

EDUCATION (ORCID: 0000-0001-9077-7662)**2017.10 ~ 2022.06 University of Copenhagen (UCPH), Copenhagen, Denmark****PHD**

PhD Degree in Microbiology

Grade: 33.6/30 ECTS

- Major in Microbiology
- PhD Project: Strategies and Barriers to Avoid the Spread of Antibiotic Resistance Genes in Wastewater Treatment Plants
- PhD Thesis Title: The Wastewater Plasmidome and its Derived Resistome: Insight into Their Dynamics in the Urban Water Systems
- Keywords: ARGs, Antibiotic Resistome, Plasmids, Plasmidome, Urban Water Systems

2014.09 ~ 2017.08 Tongji University (TJU), Shanghai, China**MSC**

Master's Degree in Engineering

Average Score: 88/100

- Major in Environmental Engineering (Division: Solid Waste)
- Master's Project: Emerging Contaminants (Antibiotic Resistance Genes) in Municipal Solid Waste (MSW) Landfills
- Master's Thesis Title: Fate of Antibiotics and Antibiotic Resistance Genes in Municipal Solid Waste under Anaerobic Treatment Conditions
- Keywords: Antibiotic Resistance Genes, Mobile Genetic Elements, Landfill Leachates, qPCR, Humic Acids

2010.09 ~ 2014.06 Zhejiang University of Technology (ZJUT), Hangzhou, Zhejiang, China**BSC**

Bachelor's Degree in Science

GPA: 3.5/4.0

- Major in Environmental Science (Environmental Toxicology)
- Bachelor's Thesis Title: Enantioselectivity in Aquatic Toxicity of Synthetic Pyrethroid Insecticides Bifenthrin, Cyhalothrin and Permethrin
- Keywords: Enantioselectivity, Environmental Toxicity, Synthetic Pyrethroid, Zebrafish, Thyroid Development

EXPERIENCE (RESEARCH & WORK)**2022.07 ~ 2022.09 Section of Microbiology, Department of Biology, UCPH****WORK**

- [FULL-TIME] Research Assistant: Conduct the Swine Gut Plasmidome Project

2020.09 ~ 2021.02 Barth F. Smets' Group, Department of Environmental Engineering, Technical University of Denmark (DTU), Lyngby, Denmark**RESEARCH**

- [ENVIRONMENT CHANGE FOR PHD STUDENT] Mobile Antibiotic Resistance Content Changes along with Three Different Swedish Wastewater Treatment Systems (with Different Operating Procedures)

2017.10 ~ 2022.06 Søren Johannes Sørensen's Group, Section of Microbiology, Department of Biology, UCPH**WORK**

- [FULL-TIME] PhD Project on the Strategies and Barriers to Avoid the Spread of Antibiotic Resistance Genes in Wastewater Treatment Plants
- [CONFERENCE/ORAL TALK] 15th Symposium on Bacterial Genetics and Ecology, Lisbon, Portugal, 2019
- [CONFERENCE/POSTER] 5th International Symposium on the Environmental Dimension of Antibiotic Resistance, Hong Kong, 2019
- [CONFERENCE/POSTER] The Danish Microbiological Society Congress, Copenhagen, Denmark, 2018 and 2019
- [ORGANIZING COMMITTEE] PhD Day of the Department of Biology, UCPH, Copenhagen, Denmark, 2018



2016.09 ~ 2017.03 Raffaello Cossu's and Roberto Raga's Group, Department of Industrial Engineering, University of Padua (UNIPD), Padua, Italy **RESEARCH**

- [EU PROGRAMME, ERASMUS+] Higher Education Student Mobility, 2016/2017: Prevalence and Proliferation of Antibiotic Resistance Genes and Heavy Metal Resistance Genes in MSW Landfills in Italy
- [CONFERENCE/PARTICIPATED] 6th International Symposium on Energy from Biomass and Waste, Venice, Italy, 2016

2014.09 ~ 2017.08 Institute of Waste Treatment & Reclamation, TJU **WORK**

- [PART-TIME] Research Assistant: Duty of Lab Work and Daily Office Work
- [CONFERENCE/ORAL TALK AND POSTER] 9th Intercontinental Landfill Research Symposium, Hokkaido, Japan, 2016
- [ORGANIZING COMMITTEE] 2nd Symposium of Asian Regional Branch of International Waste Working Group, Shanghai, China, 2015

2013.03 ~ 2014.05 International Joint Research Center for Persistent Toxic Substances & Research Center of Green Chirality, ZJUT **WORK**

- [PART-TIME] Research Assistant: Responsible for Daily Lab Work

2012.07 ~ 2013.01 Institute of Catalytic Reaction Engineering, ZJUT **WORK**

- [PART-TIME] Research Assistant: Help on the Study of Activity and Sulfur Resistance of Pt-Pd/CeO₂ Catalysts for the Oxidation of Diesel Exhaust
- [CONFERENCE/PARTICIPATED] Sino-Japan Teenage Symposium on Environmental Management & Policies, Zhejiang, China, 2013

PERSONAL

Technical Competencies

- Large-scale Environmental Samples (n > 200) Processing and Pre-Treatment
- Traditional Environmental Experiments including Toxicity Experiments using the Zebrafish Model, etc.
- Traditional Chemistry and Physicochemical Experiments including IR, GC, HPLC, LC-MS and ICP-MS, etc.
- Traditional Microbiology Experiments including Culturing, Plating, AST and MIC Tests for Antibiotic Resistance Phenotyping, Exogenous Plasmid Isolation using Filter Mating Assays, etc.
- Molecular Microbiology Experiments including PCR/qPCR/Multiplex PCR
Cloning using Plasmid Vectors
Total Genomic and Plasmid DNA Isolation and Purification (by Robot and Manually)
Illumina and Nanopore Sequencing Libraries Preparation and Load on Devices
Basic flow cytometry knowledge and user experience
Cell staining, counting and sorting, etc.
- Desktop Office Work: Microsoft Office/Apple iWork/Adobe Creative Cloud
- Data Analysis: IBM SPSS/Microsoft Excel
- Basic R Studio Knowledge and User Experience
- Scientific Graphics: OriginPro/SIMCA/Prism GraphPad/Biorender/Geneious Prime/SnapGene/Adobe Illustrator, etc.

