ZiYu LIN (Irene)

Life-long learner & enthusiastic to provide solutions to enhance environment quality

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EDUCATION

Ph.D. in Environmental Science & Engineering **Feb. 2025**
Kyung Hee University (Global), *South Korea*
Dissertation: "Comprehensive Evaluation and Management focusing on Ecosystem of Natural Water Body with Advanced Analytical and Computational Techniques"
Supervisor: Prof. Jong-Min Oh

MSc. in Environmental Science & Engineering **Feb. 2022**
Kyung Hee University (Global), *South Korea*
Dissertation: "A study on the characteristics of the initial stormwater runoff and efficient management of the Settling tank for reduction"
Supervisor: Prof. Jong-Min Oh

BSc. in Environmental Engineering **Jun. 2018**
Shandong University of Science and Technology, *China*
Dissertation: "Study on preparation and application performance of green filling cementitious materials"
Supervisor: Prof. Shu Gang Hu

AWARDS

- Brain Korea 21+ program scholarship, *South Korea* **2022 - 2023**
- Presidential Scholarship, *South Korea* **2020 - 2021**
- Presidential Scholarship, *South Korea* **2022 - 2023**

RESEARCH DOMAIN(s)

- Sustainable Urban Water Management.
- Urban Drainage System Optimization.
- Water Pollution Analysis.
- Water Quality Prediction Model Development.
- Water Ecosystem Health Assessment.
- Biodiversity Analysis

SKILLS

Laboratory Skills

- *Water Sampling and Analysis (TN, TP, BOD, COD, SS, Chl-a, etc).*
- *Dissolved Organic Matter Measurement and Advanced Analysis,*
- *Soil Sampling and Measurement (TSS, AFDW & Moisture Content),*
- *Paddy Breeding Experimentation*

Analytical Skills

- *Assessment Methods*: Water Quality Index
- *Biodiversity Evaluation*: Habitat & Riparian Index, Benthic Macroinvertebrate Index, and Fish Assessment Index
- *Programming*: MATLAB, Python, and Adobe Illustrator

Language(s)

- *Native*: Chinese
- *Fluent*: English and Korean

INDUSTRIAL PROJECTS

Samsung Electronics, *South Korea* **Jan. 2020 – Dec. 2024**

Conducted environmental analysis of the water system and aquatic ecosystem health in the *Woncheon-ri Stream* near Samsung Electronics' discharge outlet.

Gyeonggi Green Environment Center, *South Korea* **Jun. 2023 – Jan. 2024**

Ministry of Environment

Developed efficient wetland solutions and provided planning recommendations based on real case scenarios in *Yongin City, Giheung Province*.

Samsung Electronics, *South Korea* **Dec. 2021 – Dec. 2023**

Executed a comprehensive survey and developed a conservation and restoration plan to enhance aquatic ecosystem health in the *Gokgyo River*.

Gyeonggi Green Environment Center, *South Korea* **Apr. 2022 – Dec. 2022**

Ministry of Environment

Investigated water pollution sources in major rivers in *Suji-gu* and proposed sustainable solutions.

Samsung Electronics, *South Korea* **Aug. 2021 – Jul. 2022**

Assessed habitat status of endangered species and developed a conservation and restoration plan to improve the ecological health of the *Jinwi-Ri*.

Gyeonggi Green Environment Center, *South Korea.* **Apr. 2021 – Oct. 2021**

Ministry of Environment

Studied water cycle policy efficiency and proposed a management plan for *Gi-heung Lespia* reservoir and artificial wetland to reduce initial rainwater runoff and pollution load.

PORTFOLIOS: PUBLICATIONS & CONFERENCES

JOURNAL ARTICLE

* **Underlined & bolded** indicates the authorship position**;** [+] indicates authors contributed equally

Submitted & In Review

1. **Lin, ZY,** Oh, HJ, Chang, KH, Lim, J.Y., Oh, J-M, 2024. Spatio-temporal Dynamics Variation of Dissolved Organic Matter and Water Quality Parameters in a Lake: A Vertical Perspective *(Under Review-post revision)*
2. **Lin, ZY,** Oh, J-M, 2024. Assessment of Seasonal Variations in Water Quality and Dissolved Organic Matter (DOM) Characteristics of Urban Runoff in Interception Facilities along a Korean River. *(Under Review-post revision)*

