



Woojin Bae

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Education

Bachelor's degree in Chemical and Biological Engineering Seoul National University	2020 - Present
Exchange student in Chemical and Biomolecular Engineering North Carolina State University	Jan. 2025 - Apr. 2025
Major in Chemistry Daejeon Science High School for the Gifted	2017 - 2020

Research Experience

Self-Driving Fluidic Lab, NCSU	Jan. 2025 - May. 2025
Undergraduate Researcher (Advisor: Prof. Milad Abolhasani)	North Carolina, US

Multi-dimensional Materials Chemistry Lab, SNU	Mar. 2024 - Present
Undergraduate Researcher (Advisor: Prof. Jungwon Park)	Seoul, Korea

- Synthesized Ag cluster-based AIGS(silver indium gallium sulfide)-core.
- SEI Structures Dependent Li-Morphology Characterized by cryo-TEM.
- **Team Leader** of “Undergraduate Independent Study 1” regarding LMBs SEI Cryo-TEM analyzing.

Center for Cell-Encapsulation Research, KAIST	Mar. 2018 - May. 2019
Research & Education Student (Advisor: Prof. Insung Choi)	Daejeon, Korea

- Created a porous titanium oxide shell to facilitate the simple culturing of astrocytes.
- Confirmed the function of encapsulated astrocytes by analyzing the length of neurons co-cultured with astrocytes.

Conferences & Research Presentations

SEI Structures Dependent Li-Morphology Characterized by Cryo-TEM. **Bae, W.**; Jeong, S.; Ji, S.; Park, J.
The 2024 Annual Fall Conference of Korean Society of Microscopy, Gyeongju, Korea (Nov 25, 2024). Poster Presentation.

Rethinking Life Choices Beyond the Child Penalty. **Bae, W.**; Miu Akutsu.; Park, J.; Xing Qing.
Tokyo Forum 2024: Shape the Future, Design for Tomorrow, Tokyo, Japan (Nov 22-23, 2024). Oral Presentation.

Regulation of astrocyte growth using porous titanium oxide shells. **Bae, W.**; Lee, K.; Lee, C.; Kim, T.; Choi, I.
Korean Chemical Society Future Chemist Research Presentation, Daegu, Korea (Oct 19, 2018). Poster Presentation.

Wettability Change of Self-Assembled Monolayers (SAMs) of Thiol on Gold. **Bae, W.**; Lee, K.; Lee, C.
The 51st Joint School Science Exhibition, Hong Kong, Hong Kong (Aug 22-27, 2018). Poster Presentation

Honors & Awards

Young Engineers Honor Society National Academy of Engineering of Korea	Nov. 2024 - Present
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Korea-U.S. Student Exchange Program in the field of high-tech industry Ministry of Trade, Industry and Energy	Nov. 2024
• Awarded a \$9000 scholarship for Exchange student for a semester	

Excellence Poster Award The 5th Undergraduate Student Advanced Experimental Research Program	Jan. 2024
• Theme: Consideration on the relationship between microscopic structure and macroscopic shape according to the synthesis conditions of Hollow ZSM-5.	

Team Section Selected Changing SNU Contest	Jul. 2022
• Theme: A spatial-restricted messenger allowing messages to be accessed only at SNUfestival locations designated by the sender.	

The Education and Research Foundation Scholarship College of Engineering, SNU	Mar. 2021 - Jun. 2021
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Merit-based Scholarship Department of Chemical Biological Engineering, SNU	Sep. 2020 - Dec. 2020
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2020 Future Chemistry Talent Award The Korean Union of Chemical Science and Technology Societies	Feb. 2020
• Awarded as one of the top 6 science high school students in Korea	

Excellence Poster Award 2019 Gifted School R&E Joint presentation	Jan. 2019
• Theme: Regulation of astrocyte growth using porous titanium oxide shells.	

Encouragement Prize 2017 Korea Foundation for the Advancement of Science & Creativity Conference	Jan. 2018
• Theme: Correlation between Z-potential and contact angle of QDs solution.	

Leadership

Marketing team & manager SNUfestival, SNU	Jun. 2021 - May. 2022
<ul style="list-style-type: none">• Promoted the festival through the online website during COVID-19.• Secured a sponsorship agreement with the shared scooter company 'Swing'.	
Vice president CBE Interim Leadership, SNU	Dec. 2020 - Mar. 2021

Teaching & Mentoring Experience

Korean Language Peer Mentor Language Education Institute, SNU	Fall 2024
Learning Assistant Faculty of Liberal Education, SNU	Fall 2024
<ul style="list-style-type: none">• Basic Computing: First Adventures in Computing, L0444.000400	
TEM Seminar Multi-dimensional Materials Chemistry Lab, SNU	May. 2024
<ul style="list-style-type: none">• Amplitude and Phase Contrast.	
Student Mentor Seoul National University Social Responsibility	Apr. 2023 - Present
<ul style="list-style-type: none">• Provided career guidance to the middle school student from underserved communities, selected as a superb mentor.	

Extracurricular Activities

Tokyo Forum Youth Session The University of Tokyo & Chey Institute for Advanced Studies, Japan	Aug. 2024 - Nov. 2024
<ul style="list-style-type: none">• Represented Korean students, participated in the warp-up session hosted by the President of the University of Tokyo.	
HKUST Entrepreneurship Bootcamp 2024 Hong Kong University of Science and Technology, Hong Kong	Jul. 2024
<ul style="list-style-type: none">• Participated in the mock start-up competition and won the third prize for the idea of worldwide healthcare platform.	
SNU-UMN Culture Exchange Program The University of Minnesota, via Zoom	Mar. 2024
2023 Winter Vacation Data Science Bootcamp: Computing Graduate School of Data Science, SNU	Feb. 2024
Encouragement Prize SNU in the World Program UCC Contest, Office of International Affairs, SNU	Nov. 2022
Serving military service Daegu, Korea	Aug.2022 - May.2024
<ul style="list-style-type: none">• 110th Squadron, operating the F-15K Slam Eagle, selected as an exemplary soldier.	
SNU in EU program Brussels School of Governance, Belgium	Jul. 2022
<ul style="list-style-type: none">• Understanding European Unions, M2170.004600, delivered a presentation titled "The European External Action Service".	
Summer International Exchange program Kansas Academy of Mathematics and Science, US	Jul. 2018
<ul style="list-style-type: none">• Synthesized ZnSe Quantum dots and applying them on Gratzel cell.	

Skills & Languages

- **Instruments:** TEM, SEM, UV-Vis, OM, PL
- **Language:** Korean (Native), English (C1, TOEFL 95)
- **Computer Language:** Python, C, Html, CSS
- **Software:** Adobe Premiere Pro, Adobe illustrator, Fusion 360