

Kyuyeon Lee

Kyuyeon3@gmail.com

Cell phone: 010-2749-7817

EDUCATION

Seoul National University (Korea) Mar 2016 – Feb 2026.

- Ph.D., Graduate School of Environmental Studies
- Advisor: Prof. Neung-hwan Oh
- Thesis: Application of multiple biogeochemical techniques for analyzing stream and riverine carbon from forest watersheds in Korea

San Jose State University (US) Aug 2013 – LOA

- M.S student, Dept. of Chemical Engineering

Seoul National University (Korea) Sep 2007 – Feb 2010.

- M.S., Dept. of Civil and Environmental Engineering
- Advisor: Prof. Kyoungphile Nam
- Thesis: A study on the design parameters for in situ bioremediation of nitrate-contaminated ground water using denitrifying microorganisms and molasses

Inha University (Korea) Sep 2004 – Feb 2007.

- B.S., Dept. of Civil and Environmental Engineering

Sangmyung University (Korea) Mar 2002 – Aug 2004.

- Course work in Dept. of Civil and Environmental Engineering

WORK EXPERIENCES

- **Postdoctoral fellow, Environmental Planning Institute, Seoul National University**

Mar 2026 – Present

- **Visiting graduate researcher, Department of Land Air and Water Resources, College of Agricultural and environmental sciences, University of California, Davis, USA**

Aug 2021 – Aug 2022

- **Research Assistant, Water Research Center, Korea Institute of Science and Technology**

Feb 2010 – Aug 2010

- **Information Provider, Digital Information Center for Environment Research, Korea Environmental Industry & Technology Institute**

Feb 2010 – Aug 2014

RESEARCH PROJECT EXPERIENCE

- National Long-Term Ecological Research Project (Mt. Jeombong in Gangwon province), National Institute of Ecology of Korea, Research Assistant, Mar 2019 – Present
- Investigation of Ecosystem Organic Matter Decomposition Processes Using Compound-Specific Radiocarbon Isotope Analysis, Ministry of Science and ICT, May 2024 – Aug 2026
- Detailed Investigation of Suspended Sediment Generation Characteristics in the Geum River Basin, National Institute of Environmental Research, Ministry of Environment, Apr 2025 – Mar 2026
- Development of an Observation-Based Greenhouse Gas Spatial Mapping Platform, Korea Environmental Industry & Technology Institute, Oct 2023 – Dec 2025
- Investigation of the Stability of Ecosystem Organic Matter, Ministry of Science and ICT, Mar 2021 – Feb 2024
- Spatiotemporal Changes in Alpine Ecosystems under Climate Change, Ministry of Science and ICT, Jun 2021 – Feb 2024
- Source Tracking of Pollutants to Support the Implementation of the Total Organic Carbon Load Management System, National Institute of Environmental Research, Ministry of Environment, Dec 2020 – Dec 2021
- Characteristics of Riverine Organic Carbon Originated from North Korean Forests, the Institute for Peace and Unification studies at Seoul National University, Research Assistant, Mar 2020 – Dec 2021
- Tracing the Sources of Stream Dissolved Organic Carbon in Forest Ecosystems Using Lignin Phenol Analysis, Ministry of Science and ICT, Dec 2021 – Jul 2022
- Evasion of CO₂ from Streams Influenced by Biogeochemical Properties of Organic Compounds, National Research Foundation of Korea, Research Assistant, Sep 2018 – Aug 2019
- The study about management of Persistent Organic Pollutants in Soil, Research Assistant, National Institute of Environmental Research, May 2007 – Dec 2007
- Development of In-situ Bioremediation of Nitrate Contaminated Groundwater Using Bio-reactive Barrier with Molasses and Indigenous Denitrifying Bacteria, Research Assistant, Rural Research Institute in Korea & Ministry of Food, Agriculture, Forestry, and Fisheries, Feb 2007 – Sep 2009

- Process development for biofuel production using microalgae grown with livestock wastewater, Research Assistant, Korea Institute of Science and Technology & Hudigm Green, co. Feb 2010 – Aug 2010

