Name: Dr. Uschara Thumarat

Education:

Degree: Ph.D. (Applied Microbiology), Kyoto Institute of Technology, Japan
M.Sc. (Biotechnology), Prince of Songkla University, Thailand
B.Sc. (Biology), Prince of Songkla University, Thailand

Awards:

1. Outstanding thesis in the year 2008 from Faculty of Agro-Industry, Prince of Songkla University, Thailand.

2. Best student poster award for the poster entitled "Characterization of thermostable polyester-degrading enzyme from *Thermobifida alba* AHK119" Asia Pacific Biochemical Engineering Conference, November 24-28, 2009, Kobe, Japan.

Field of interest: Molecular Biotechnology, Environmental Biotechnology, Enzyme Technology

Current researches:

1. Isolation and screening of polyester-degrading actinomycetes
2. Isolation and screening of pesticide-degrading actinomycetes
3. Isolation and screening of *plant growth promoting rhizobacteria*
4. Gene cloning, expression, characterization and improvement of activity of novel polyester depolymerases
5. Gene cloning, expression, characterization and improvement of activity of novel pesticide-degrading enzymes
6. Genetic engineering in yeasts to improve bioethanol production

Publication:

Journals:

Hu, X., **Thumarat, U**., Zhang, X., Tang, M. and Kawai, F. 2010. Diversity of polyester-degrading bacteria in compost and molecular analysis of a thermoactive esterase from *Thermobifida alba* AHK119. Appl Microbiol Biotechnol. 87: 771-779. impact factor 3.425

Thumarat, U., Nakamura, R., Kawabata, T., Suzuki, H. and Kawai, F. 2012. Biochemical and genetic analysis of a cutinase-type polyesterase from a thermophilic *Thermobifida alba* AHK119. Appl Microbiol Biotechnol. 95: 419-430. impact factor 3.425

Kitadokoro, K., **Thumarat, U.**, Nakamura, R., Nishimura, K., Karatani, H., Suzuki, H. and Kawai, F. 2012. Crystal structure of cutinase Est119 from *Thermobifida alba* AHK119 that can degrade modified polyethylene terephthalate at 1.76 Å resolution. Polym Degrad Stab. 97: 771-775. impact factor 2.770

Proceedings:

Thumarat, U., Kawai, F., Harnpicharnchai, P. and Upaichit, A. 2008. Screening of lipases and cloning a lipase-coding gene from thermotolerant *Bacillus thermoamylovorans* strain BHK52 isolated from compost. 9th National Grad Research Conference. 14-15 March 2008, Chonburi,Thailand

Thumarat, U., Ohara, H. and Kawai, F. 2010. Biochemical analysis of a polyester depolymerase from a moderate thermophile *Thermobifida alba* AHK119. The proceedings of 22nd Annual Meeting and International Conference of the Thai Society for Biotechnology "TSB 2010: Biotechnology for Healthy Living", 20-22 October 2010, Trang province, Thailand.

Book:

F. Kawai, **U. Thumarat**, K. Kitadokoro, T. Waku, T. Tada, N. Tanaka, T. Kawabata (2013) In Green Polymer Chemistry: Biocatalysis and Materials II (H. N. Chen, R. A. Gross and P. B. Smith, eds), Comparison of polyester-degrading cutinases from Genus *Thermobifida*. ACS Symp. Series Vol. 1144, Chapt. 9, pp. 111-120, American Chemical Society, Washington DC.

Presentation:

Thumarat, U., Kawai, F., Harnpicharnchai, P. and Upaichit A. 2008. Screening of lipases and cloning a lipase-coding gene fromthermotolerant *Bacillus thermoamylovorans* strain BHK52 isolated from compost. 9th National Grad Research Conference. 14-15 March 2008, Chonburi,Thailand

Thumarat, U., Upaichit, A., Harnpicharnchai, P. and Kawai, F. 2009. Gene cloning and characterization of a novel thermoactive and thermostable lipase from *Bacillus thermoamylovorans* BHK52 isolated from compost. Annual Meeting of Japan Society for Bioscience, Biotechnology, and Agrochemistry 2010. 27-29 March 2009, Fukuoka, Japan

Thumarat, U., Hu, X., Nakamura, R., Suzuki, H., Ohara, H. and Kawai, F. 2009. Characterization of thermostable polyester-degrading enzyme from *Thermobifida alba* AHK119. Asia Pacific Biochemical Engineering Conference. 24-28 November 2009, Kobe, Japan.

Thumarat, U., Hu, X., Ohara, H. and Kawai, F. 2009. Characteration of thermostable polyester-degrading enzyme from *Thermobifida alba*AHK119. Capacity Building and Development of Microbial Potential and Fermentation Technology towards New Era. 10-11 October 2009. Yamaguchi, Japan

Thumarat, U., Suzuki, H., and Kawai, F. 2010. Improvement on activity and thermostability of a polyester depolymerase from a moderate thermophile *Thermobifida alba* AHK119. Capacity Building and Development of Microbial Potential and Fermentation Technology towards New Era. 4-5 September 2010. Yamaguchi, Japan

Thumarat, U., Ohara, H. and Kawai, F. 2010. Biochemical analysis of a polyester depolymerase from a moderate thermophile *Thermobifida alba* AHK119. The proceedings of 22nd Annual Meeting and International Conference of the Thai Society for Biotechnology "TSB 2010: Biotechnology for Healthy Living", 20-22 October 2010, Trang province, Thailand.