



CURRICULUM VITAE

Wannapawn Watsuntorn , Ph.D.

PERSONAL INFORMATION

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Sex Female
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Nationality Thai
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RESEARCH INTEREST

- Isolation, characterization, identification of novel microorganism from natural sources and applying for pollutant biodegradation
- Waste gas treatment in bioreactors, especially biotrickling filter
- Improvement of lipid production by using oleaginous microorganisms
- Microbial lipid production from lignocellulosic wastes/biomass

EDUCATION

Period 2013-2017
Degree Ph.D.
Name of organization Chulalongkorn University, Ph.D.
GPA 3.94/4.00
Major Biotechnology
Award Awarded the highest score of Ph.D. defense from Program in Biotechnology
Principle subjects covered Thesis title: “Hydrogen sulfide removal by nitrate reducing and sulfide oxidizing bacteria in anoxic bioreactors”
Mobility IHE-Delft Institute for Water Education, Delft, The Netherlands (June 2017- April 2018)

Period 2009-2012
Degree B.Sc.
Name of organization Chulalongkorn University, B.Sc.
GPA 3.33/4.00
Major Genetics
Principle subjects covered Thesis title: “Methylation and expression of *CCNA1* in endometriosis”

WORK EXPERIENCE

Period	2013-2015
Topic	Hydrogen sulfide removal in biogas production by using microorganisms, in collaboration with PTT Research & Technology Institute
Period	October 2018-present
Topic	Microbial lipid cultivation and lipid extraction for bio jet synthesis.
Funding organization	National Research Council of Thailand (NRCT)

PERSONAL SKILLS

Language	English (Good skills of listening, reading, speaking and writing)
Communication skills	Good communication skills gained through oral presentations of the research works
Computer skills	Microsoft Office Tools (Word, Excel and Power Point), Statistical analysis in SPSS and sigma plot)

SCIENTIFIC SKILLS

- Strong experience in the isolation, characterization, identification and maintenance of bacteria, especially nitrate-reducing and sulfide-oxidizing bacteria (NR-SOB).
- Cultivation of anaerobic microorganisms and developing methods for microbial techniques.
- Strong experience in the screening, isolation, cultivation and lipid extraction of oleaginous yeasts.
- Cultivation of fungi
- Molecular techniques: DNA extraction, gel electrophoresis, RNA extraction, PCR primer design.
- Scanning electron microscope (SEM) sample preparation and analysis.
- Experience in biotrickling filter (BTF) installation, operation and trouble shooting.
- Able to use gas chromatography (GC), ion chromatography (IC), thin layer chromatography (TLC) and high-performance liquid chromatography (HPLC).
- Bioinformatics (genomic sequences, genomic alignment, molecular phylogeny and evolution, microbiome analysis etc.).
- Microbiome analysis based on 16S rRNA gene from various sources including the anaerobic samples.

PUBLICATIONS

RESEARCH ARTICLES

- Watsuntorn, W.**, Ruangchainikom, C., Rene, E.R., Lens, P.N.L., Chulalaksananukul, W., 2017. Hydrogen sulfide oxidation under anoxic conditions by a nitrate-reducing, sulfide-oxidizing bacterium isolated from the Mae Um Long Luang hot spring, Thailand. *Int. Biodeterior. Biodegradation*. 124, 196-205.
- Watsuntorn, W.**, Ruangchainikom, C., Rene, E.R., Lens, P.N.L., Chulalaksananukul, W., 2018. Comparison of sulphide and nitrate removal from synthetic wastewater by pure and mixed cultures of nitrate-reducing, sulphide-oxidizing bacteria. *Bioresour. Technol.* 272, 40-47.
- Watsuntorn, W.**, Khanongnuch, R., Chulalaksananukul, W., Rene, E. R., Lens, P.N.L. 2019. Resilient performance of an anoxic biotrickling filter for hydrogen sulphide removal from a biogas mimic: Steady, transient state and neural network evaluation. *J. Clean. Prod.* 119351.
- Watsuntorn, W.**, Kojonna, T., Rene, E.R., Lens, P.N.L., Chulalaksananukul, W., 2019. Draft genome sequence and annotation of *Paracoccus versutus* MAL 1HM19, a nitrate-reducing, sulfide oxidizing bacterium. *Microbiol. Resour. Announc.*

REVIEW ARTICLE

- Watsuntorn, W.**, Seehone, W., Ruangchainikom, C., Sachakamol, P., Chavanparit, O., Chulalaksananukul, S., Chulalaksananukul, W., 2014. Hydrogen sulfide reduction in gas production system by biological processes. *Srinakharinwirot Sci. J.* 30, 187-202. (In Thai).

