

WARANYOO PULSAWAT (PhD)

Current position: Lecturer

Affiliation:

Department of Microbiology
Faculty of Science
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- Education:**
- PhD (Biotechnology) (2001-2006) School of Biotechnology and Biomolecular Sciences, Faculty of Science, University of New South Wales, NSW, Australia
 - MAppSc (Biotechnology) (1999-2000) School of Biotechnology and Biomolecular Sciences, Faculty of Science, University of New South Wales, NSW, Australia
 - B.Sc. (Microbiology) (1995-1998) Department of Microbiology, Faculty of Science, Chulalongkorn University, Bangkok, Thailand
- Professional Experiences:**
- Visiting researcher (2009 and 2011) Bio/Polymers Research Group (BRG), BABS, University of New South Wales, NSW, Australia
 - Conference bidder (June 2004) For ISEB VIII, 7th International society of Environmental Biotechnology, ISEB VII, Chicago, IL, USA
 - Scientific committee (Mar 2012) For “Biotechnology Summit 2012”. International Foundation for Biotechnology Research & Early Stimulation in the culture of Health, Nutrition, Sport, Art Science, Technology & Society. A.C. nonprofit Organization. 12nd-21st March 2012. Merida, Yucatán, México.
- Research interests:**
- Metal Bioremediation by microbes and microbial biomaterials and simulation of bioremediation mechanism.
 - Oxidation of divalent metal ions by bacteria.
 - Microbial exopolysaccharides (native, chemical and enzymatic modifications) and their potential environmental, biotechnological and medical applications such as novel biosorbents, drug delivery, anticoagulant, antioxidants, antiproliferative and antimicrobial agents.
 - Isolation, identification, characterization, conventional and genetic modification optimization, and applications of microbial hydrolytic enzymes for polysaccharides.
- Peer-reviewed publications:**
- Khanitchaidecha*, P. and [Pulsawat, W.](#) 2015. Purification and Characterization of Heparin Degrading Enzyme by isolated bacteria from brackish sediment” Proceeding of The 6th International conference on Fermentation Technology for Value Added Agricultural Products. July 29-31, 2015; Khon Kaen, Thailand, p. 418-424.
- Tongmalee*, S. and [Pulsawat, W.](#) 2015. Synthesis and biological activity of sulfated polymannuronic acid (PMS) and polyguluronic acid (PGS). Proceeding of Burapha University Conference 2015 “Moving Forward to a Prosperous and Sustainable Community”. ;July 10-12, 2015; Chon Buri, Thailand, p.662-669.

- Pulsawat*, W.** and Tongmalee, S. 2015. Synthesis and Anticoagulant activity of Sulfated alginate. *KKU. Res. J.*, 19(6+):60-66.
- Pulsawat*, W.** and Chayansupap, K. 2015. Synthesis and Anticoagulant activity of Sulfated pectin. *KKU. Res. J.*, 19(6+):134-140.
- Krethathorn*, S. and **Pulsawat, W.** 2014. Characterization of alginate degrading bacteria *Microbulbifer* sp. Strain S5 isolated from marine sediment in Samutsongkhram province. Proceeding in the 11st international KU-KPS conference, December 8-9, 2014; Nakorn Pathom, Thailand, p.
- Pulsawat*, W.** and S. Thongmalee. 2012. Chemical depolymerization and sulfation of sodium alginate for anticoagulant and antibacterial activities. Proceeding of the 24th Annual Meeting of the Thai Society for Biotechnology “Renewable Energy and Global Care”; 2012 Nov 29-30; Ubon Ratchathani, Thailand. p. 127-132.
- Pulsawat*, W.** and P. Khanitchaidecha. 2012. Screening and Environmental Factors Effecting on Growth of Heparinase-Producing Bacteria. *KKU Res. J.*, 17(4):593-606.
- Pulsawat, W.,** Leksawasdi, N., Rogers, P.L., Foster*, L.J. 2003. Anions effects on biosorption of Mn (II) by extracellular polymeric substance (EPS) from *Rhizobium etli*. *Biotechnology Letters*, 25(25):1267-1270.

Oral presentations and published abstracts:

- Pulsawat*, W.** and P. Khanitchaidecha. Screening and Environmental Factors Effecting on Growth of Heparinase-Producing Bacteria. The 4th International Conference on Fermentation Technology for Value Added Agricultural products. Khon Kaen, Thailand. 29th - 31st August 2011.
- Pulsawat*, W.** and L.J.R. Foster. EPS-alginate beads: Characterization and Metal Biosorption Application Macro- and Supramolecular Architectures and Materials: Synthesis, Properties and Applications, 4th International Symposium MAM-08, Heinrich Heine Universität, Düsseldorf, Germany. 7th - 11st September 2008.
- Pulsawat, W.** and L.J.R. Foster*. EPS produced by *R. etli* M4 and its potential applications in Biomaterials Science. The international conference on Bionanotechnology: A chapter of Life, Bangkok, Thailand 2nd-5th November 2005.
- Pulsawat, W.** and L.J.R. Foster*. Metal biosorption by EPS produced from *R. etli*. 3rd Annual Symposium, School of Biotechnology & Biomolecular Sciences, Sydney, Australia. 7th November 2004.

