

# YERIN CHOE

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## EDUCATION

### Seoul National University

*Master of Science in Civil and Environmental Engineering*

Mar. 2022 – Feb. 2024

Seoul, South Korea

*Thesis: Investigation on the applicability of UV/sulfite reductive treatment of PFASs in sorption regenerant*

### Seoul National University

*Bachelor of Science in Chemistry (cum laude)*

Mar. 2017 – Feb. 2022

Seoul, South Korea

## RESEARCH INTEREST

- **Water treatment:** development of water treatment technologies for practical demonstration, physico-chemical treatment, determination and degradation of PFASs, adsorption, photochemical degradation, byproduct formation, fate of micropollutant, sustainable process design
- **Environmental impact analysis:** material flow analysis (MFA) of basic element, life-cycle assessment (LCA) of environmental impact of product and technology, environmental impact assessment of emerging technologies and industrial system, framework development considering socioeconomic factors

## PUBLICATION

- Jaehee Kim, Taeyeon Kim, Heungjoo Park, Moon-Kyung Kim, Soyeon Eom, **Yerin Choe**, Jong Kwon Choe, Kyung-Duk Zoh (2024) Kinetics and proposed mechanisms of hexafluoropropylene oxide dimer acid (GenX) degradation via vacuum-UV (VUV) photolysis and VUV/sulfite processes, *Journal of Hazardous Materials* 463, 132864. <https://doi.org/10.1016/j.jhazmat.2023.132864>

## RESEARCH EXPERIENCE

### Metabolism-Carbon Modeling Group | Seoul National University

Mar. 2024 – Present

*Research Intern (advisor: Jooyoung Park)*

- Food-related Nitrogen flow analysis in Korea

### Sustainable Environmental Technology Lab | Seoul National University

*Postmaster fellow (advisor: Jong Kwon Choe)*

Mar. 2024 – Present

- Determination and sorption removal of PFASs in industrial wastewater

*Research Assistant (advisor: Jong Kwon Choe)*

Mar. 2022 – Feb. 2024

- Degradation of PFASs mixture in regenerant condition by UV/sulfite process
- Monitoring PFASs by <sup>19</sup>F NMR

*Undergraduate Research Intern (advisor: Jong Kwon Choe)*

Mar. 2021 – Feb. 2022

- Degradation of aqueous PFASs via photoreductive processes
- Quantification of PFOS by <sup>19</sup>F NMR

### Inorganic Molecular Conversion Lab | Seoul National University

Jun. 2020 – Feb. 2021

*Undergraduate Research Intern (advisor: Yunho Lee)*

- Synthesis of less rigid acpi-PNP ligand to offer enhanced reactivity toward carbonyl conversion

### Synthetic Organic Chemistry Lab | Seoul National University

Jun. 2019 – Feb. 2020

*Undergraduate Research Intern (advisor: Hong Geun Lee)*

- Enantioselective N-centered radical conjugate addition to activated alkene

## PRESENTATION

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- **Yerin Choe & Jong Kwon Choe** (2023, August 16-21). *Influence of regenerant conditions on degradation and defluorination efficiency of UV/sulfite reductive treatment of PFASs in sorption regenerant* [In-person oral presentation]. ACS Fall 2023, San Francisco, CA, United States.
- **Yerin Choe & Jong Kwon Choe** (2022, November 8-11). *Investigation on photoreductive degradation products and degradation mechanisms of perfluorooctane sulfonate (PFOS) using <sup>19</sup>F NMR characterization* [Poster session]. 2022 Korean Society of Environmental Engineers Conference, Jeju, Republic of Korea.

## PROJECT

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**Adsorption-based removal technology and detoxification of PFASs** | Samsung Electronics **Feb. 2024 – Present**

- Sorption treatment of PFASs in wastewater with activated carbon and ion-exchange resin
- Chromatographic analysis of PFASs in wastewater

**Integration and Utilization Framework for Carbon Neutrality Technology Information**

| Korea Environment Institute

**Aug. 2024**

- Collection of process flow and carbon neutrality technology information for the petroleum refining sector

**Super Recalcitrant PFAS Treatment LAB** | National Research Foundation of Korea

**Mar. 2021 – Feb. 2024**

- Reductive treatment of aqueous PFASs

**Precise Analysis of PFCs in G-tower Wastewater** | Samsung Electronics

**Jul. 2023 – Dec. 2023**

- Quantification and qualification of PFASs by NMR

## LEADERSHIP / EXTRACURRICULAR

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**Volunteering Engineers & Scientists of SNU**

**Mar. 2021 – Feb. 2022**

*Team member*

*Seoul National University*

- Development of assistive device for improving mobility rights of visually impaired individuals

**College of Natural Sciences Students' Government**

**Oct. 2018 – Mar. 2019**

*Vice President*

*Seoul National University*

- Worked as the vice president directly elected by all undergraduate students of college of natural sciences

**2018 Summer Science Volunteering Camp**

**Aug. 2018**

*Organizing committee*

*Seoul National University*

- Engaging in planning and volunteer work for science education and mentoring programs in rural communities

**2017 Summer Science Volunteering Camp**

**Aug. 2017**

*Organizing committee*

*Seoul National University*

- Engaging in planning and volunteer work for science education and mentoring programs in rural communities

## SCHOLARSHIP

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**Alumni Association Scholarship for 3 semesters**

Fall 2023, Spring 2023, Fall 2022

**Merit-Based Scholarship**

Fall 2020

**Alumni Association Scholarship**

Spring 2019

**Merit-Based Scholarship**

Spring 2018