MANUSCRIPTS IN PREPARATION/SUBMITTED FOR REVIEW

- Watsuntorn, W.**, Chuengcharoenphanich, N., Niltaya, P., Butkumchote, C., Theerachat, M., Glinwong, C., Chulalaksananukul, W., 2019. Enhancement of lipid production by *Saccharomyces cerevisiae* strain CU-TPD4, a novel isolated oleaginous yeast from coconut factory in Thailand (Submitted to Renewable Energy- Under review).
- Prikyai, K., **Watsuntorn, W.**, Rene, E.R., Visvanathan, C., 2020. Performance of an air membrane bioreactor for methanol removal under steady and transient state conditions (In preparation).
- Chuengcharoenphanich, N., **Watsuntorn, W.**, Niltaya, P., Butkumchote, C., Chulalaksananukul, W., 2019. Potential of oleaginous yeast isolated from natural sources in Thailand for biodiesel production (In preparation).
- Watsuntorn, W.**, Chuengcharoenphanich, N., Rene, E.R., Chulalaksananukul, W., 2020. Perspective and challenges of Oleaginous microorganisms for industrial applications-A review (In preparation).

PATENT

Method for hydrogen sulfide removal using sodium molybdate solution (ref. 1601006324)

CONFERENCE PRESENTATIONS

ORAL PRESENTATIONS

Watsuntorn, W., Ruangchainikom, C., Rene, E.R., Lens, P.N.L., Chulalaksananukul, W., 2016. Isolation and characterization of nitrate-reducing, sulfide-oxidizing bacteria from Mae Um Long Luang hot spring (Thailand): Anaerobic hydrogen sulfide oxidation under brine conditions. Challenges in Environmental Science and Engineering (CESE), 6-10 November 2016, Kaohsiung, Taiwan.

Watsuntorn, W., Niltaya, P., Butkumchote, C., Chuengcharoenphanich, N., Chulalaksananukul, W., 2019. Screening of oleaginous yeasts for lipid production from coconut factory. 1st International Conference on Biotechnology, Bioengineering, Biorefinery, and Pollution Prevention, 1-2, August, 2019, Bangkok, Thailand. **(Outstanding Scientific Research Oral Presentation Award)**

Prikyai, K., **Watsuntorn, W.**, Rene, E., R., Visvanathan, C. (2019). Performance of an air membrane bioreactor (aMBR) for methanol removal under steady and transient state conditions. 1st International Conference on Biotechnology, Bioengineering, Biorefinery, and Pollution Prevention, 1-2, August, 2019, Bangkok, Thailand.

POSTER PRESENTATIONS

Watsuntorn, W., Rene, E.R., Lens, P.N.L., Chulalaksananukul, W. 2017. Simultaneous H₂S and NO₃⁻ removal using different NR-SOB strains isolated from hot springs in Thailand. 7th International Conference on Biotechniques for Air Pollution Control and Bioenergy (Biotechniques-2017), La Coruña, 9-21 July 2017. Spain. **(Best Poster Award)**.

Watsuntorn, W., Rene, E.R., Lens, P.N.L., Chulalaksananukul, W. 2017. Simultaneous H₂S and NO₃⁻ removal using different NR-SOB strains isolated from hot springs in Thailand. IHE Delft PhD Symposium 2017 "Climate Extremes and Water Management Challenges", Delft, 2-3 October 2017. The Netherlands.

Watsuntorn, W., Khanongnuch, R., Chulalaksananukul, W., Rene, E.R., Lens, P.N.L. 2018. Anoxic biotrickling filter inoculated with *Paracoccus versutus* strain MAL 1HM19. Challenges in Environmental Science and Engineering (CESE 2019), 3-8 November 2018, Bangkok, Thailand.

Chuengcharoenphanich, N., **Watsuntorn, W.**, Niltaya, P., Butkumchote, C., Chulalaksananukul, W., 2019. Comparison the fatty acid profile of *Candida tropicalis*, oleaginous yeasts, isolated from mangrove forest in Songkhla, Thailand. 1st International Conference on Biotechnology, Bioengineering, Biorefinery, and Pollution Prevention, 1-2, August, 2019, Bangkok, Thailand.

TEACHING EXPERIENCE

TEACHING ASSISTANT

1 st semester 2014	Industrial botany laboratory
2 nd semester 2014	Applications of genetic knowledge
1 st semester 2015	Applications of genetic knowledge
2 nd semester 2015	Biochemical genetics
1 st semester 2016	Biochemical genetics
1 st semester 2018	Genetics for life
1 st semester 2019	Genetics for life
9-10 March 2019	DNA training program for high school teacher)#1 at Center Learning Network for the Region (CLNR) (Nan province, Thailand)
May 2019	DNA training program for high school teacher)#2 at Center Learning Network for the Region (CLNR) (Nan province, Thailand)

TRAINING EXPERIENCE

Period	10-12 October 2018
Topic	Microbiome workshop (16S rRNA gene sequencing from samples to analysis), Omics Sciences & Bioinformatics center, Faculty of Science, Chulalongkorn University Thailand.
Period	6-20 November 2018
Topic	International training workshop on Renewable Energy Technology and Industry Development in Belt & Road countries, Guangzhou Institute of Energy Conversion, Guangzhou, China.

POSSIBLE TEACHING COURSES

- General Microbiology
- General Microbiology Laboratory
- Biotechnology /Microbial Biotechnology
- Microbial genetics
- Fermentation Technology
- Environmental Biotechnology
- Industrial Microbiology
- Genetics

REFERENCES

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Name Eldon R. Rene, Ph.D.
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The Netherlands
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