

Jinwook Lee, Ph.D.

739, Gwonseon-ro, Paldal-gu, Suwon-si. Gyeonggi-do, South Korea
(Tel) +82 10-4169-3319 | (E-mail) shop0319@skku.edu

EDUCATION

02.2026 **Ph.D.** Fashion and Textiles, **Seoul National University**, Seoul. Korea
02.2022 **M.S.** Fashion and Textiles, **Seoul National University**, Seoul, Korea
02.2020 **B.S.** Chemistry Education, **Seoul National University**, Seoul, Korea.

PROFESSIONAL APPOINTMENTS

03.2026-Present Post Doctoral Research Associate, Department of Nano Engineering, SKKU Advanced Institute of Nano Technology (SAINT), **Sungkyunkwan University (SKKU)**, Suwon-si, Gyeonggi-do, Korea

JOURNAL PUBLICATIONS

Jinwook Lee, Jooyoun Kim, Turning humidity into function: heterojunction interfaces for synergistic dual-mode removal of nonpolar vapors, 2026, *Advanced Materials Interfaces*, under review.

Jinwook Lee, Geun Park, Gyeong Chan Kim, Jung-Hoon Yun, Dennis T. Lee, Sangchul Roh, Jooyoun Kim, Self-sacrificial growth of heterojunction photocatalytic fibers as a humidity-adaptive platform for sustainable VOC purification, *Advanced Fiber Materials*, 2026, online published in advance (2026.01). [IF: 21.8]

Jinwook Lee, Geun Park, Gyeong Chan Kim, Jung-Hoon Yun, Jooyoun Kim, Fe wire-based metal-organic frameworks for advanced gas and vapor adsorption: effect of functional compatibility on hierarchical pore diffusivity and atomic simulation insights, *ACS Applied Materials & Interfaces*, 2025, 17(26):38597-39607, **Supplementary Cover** (2025.05). [IF: 8.2]

Soyeon Jin, **Jinwook Lee**, Sunjeong Kim, Gyeong Chan Kim, Jung-Hoon Yun, Jooyoun Kim, Self-sacrificial synthesis of Cu₃(HHTP)₂ on Cu substrate for recyclable NH₃ gas adsorption with energy-efficient photothermal regeneration, *RSC Advances*, 2025, 15(17):13583-13594 (2025.04). [IF: 4.6]

Jinwook Lee, Jooyoun Kim, Heterostructured photocatalytic fabric with Ag₃PO₄-decorated porous NH₂-MIL-88B (Co/Fe) for Rhodamine B adsorption and photocatalytic degradation, *ACS Applied Nano Materials*, 2024, 7(7):8362-8375 (2024.04). [IF: 5.5]

Jinwook Lee, Jooyoun Kim, Cooperative design of Ag₃PO₄/NH₂-MIL-88B (Fe/Co) heterojunction integrated with conductive polypyrrole for advanced photocatalytic water purification, *ACS Omega*, 2024, 9(5):5942-5953 (2024.01). [IF: 4.3]

Jaeseon Yoo, **Jinwook Lee**, Jooyoun Kim, A floating photocatalytic fabric integrated with AgI/UiO-66-NH₂ heterojunction for facile strategy of wastewater treatment, *RSC Advances*, 2024, 14(3):1794-1802 (2014.01). [IF: 4.6]

Juran Kim, **Jinwook Lee**, Jooyoun Kim, In situ growth of gamma-cyclodextrin-based metal organic frameworks on poly(ethylene terephthalate) fibers for use as SO₂ adsorbent, *Macromolecular Materials and Engineering*, 2023, 308(1):2200645 (2023.01). [IF: 4.6]

Jinwook Lee, Jaeseon Yoo, Jooyoun Kim, Copper-2-methylimidazole nanostructure based colorimetric fabric sensor for real-time monitoring of ambient sulfur oxides, *ACS Applied Nano Materials*, 2022, 5(11): 17304-17314 (2022.11). [IF: 5.5]

Jinwook Lee, Seojin Jung, Hanjou Park, Jooyoun Kim, Bifunctional ZIF-8 grown webs for advanced filtration of particulate and gaseous matters: effect of charging process on the electrostatic capture of nanoparticles and sulfur dioxide, *ACS Applied Materials & Interfaces*, 2021, 13(42): 50401-50410 (2021.10). [IF: 8.2]

