effect of Some Process Parameters on the Properties of Edible Film Produced from Lizard Fish (*Saurida undosquamis*) Muscle. *KMITL Sci. Tech. J.* 9(1): 27-42
- Wittaya, T.** 2009. Microcomposites of Rice Starch Film Reinforced with Microcrystalline Cellulose from Palm Pressed Fiber. *International Food Research Journal*. 16: 493-500.
- Siripongvutikorn, S., Thongraung, C., Usawakesmanee, W., **Bourtoom, T.**, Thammarutwasik, P. 2009. Development of instant garcinia (*garcinia atroviridis*) tom-yum mix as a high acid seasoning. *Journal of Food Processing and Preservation* 33 (1): 74-86.

Book chapter

Thawien Wittaya. 2012. Protein-Based Edible Films: Characteristics and Improvement of Properties, pp. 43-40. In Eissa, A.A., ed. Structure and Function of Food Engineering. Intech Publisher, Croatia. 404 pp.

Thawien Wittaya. 2012. Rice Starch-Based Biodegradable Films: Properties Enhancement, pp. 103-134. In Eissa, A.A., ed. Structure and Function of Food Engineering. Intech Publisher, Croatia. 404 pp

Conferences/Meeting and Proceeding:

Srisuksai, W, and Wittaya, T. 2013. Improvement of biodegradable rice starch film property by using polyvinyl alcohol. Food Innovation Asia Conference 2013: Empowering SMEs through Science and Technology, 13-14 June 2013 Bangkok, Thailand.

Lurnanthapong, T., Pratyasaree, S. and **Wittaya**, T. 2012. Improvement of biodegradable rice starch-chitosan blend film properties by using UV treatment. Starch Update 2011; 6th International Conference on Starch Technology. 13-14 Feb, 2012. Bangkok, Thailand. Page 310-315.

Lumbenso, C., Thammarat, C. and **Wittaya**, T. 2012. Properties and characteristics of biodegradable film from “Kluay Nang Phaya” starch. Starch Update 2011; 6th International Conference on Starch Technology. 13-14 Feb, 2012. Bangkok, Thailand. Page 204-209.

Detduangchan, N., and **Wittaya**, T. 2011. Effect of UV-Treatment on Properties of Biodegradable Film From Rice Starch. *In* Proceedings of the International Conference on Biotechnology and Food Engineering 2011. Singapore. August 28-30.

Kaewpool, P. and **Wittaya**, T. 2010. Properties and Characteristics of Rice Starch Films Reinforced with Rice Starch Nanocrystals. *In* Proceedings of The International Conference on Applied Science Engineering and Technology 2010. Singapore. 25-27 August 2010.

Thawien Wittaya. 2009. Influence of Lipids on the Mechanical and Water Barrier Property of Edible Rice Starch-Methylcellulose Blend Film. *In* 11th Asean Food Conference 2009 “Food Science and Technology: Innovative Approaches and Opportunities for Global Market” October 21-23, 2009, Banda Seri Begawan, Brunei Darussalam. Page 435-443.

Jutaporn Chana-Thaworn, Supitchaya Chanthachum and **Thawien Wittaya**. 2009. Characteristics and Antimicrobial Activity of Edible Films Incorporated with Payom wood (*Shorea talura* Roxb) extracts. *In* 11th Asean Food Conference 2009 “Food Science and Technology: Innovative Approaches and Opportunities for Global Market” October 21-23, 2009, Banda Seri Begawan, Brunei Darussalam. Page 428-434.

- Kiatsomboon, N., Chantachum, S. and **Bourtoom, T.** 2009. Antimicrobial Activity and Properties of Edible Films Incorporated with Encapsulated Clove (*Eugenia caryophyllata* Thunb.) Oils. Paper will be present in “The 10th Annual Conference of Thai Society of Agricultural Engineering “International Conference on Innovations in Agricultural, Food and Renewable Energy Productions for Mankind”, 1-3 April 2009, Nakhon Ratchasima, Thailand.
- Chana-Thaworn, J., Chanthachum, S. and **Bourtoom, T.** 2009. Properties and Antimicrobial Activity of Edible Films Incorporated with Kiam Wood (*Cotyleobium lanceotatum*) Extracts. Paper will be present in “The 10th Annual Conference of Thai Society of Agricultural Engineering “International Conference on Innovations in Agricultural, Food and Renewable Energy Productions for Mankind”, 1-3 April 2009, Nakhon Ratchasima, Thailand.
- Thongsane, P., Sridach, W. and **Bourtoom, T.** 2009. Effect of Chemical Treatments on Palm pressed Fiber for Reinforcement of Edible Rice Starch Films. Paper will be present in “The 10th Annual Conference of Thai Society of Agricultural Engineering “International Conference on Innovations in Agricultural, Food and Renewable Energy Productions for Mankind”, 1-3 April 2009, Nakhon Ratchasima, Thailand.
- Chantaramee, Sridach, W. and **Bourtoom, T.** 2009. Effect of coating mediums on alkyd resin coating stability and coated paperboard properties. Paper will be present in “The 10th Annual Conference of Thai Society of Agricultural Engineering “International Conference on Innovations in Agricultural, Food and Renewable Energy Productions for Mankind”, 1-3 April 2009, Nakhon Ratchasima, Thailand.
- Keereekasetsuk, S. and **Bourtoom, T.** Production and characteristic of edible film produced from red bean proteins Paper will be present in “The 10th Annual Conference of Thai Society of Agricultural Engineering “International Conference on Innovations in Agricultural, Food and Renewable Energy Productions for Mankind”, 1-3 April 2009, Nakhon Ratchasima, Thailand.
- Prukpatpong, T. Sridach, W. and **Bourtoom, T.** 2009. Effect of coating mediums on alkyd resin coating stability and coated paperboard properties. Paper will be present in “The 10th Annual Conference of Thai Society of Agricultural Engineering “International Conference on Innovations in Agricultural, Food and Renewable Energy Productions for Mankind”, 1-3 April 2009, Nakhon Ratchasima, Thailand.