Accepted & Published

1. **Lin, ZY.,** Lee, K.H., Lim, J.Y., Kim, J.H., Eun, B.J., Lee, S.J., Park, J.Y., Oh, H.S., Oh, J.-M., 2024. Revealing spatial-temporal impact of industrial effluent towards DOM in Riverine employing PARAFAC and MW-2D COS. *Journal of Environmental Chemical Engineering. 32 (3), 166-175.*
2. **Lin, ZY.,** Lim, J.Y., Oh, J-M, 2024. Innovative interpretable AI-guided water quality evaluation with risk adversarial analysis in river streams considering spatial-temporal effects. *Environmental Pollution*. *350, 124015*
3. **Lin, ZY.,** Dai, J.S., Oh, J.-M., 2023. Optimal discharge protocol for urban stormwater settling tank across different scenarios under limited data aided with Monte-Carlo simulation incorporated mathematical model. *Journal of Water Process Engineering. 52, 103538.*
4. **Lin, ZY.,** Eun, B., Heo, J.S., Choi, I.S., Oh, J.-M., 2022. Analysis of the Discharge Characteristics of Non-point Pollutants from the Interception Facilities according to Rainfall Conditions. *Journal of Environmental Impact Assessment. 31 (1), 1-10.*
5. Jin, M.-Y., Oh, H.-J., Shin, K.-H., Jang, M.-H., Kim, H.-W., Choi, B., **Lin, ZY,** Heo, J.S., Oh, J.-M., Chang, K.-H., 2020. The Response of Dissolved Organic Matter during Monsoon and Post-Monsoon Periods in the Regulated River for Sustainable Water Supply. *Sustainability. 12 (13), 5310*
6. Eun, B., Kim, J.H., **Lin, ZY,** Heo, J.S., Choi, I.S., Oh, J.-M., 2023. A Study on the Cause and Improvement of the Red-Water Occurrence in Urban Stream. *Journal of Environmental Impact Assessment. 32 (3), 166-175.*

CONFERENCES PRESENTATIONS

- **ZiYu Lin,** Won Kim, Du Han Lee1, Jeong Sook Heo, I Song Choi, Jong-Min Oh. Evaluation of Aeration Efficiency using Sheet Flow to Improve Water Quality in the Stream. *Korean Society of Environmental Impact Assessment,* Poster Presentation, Suwon, South Korea (Apr 2021).
- **ZiYu Lin,** Gyeong Min Nam, Eun BeomJin, Jeong Sook Heo, I Song Choi, Jong-Min Oh. Analysis of the Initial Rainwater Characteristics flowing into the interception facility stormwater collection facility and different rainfall conditions. *Korean Society of Environmental Impact Assessment,* Poster Presentation, Jeju Island, South Korea (Aug 2021)
- **ZiYu Lin,** Jeong Sook Heo, I Song Choi, Jong-Min Oh. Monte-Carlo Simulation guided reliability assessment on the treatment efficiency of the urban rainwater treatment system, 35*th Congress of the International Society of Limnology*. Oral presentation, Gwangju, South Korea (Aug 2021)
- **ZiYu Lin,** Jong Hwan Kim, Eun BeomJin, Jeong Sook Heo, I Song Choi, Jong-Min Oh. A study on the optimal treatment operations for sedimentation tank in an urban storm water management system. *Korean Society of Environmental Impact Assessment,* Oral presentation, Yeosu, South Korea (Apr 2022)
- **ZiYu Lin,** Jong Hwan Kim, Eun BeomJin, Jeong Sook Heo, I Song Choi, Jong-Min Oh..Study on the optimal retention method of a storage tank using a sedimentation model. *Korean Society of Ecology and Infrastructure Engineering; KSEIE*, Poster Presentation, Seoul, South Korea (Jun 2022)
- **ZiYu Lin,** Jong Hwan Kim, Jang Seong Dai, Jeong Sook Heo, Jong-Min Oh. A comprehensive water quality index assessment on the river stream with the aid of machine learning. *Korean Society of Environmental Impact Assessment,* Poster Presentation, Busan, South Korea (Apr 2023).
- **ZiYu Lin,** Kwang Hee Lee, Beom Jin Eun, Jong-Min Oh. Potential of enhancing carbon neutrality goals by water quality prediction with machine learning: A case study of river stream. *International ESG Association of 2023 Global ESG Forum,* Poster Presentation, Singapore (Jun 2023).

REFERENCES

Jong-Min Oh, *Ph.D.*

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jmoh@khu.ac.kr

***Please contact me if more referees are required, thank you.*