AWARDS AND ACADEMIC HONORS

- **2021 Scholarship for Female Graduate Students in Science and Engineering** for Research Training in the United States – awarded by the National Research Foundation of Korea, Dec 2021.
- **Certificate of Commendation** – awarded by the Faculty of Liberal Education, Seoul National University, Aug 2018
- **Prize for Best Poster Presentation** – awarded for a distinguished poster presentation, by Advanced Environmental Biotechnology Research Center (AEBRC), Korean Science and Engineering Foundation, Feb 2009.
Kyuyeon Lee, Doyun Shin, Byungsun Lee, and Kyoungphile Nam, "Verifying Denitrification Capability for the Remediation of Agricultural Groundwater Using Molasses-Utilizing Indigenous Heterotrophic Denitrifier"
- **Prize for Best Poster Presentation** – awarded for a distinguished poster presentation, by Korean Society of Environmental Engineering, Nov 2009.
Kyuyeon Lee, Yongju Choi, Doyun Shin, Byungsun Lee, and Kyoungphile Nam, "Denitrifying Technique for Groundwater Using Indigenous Denitrifying Bacteria and Molasses"

PATENTS

- B.S. Lee, **K. Lee**, K. Nam, Y.B. Kim, KR-10-0906402, Jun 30th 2009, Solid molasses tablet, method of production thereof, and the method of remediation of nitrate-contaminated groundwater using the tablet
- B.S. Lee, J.Y. Um, **K. Lee**, Y.B. Kim, K. Nam, N.C. Woo, KR-10-0922481, Oct 12th 2009, Remediation system of nitrate contaminated water using reactive barrier filled with solid molasses in denitrifying condition

JOURNAL ARTICLES

- S.C. Lee, **K. Lee**, J.Y. Cha, E.J. Lee, N.H. Oh (2026) Highly varying radiocarbon isotope ratios of dissolved organic carbon in forest headwater streams in South Korea. *Journal of Hydrology* 664:134616.
- **K. Lee**, J.Y. Cha, E.J. Lee, S.C. Lee, S. Son, S. Kim, X. Jin, J.W. Choi, N.H. Oh (2025) Biogeochemical properties of a forest stream dissolved organic matter at Mt. Jeombong, a Korean Long-Term Ecological Research (KLTER) site. *Journal of Korean Society on Water Environment*

41(1):54-69.

- E.J. Lee, Y. Shin, **K. Lee**, S.C. Lee, J.Y. Cha, N.H. Oh (2023) Comparison of organic carbon properties in extracted soil solutions obtained underneath *Cryptomeria japonica* and *Quercus acutissima* and its implication on stream dissolved organic carbon. *Forest Science and Technology* 19(4):296-308.
- E.J. Lee, S.C. Lee, **K. Lee**, J.Y. Cha, Y.N. Han, S.G. Kim, N.H. Oh (2023) Properties of river organic carbon affected by wastewater treatment plants. *Science of the Total Environment* 858:159761.
- J.Y. Cha, **K. Lee**, S.C. Lee, E.J. Lee, K.J. Yim, I. Ryoo, M. Kim, J. Ahn, S.M. Yi, C.R. Park, N.H. Oh (2023) Fossil and non-fossil sources of the carbonaceous component of PM_{2.5} in forest and urban areas. *Scientific Reports* 13:5486.
- J.Y. Cha, S.C. Lee, E.J. Lee, **K. Lee**, H. Lee, H.S. Kim, J. Ahn, N.H. Oh (2023) Canopy leaching rather than desorption of PM_{2.5} from leaves is the dominant source of throughfall dissolved organic carbon in forest. *Geophysical Research Letters* 50.
- **K. Lee**, Y. Choi, B.S. Lee, K. Nam (2017) Differential mode of denitrification by *Pseudomonas* sp. KY1 using molasses as a carbon source. *KSCE Journal of Civil Engineering* 21(6):2097-2105.
- B.S. Lee, **K. Lee**, D. Shin, K. Nam (2017) Nitrate-N removal using slowly released molasses barrier in a shallow aquifer: Obstacles from lab/pilot-scale results to field application. *KSCE Journal of Civil Engineering* 21(4):1096-1101.
- B.S. Lee, J.Y. Um, **K. Lee**, H.S. Moon, Y.B. Kim, N.C. Woo, J.M. Lee, K. Nam (2009) Pilot-scale applications of a well-type reactive barrier using autotrophic sulfur-oxidizers for nitrate removal. *J. Soil & Groundwater Env.* 14(3):40-46.
- B.S. Lee, **K. Lee**, D. Shin, C.J. Hak, Y.J. Kim, K. Nam, (2010) Denitrification by a Heterotrophic Denitrifier with an Aid of Slowly Released Molasses. *J. Soil & Groundwater Env.* 15(4):30-38.
- Y. Choi, S. Jeong, H. Ryu, **K. Lee**, B.H. Bae, K. Nam (2011) Ecological risk characterization in a military heavy metals- and explosives-contaminated site. *Human and Ecological Risk Assessment*. 17(4): 856-872.
- B.S. Lee, E. J. Y. Um, **K. Lee**, J. Jung, K. Nam (2012) Release characteristics of molasses from a well-type barrier system in groundwater: a large test tank study for nitrate removal. *Environmental Earth Sciences*. 1-8
- **K. Lee**, B. S. Lee, D. Shin, Y. Choi, K. Nam (2013) Enhancement of denitrification capacity of *Pseudomonas* sp. KY1 through the optimization of C/N ratio of liquid molasses and nitrate. *Journal of KSEE (Korean)*, accepted Sep 2013

