



# Woojin Bae

Department of Chemical and Biological Engineering, Seoul National University (SNU)

1, Gwanak-ro, Gwanak-gu, Seoul, Republic of Korea (08226)

Phone | +82 10-7323-1459    Email | [usmebbb@snu.ac.kr](mailto:usmebbb@snu.ac.kr)    LinkedIn |     Website | 

## 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

**Undergraduate Researcher** | Multi-dimensional Materials Chemistry Lab, SNU, Republic of Korea **Mar. 2024 - Present**

- Synthesized Ag cluster-based AIGS(silver indium gallium sulfide)-core
- SEI Structures Dependent Li-Morphology Characterized by cryo-TEM
- Led a semester-long project “**Undergraduate Independent Study 1**” regarding LMBs SEI Cryo-TEM Imaging

**R&E Student** | Center for Cell-Encapsulation Research, KAIST, Republic of Korea **Mar. 2018 - May. 2019**

- 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, Republic of Korea (Nov 25, 2024). Poster 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, Republic of 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

**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: Spatial-restricted messenger. The receiver can open a message only at the point where the sender had designated it to do so. Consists of an experimental UI Design, including 100 different interfaces for the loading screen.

**The Education and Research Foundation Scholarship** | College of Engineering, SNU **Mar. 2021 - Jun. 2021**

**Merit-based Scholarship** | Department of Chemical Biological Engineering, SNU **Sep. 2020 - Dec. 2020**

**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

<b>Marketing team &amp; manager</b>   SNUfestival, SNU, Republic of Korea	<b>Jun. 2021 - May. 2022</b>
<ul style="list-style-type: none"><li>• Promoted the festival through <b>the online website</b> during COVID-19</li><li>• Created and performed promotional content and videos</li><li>• <b>Secured a sponsorship</b> agreement with the shared scooter company ‘Swing’</li></ul>	
<b>Vice president</b>   CBE Interim Leadership, SNU, Republic of Korea	<b>Dec. 2020 - Mar. 2021</b>
<ul style="list-style-type: none"><li>• <b>Conducted freshman orientation</b>, facilitating the integration of new students, via Zoom during COVID-19.</li></ul>	

## Teaching and Mentoring Experience

<b>Korean Language Peer Mentor</b>   Language Education Institute, SNU	<b>Sep. 2024 – Nov. 2024</b>
<b>Teaching Assistant</b>   Faculty of Liberal Education, SNU	<b>Sep. 2024 - Dec. 2024</b>
<ul style="list-style-type: none"><li>• Basic Computing: First Adventures in Computing, L0444.000400</li></ul>	
<b>TEM Seminar</b>   Multi-dimensional Materials Chemistry Lab, SNU	<b>May. 2024</b>
<ul style="list-style-type: none"><li>• Delivered a presentation titled “Amplitude and Phase Contrast”</li></ul>	
<b>Student Mentor</b>   Seoul National University Social Responsibility	<b>Apr. 2023 – Present</b>
<ul style="list-style-type: none"><li>• Selected as a <b>superb mentor</b></li></ul>	

## Extracurricular Activities

<b>Tokyo Forum Youth Session</b>   The University of Tokyo & Chey Institute for Advanced Studies, Japan	<b>Aug. 2024 – Nov. 2024</b>
<ul style="list-style-type: none"><li>• Representative among 10 Korean students and delivered a presentation titled “A Way out of the Child Penalty”</li></ul>	
<b>HKUST Entrepreneurship Bootcamp 2024</b>   Hong Kong University of Science and Technology, Hong Kong	<b>Jul. 2024</b>
<ul style="list-style-type: none"><li>• Participated in the mock start-up competition and won the <b>third prize</b> for the idea of worldwide healthcare platform</li></ul>	
<b>SNU-UMN Culture Exchange Program</b>   via Zoom	<b>Mar. 2024 - Apr. 2024</b>
2023 Winter Vacation Data Science Bootcamp: <b>Computing</b>   Graduate School of Data Science, SNU	<b>Feb. 2024</b>
<b>Encouragement Prize</b>   SNU in the World Program UCC Contest, Office of International Affairs, SNU	<b>Nov. 2022</b>
<b>Serving military service</b>   Daegu, Republic of Korea	<b>Aug. 2022 - May. 2024</b>
<ul style="list-style-type: none"><li>• 110<sup>th</sup> Squadron, operating the F-15K Slam Eagle</li><li>• Selected as an <b>exemplary soldier</b></li></ul>	
<b>SNU in EU program</b>   Brussels School of Governance, Belgium	<b>Jul. 2022</b>
<ul style="list-style-type: none"><li>• Understanding European Unions (EU), M2170.004600</li><li>• Delivered a presentation titled "The European External Action Service"</li></ul>	
<b>Summer International Exchange program</b>   Kansas Academy of Mathematics and Science, USA	<b>Jul. 2018</b>
<ul style="list-style-type: none"><li>• Synthesized ZnSe Quantum dots and applying them on Gratzel cell</li></ul>	

## Skills & Languages

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