Fieldwork

- 2013.07.01 ~ 15** • Hangzhou Iron & Steel Group Company, Hangzhou, Zhejiang Province, China
- 2013.07.16 ~ 31** • Nanxing Drinking Water Treatment Plant, Hangzhou, Zhejiang Province, China
- 2013.08.01 ~ 15** • Linan Municipal Wastewater Treatment Plant, Hangzhou, Zhejiang Province, China
- 2013.08.16 ~ 31** • Tianziling Municipal Solid Waste Landfill, Hangzhou, Zhejiang Province, China
- 2016.10.01 ~ 2017.02.28** • Legnago Landfill, Arzignano Landfill, Campodarsego Landfill, Gea Sant'Urbano Landfill, Veneto, Italy

Publications

- Co-occurrence of Mobile Genetic Elements and Antibiotic Resistance Genes in Municipal Solid Waste Landfill Leachates: A Preliminary Insight into the Role of Landfill Age. **Z Yu**, P He, L Shao, H Zhang, F Lü. 2016. *Water Research* 106, 583-592. DOI: <https://doi.org/10.1016/j.watres.2016.10.042>
- Fate of Antibiotics and Antibiotic Resistance Genes in a Full-Scale Restaurant Food Waste Treatment Plant: Implications of the Roles beyond Heavy Metals and Mobile Genetic Elements. P He, **Z Yu**, L Shao, Y Zhou, F Lü. 2019. *Journal of Environmental Sciences* 85, 17-34. DOI: <https://doi.org/10.1016/j.jes.2019.04.004>
- Antibiotic Resistance Contamination in Four Italian Municipal Solid Waste Landfills Sites Spanning 34 Years. P He, J Huang, **Z Yu**, X Xu, R Raga, F Lü. 2021. *Chemosphere* 266, 129182. DOI: <https://doi.org/10.1016/j.chemosphere.2020.129182>
- Extended-Spectrum β -Lactamase and Carbapenemase Genes are Substantially and Sequentially Reduced during Conveyance and Treatment of Urban Sewage. L Li, J Nesme, M Quintela-Baluja, S Balboa, S Hashsham, M Williams, **Z Yu**, S Sørensen, D Graham, J Romalde, A Dechesne, B. Smets. 2021. *Environmental Science & Technology* 55, 5939-5949. DOI: <https://doi.org/10.1021/acs.est.0c08548>
- Horizontal Transmission of a Multidrug-resistant IncN Plasmid Isolated from Urban Wastewater. **Z Yu**, J Nesme, Q Wang, J Madsen, R Pinilla-Redondo, K Clasen, H Ananbeh, A Olesen, Z Gong, N Yang, A Dechesne, B Smets, S Sørensen. Pages 67-108, link: <http://www2.bio.ku.dk/bibliotek/phd/Zhuofeng%20Yu.pdf>
- Insights into the Circular: the Cryptic Plasmidome and its Derived Antibiotic Resistome in the Urban Water Systems. **Z Yu**, W He, J Nesme, F Klincke, J Madsen, W Kot, L Hansen, A Dechesne, B Smets, S Sørensen. Pages 109-144, link: <http://www2.bio.ku.dk/bibliotek/phd/Zhuofeng%20Yu.pdf>
- Plasmidome Derived Antibiotic Resistome Reveals the Partitioning of Different Geographic Regions and Treatment Compartments in the Urban Water Systems. **Z Yu**, W He, J Nesme, F Klincke, J Madsen, W Kot, L Hansen, A Dechesne, B Smets, S Sørensen. Pages 145-177, link: <http://www2.bio.ku.dk/bibliotek/phd/Zhuofeng%20Yu.pdf>

PhD Thesis Defence Keynote (Movie)

- Link for the Slide Show: <https://www.youtube.com/watch?v=QyEQ6ssxp04>

Received Research Grants

- [MSC] National Basic Research Program of China (No. 2012CB719801, 2012-2016): Characteristics of Anaerobic Degradation of Solid Waste
- [MSC] National Natural Science Foundation of China (No. 51378375, 2014-2017): Investigation into the Mechanism of Enhanced Microecological Tolerance of Methanogens by Meta-proteomics and Micromanipulation Analysis
- [MSC] National Natural Science Foundation of China (No. 51622809, 2017-2019): Utilization of Waste Biomass into Energy Resources
- [PHD] DFF-Forskningsprojekt2/DFP-Research Project 2 (case number: 7017-00210A, 2017-2020): Strategies and Barriers to Avoid the Spread of Antibiotic Resistance Genes during Wastewater Treatment
- [PHD] Joint Programming Initiative-Antimicrobial Resistance grant (JPI-AMR 7044-00004B, 2017-2021): Dynamics of Antimicrobial Resistance in the Urban Water Cycle in Europe

References

- Prof. Søren Johannes Sørensen, University of Copenhagen, sjs@bio.ku.dk
- Asst. Prof. Joseph Nesme, University of Copenhagen, joseph.nesme@bio.ku.dk
- Asst. Prof. Jonas Stenlørkke Madsen, University of Copenhagen, jsmadsen@bio.ku.dk