Jinwook Lee, Kyeongun Lee, Jooyoun Kim, Fiber-based gas filter assembled via in-situ synthesis of ZIF-8 metal organic framework for an optimal adsorption of SO₂: Experimental and theoretical approach, *ACS Applied Materials & Interfaces*, 2021, 13(1):1620-1631 (2021.01). [IF: 8.2]

Jinwook Lee, Jooyoun Kim, Material properties influencing the charge decay of electret filters and their impact on filtration performance, *Polymers*, 2020, 12:721 (2020. 03). [IF: 4.9]

Kwanwoo Song, **Jinwook Lee**, Seong-O Choi, Jooyoun Kim, Interaction of surface energy components between solid and liquid on wettability and its application to textile anti-wetting finish, *Polymers*, 2019, 11:498 (2019. 03). [IF: 4.9]

PATENTS

Jooyoun Kim, **Jinwook Lee**, Soyeon Jin, 금속 기재-MOF 복합체의 제조방법, 이에 의해 제조되는 금속 기재-MOF 복합체 및 이의 용도 [Method for producing a metal substrate-MOF complex, a metal substrate-MOF complex produced thereby, and uses thereof], PCT, Application No. PCT/KR2025/023283 (Filing date 2025.12.31).

Jooyoun Kim, **Jinwook Lee**, 금속 기재-MOF 복합체의 제조방법, 이에 의해 제조되는 금속 기재-MOF 복합체 및 이의 용도 [Method for producing a metal substrate-MOF complex, a metal substrate-MOF complex produced thereby, and uses thereof], Korea Patent, Application No. 10-2025-0129851 (Filing date 2025.09.11).

Jooyoun Kim, Jaeseon Yoo, **Jinwook Lee**, 부유형 광촉매 및 이를 이용한 수중 오염 물질의 제거 방법 [Floating photocatalyst and method for removing pollutant in water using the same], Korea Patent, Application No. 10-2024-0005151 (Filing date 2024.01.12).

PRESENTATIONS / PROCEEDINGS

[ORAL PRESENTATION]

Jinwook Lee,* Geun Park, Jung-Hoon Yun, Jooyoun Kim, Fe template-based metal-organic framework gas adsorbent, The Korean Fiber Society, 2025 Spring Conference, Jeju, Korea (2025). **[Oral Presentation Award]**

Soyeon Jin,* **Jinwook Lee**, Sunjeong Kim, Jung-Hoon Yun, Jooyoun Kim, Development of recyclable copper template-based ammonia gas adsorbents: Gas desorption via photothermal conversion, The Korean Society of Clothing and Textiles, 2025 Spring Conference, Seoul, Korea (2025).

Jinwook Lee,* Jooyoun Kim, Heterostructured photocatalytic fabric with Ag₃PO₄ and NH₂-MIL-88B (Co/Fe) for enhanced catalytic reactivity, The Korean Society of Clothing and Textiles, 2024 International Conference on Clothing and Textiles, Jeju, Korea (2024). **[Oral Presentation Award]**

Jaeseon Yoo,* **Jinwook Lee**, Jooyoun Kim, Floating photocatalytic fabric for water treatment, The Fiber Society, 2023 Fall Meeting and Technical Conference, PA, USA, (2023).

Jinwook Lee,* Jooyoun Kim, Polypyrrole-integrated conductive fiber engineering for NH₂-MIL-88B/Ag₃PO₄ p-n junction photocatalytic applications. The Korean Society of Clothing and Textiles, 2023 Fall Conference, Seoul, Korea (2023).

Jinwook Lee,* Jaeseon Yoo, Jooyoun Kim, Development of copper-based MOF fibrous filters for SO_x derivative adsorption and colorimetric sensing, The Korean Fiber Society, 2022 Fall Joint Conference of the Korean Fiber Society and the Korean Society of Dyes and Finishers, Busan, Korea (2022). **[Oral Presentation Award]**

Jinwook Lee,* Seojin Jung, Hanjou Park, Jooyoun Kim, Application of ZIF-8 grown polylactic acid web as a bifunctional filter for particulate and gaseous matters, The Korean Fiber Society, 2022 Spring Conference, Jeju, Korea (2022).