Poster presentations and published abstracts:

- Pulsawat* W.** Induced and Constitutive Heparin degrading enzymes from bacteria isolated from brackish and marine sediments. 7th International Conference on Proteoglycans. Sydney, Australia, 16th – 21st October 2011.
- Pulsawat, W.** and L.J.R. Foster*. Encapsulation of EPS-alginate for Metal bioremediation. 4th European Bioremediation Conference, Mino Palace Hotel, Chania, Crete, Greece 3rd – 6th September 2008.
- Pulsawat, W.** and L.J.R. Foster*, Effect of C:N ratio and manganese ions on exopolysaccharides produced by *R. etli*. 7th International Hydrocolloids Conference VII, Melbourne, VIC, Australia, 29th August – 1st September 2004.
- Pulsawat, W.** and L.J.R. Foster*. Characterization of an extracellular polymeric substances synthesized by a novel strain of *R. etli*. 7th International Hydrocolloids Conference VII, Melbourne, VIC, Australia, 29th August – 1st September 2004.
- Pulsawat, W.** and L.J.R. Foster*. Biopolymers synthesized by a novel strain of *R. etli* and its applications in bioremediation. 7th International society of Environmental Biotechnology, ISEB VII, Chicago, IL, USA, 18th -21st June 2004.

Pulsawat, W. and L.J.R. Foster*. Metal Biosorption by EPS produced from *R. etli* M4. 2nd Annual Symposium, School of Biotechnology & Biomolecular Sciences, Sydney, Australia, 7th November 2003.

Pulsawat, W. and L.J.R. Foster*. Anion effects on Manganese Biosorption by EPS from *R. etli* M4, 1st Biothailand Technology for Life, Pattaya, Thailand, 17th -21st July 2003.

Pulsawat, W., and L.J.R. Foster*. Extracellular Polymeric Substances produced by *Rhizobium etli* M4 and its potential applications for heavy metal bioremediation, Annual Symposium, School of Biotechnology & Biomolecular Sciences, Sydney, Australia, 8th November 2002.

Pulsawat, W. and L.J.R. Foster*. EPS from *Rhizobium etli* M4 and heavy metals bioremediation. 7th International Biodeterioration & Biodegradation, IBBS XII, Prague, Czech Republic , 14th -18th July 2002.

Note: * Corresponding author

Responsibilities:

- Teaching (Bachelor, Master and PhD students)
- Supervising (June 2006- dated: 1 PhD student, 4 Master project students, 34 Bachelor project students)
- Project leader and Research
- Administration committee of the Faculty of Science, Silpakorn University
- Invited reviewer of Veridian Journal (classified in TCI, Thai Journal Citation Index Centre)

Teaching courses:

084 106 Science and Technology in ASEAN community (co-teaching 33%)
518 201 General Microbiology (co-teaching 20%)
518 202 General Microbiology Laboratory (co-teaching 20%)
518 341 Environmental Microbiology (course director and teaching 85%)
518 342 Environmental Microbiology Laboratory (course director and teaching 85%)
518 391 Project proposal (co-teaching 50%)
518 433 Introduction to Fermentation Technology (co-teaching 50%)
518 434 Introduction to Fermentation Technology Laboratory (co-teaching 50%)
518 441 Biodegradation and Bioremediation Microbiology
(course director and teaching 100%)
518 491 Seminar in Microbiology (average supervising 15% of class)
518 493 Research Project I (averagely supervised 4 students / semester)
518 494 Research Project II (averagely supervised 4 students / semester)
518 501 Advanced Microbiology (co-teaching 20%)
518 524 Microbial Physiology Laboratory (co-teaching 50%)

**Grants and
Research Funding
projects:**

1. **Grant resource:** Research grant for researcher of Silpakorn University. Silpakorn University Research and Development Institute (SURDI).
Research duration: Oct 2015- Sep 2016
Project title: “Chemical and enzymatic modifications of alginate and its derivatives for drug delivery and cell/protein encapsulation applications.”
2. **Grant resource:** The research grant for ISI publications. The Faculty of Science. Silpakorn University.
Research duration: Oct 2012- Sep 2013
Project title: “Determination of enzyme activities and characters of heparinases from the bacteria isolated from brackish and marine sediment samples in Thailand.”
3. **Grant resource:** The Higher Education Research Promotion grant. The office of the Higher Education Commission (MAU).
Research duration: Oct 2011- Sep 2012
Project title: “Influence of Environmental factors effecting on growth and heparinase production capability of bacteria isolated from soil sediments in Thailand.”
4. **Grant resource:** The Faculty of Science New researcher grant, Silpakorn University.
Research duration: Oct 2011- Sep 2012
Project title: “Isolation of Heparinase producing bacteria and determination of enzyme activity.”
5. **Grant resource:** Research grant for new researcher of Silpakorn University. Silpakorn University Research and Development Institute (SURDI).
Research duration: Oct 2009- Sep 2011
Project title: “Chemical modification of Microbial polysaccharides as precursor for Anticoagulant (Heparin-like) and bioactive compound productions.”
6. **Grant resource:** TRF grant for new researcher. The Thailand Research Fund (TRF).
Research duration: Oct 2008- Sep 2010
Project title: “Growth conditions effecting production of Extracellular Polymeric Substances (EPS) in *Rhizobium* spp.”
7. **Grant resource:** The Faculty of Science research grant, Silpakorn University.
Research duration: Oct 2008- Sep 2009
Project title: “Immobilization of *Rhizobium etli* M4 and its extracellular polysaccharide substances (EPS) for heavy metal bioremediation.”

**Professional
memberships:**

- American Society of Microbiology (ASM)
- Thai society for Biotechnology (TSB)