PRESENTATIONS

- **K. Lee**, J.-Y. Cha, E.-J. Lee, S.-C. Lee, P. J. Hernes, S. Son, S. Kim, N.-H. Oh (2025) Multiple

techniques for analyzing riverine DOC (carbon isotopes, biomarkers, mass spectrometry) can trace integrated characteristics of forest watersheds in South Korea and North Korea over 73 years. Goldschmidt Conference, Geochemical Society and European Association of Geochemistry. Prague, Czech Republic. Jul 10

- **K. Lee** (2022) Comparison of dissolved organic carbon characteristics in forest streams between South and North Korea. 2022 Fall Conference of the Ecological and Environmental Science Societies of Korea, The Ecological Society of Korea. Korea. Oct 22
- **K. Lee** and N.H. Oh (2019) Effects of soil aggregation on soil organic matter decomposition. Annual Meeting of the Korean Association of Biological Sciences, The Ecological Society of Korea. Korea. Aug 14
- **K.Y. Lee**, D.Y. Shin, B Lee, K Nam (2007) Isolation and molecular characterization of heterotrophic denitrifying bacterial community using molasses as a sole carbon source. International Meeting of FKMS (The Federation of Korean Microbiological Societies). Seoul, Korea. Oct 11 – 12
- **K.Y. Lee**, D.Y. Shin, B Lee, K Nam (2008) Isolation and molecular characterization of heterotrophic denitrifying bacterial community using molasses as a sole carbon source. 2008 Spring Conference of the Korea Society of Soil and Groundwater Environment. Seoul, Korea. Apr 23 – 25
- **K.Y. Lee**, D.Y. Shin, B Lee, K Nam (2008) Use of Molasses as an External Carbon Source for In Situ Heterotrophic Denitrification. 108th General Meeting of the American Society for Microbiology. Boston, USA. Jun 1 – 5
- **K.Y. Lee**, D.Y. Shin, B Lee, K Nam (2008) Derivation of Optimal C/N Ratio for Effective Denitrifying Reaction using Molasses by Indigenous Denitrifier. 2008 Fall Conference of the Korean Society of Environmental Engineers. Seoul, Korea. Oct 6 – 7
- **K.Y. Lee**, Y.J. Choi, D.Y. Shin, B Lee, K Nam (2009) Remediation of Nitrate Contaminated groundwater by Indigenous Bacteria with Molasses. 2009 Spring Conference of the Korean Society of Environmental Engineers. Changwon, Korea. April 30 – May 4
- **K.Y. Lee**, D.Y. Shin, B Lee, K Nam (2009) Denitrification using Indigenous Microorganism with Controlled Release Molasses. 109th General Meeting of the American Society for Microbiology. Philadelphia, USA. May 17 – 21
- **K.Y. Lee**, Y.J. Choi, D.Y. Shin, B Lee, K Nam (2009) Enhancement of Denitrifying Activity using Optimal C/N Ratio of Molasses. 2009 Fall Conference of the Korean Society of Environmental Engineers. Gwangju, Korea. Oct 5 – 6
- B.S. Lee, J.Y. Um, **K.Y. Lee**, Y.B. Kim, K Nam, N.C. Woo, J.H. Kim, J.M. Lee (2009) A controlled-release molasses barrier system for controlling nitrate plume in groundwater: A large flow-tank

study. 2009 EGU(American Geophysical Union) Fall Meeting. San Francisco, USA. Dec 14 – 18