Jinwook Lee,* Seojin Jung, Hanjou Park, Jooyoun Kim, Functional evaluation of In-situ treated ZIF-8 fibers as multifunctional filtration materials, The Korean Society of Clothing and Textiles, 2021 Fall Conference, Seoul, Korea (2021). **[Oral Presentation Award]**

Jinwook Lee,* Jooyoun Kim, The effect of polymeric properties of electret filters on electrical charge loss and filtration performance, The Korean Society of Clothing and Textiles, 2020 Fall Conference, Seoul, Korea (2020). **[Oral Presentation Award]**

* Corresponding author

[POSTER PRESENTATION]

Jinwook Lee, Geun Park, Gyeong Chan Kim, Jung-Hoon Yun, Jooyoun Kim,* Direct synthesis of MIL-88B(Fe) on iron wire for gas adsorption, The Fiber Society, 2025 Spring Meeting and Technical Conference, Hung Hom, Hong Kong (2025).

Jinwook Lee,* Geun Park, Jung-Hoon Yun, Jooyoun Kim, Development of sustainable gas adsorbents utilizing Fe-based metal wires, The Korean Society of Clothing and Textiles, 2025 Spring Conference, Seoul, Korea (2025).

Sujin Jeong,* Soyeon Jin, **Jinwook Lee,** Jooyoun Kim, In-situ synthesis of copper template-based adsorbents for gas phase ammonia adsorption and repeated usability via photothermal effect, The Korean Fiber Society, 2024 Fall Joint Conference of the Korean Fiber Society and the Korean Society of Dyes and Finishers, Busan, Korea (2024).

Jaeseon Yoo,* **Jinwook Lee,** Ye-eun Woo, Jooyoun Kim, Investigation of wastewater remediation performance of floating photocatalyst fabric integrated with AgI/UiO-66-NH₂, The Korean Fiber Society, 2023 Spring Conference, Jeju, Korea (2023).

Jinwook Lee,* Jaeseon Yoo, Ye-eun Woo, Jooyoun Kim, Investigation of pollutant degradation performance of floating photocatalytic fabric incorporated with heterojunction photocatalyst, The Korean Society of Clothing and Textiles, 2023 Spring Conference, Seoul, Korea (2023).

Jinwook Lee,* Kyeongeun Lee, Jooyoun Kim, ZIF-8 Grown fabric for ambient SO₂ removal, The Fiber Society, 2022 Fall Meeting and Technical Conference, NC, USA (2022).

Jinwook Lee,* Jooyoun Kim, ZIF-8 Filter for particulate and gas removal, The Fiber Society, 2022 Fall Meeting and Technical Conference, NC, USA (2022).

Jinwook Lee,* Kyeongeun Lee, Jooyoun Kim, Investigation of sulfur dioxide removal performance and adsorption mechanism in ZIF-8 loaded fibers, The Korean Fiber Society, 2021 Spring Conference, Seoul, Korea (2021).

Jinwook Lee,* Kyeongeun Lee, Jooyoun Kim, Fabrication of fiber-based gas adsorbents incorporated with metal-organic frameworks and evaluation of sulfur dioxide adsorption performance, The Korean Society of Clothing and Textiles, 2021 Spring Conference, Seoul, Korea (2021).

Kwanwoo Song,* **Jinwook Lee,** Sojeong Lee, Jooyoun Kim, The influence of surface energy components on wettability in solids and liquids, The Korean Fiber Society, 2019 Spring Conference, Daegu, Korea (2019).

* Corresponding author

AWARDS

Excellence Oral Presentation Award, The Korean Fiber Society 2025 Spring Conference (2025).

Best Special Oral Presentation Award (Session 3. Design Practice for Circular Economy), 2024 International Conference on Clothing and Textiles (ICCT) (2024).

Minister of Trade, Industry and Energy Award, 2022 Industry-Academia Innovation Challenge (2022).

Best Oral Presentation Award, The Korean Fiber Society 2022 Fall Conference (2022).

2021 BK21 Four Excellent Graduate Student Award, SNU BrainKorea21 (BK21) Four for Graduate Research and Education Advancing Tomorrow (2022).

Honorable Mention (4th grade) (National Research Facility Policy System Ideas Contest), 2021 National Research Facilities and Equipment Center (NFEC) Contest (2021).

Best Oral Presentation Award (Research Division of Textiles System), The Korean Society of Clothing and Textiles 2021 Fall Conference (2021).

Best Oral Presentation Award (Research Division of Textiles System), The Korean Society of Clothing and Textiles 2020 Fall Conference (2020).