

## Research Interests

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Nanomaterials, Plasmonics, Colloidal Nanocrystals, Functional Inorganic Materials

## Education

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### The University of Texas at Austin

PhD Student in Chemistry

August 2024 – July 2029 (expected)

### Ewha Womans University(EWU)

BS Candidate in Chemistry Education (Science Education)

March 2019 – February 2024

## Research Experience

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### Milliron Research Group

Graduate Research Assistant (PI: Prof. Delia Milliron)

September 2024 – Present

Austin, Texas

### GIST Chemical Nanoplasmonics Laboratory

Post-baccalaureate Research Assistant (PI: Prof. Jeong-Eun Park)

May 2024 – July 2024

Gwangju, South Korea

[ Strong Exciton-Plasmon Coupling in Chiral J-aggregate – AuNC Complexes ]

- Synthesized and characterized organic dye J-aggregates.
- Developed J-aggregate-AuNC complexes demonstrating exciton-plasmon coupling.

### EWU Nano Bio Materials Lab

Undergraduate Research Assistant (PI: Prof. So-Jung Park)

September 2022 – Present

Seoul, South Korea

[ Anisotropic Gold/Iron Oxide Nanoparticles with Plasmonic Magnetic Properties ]

- Synthesized diverse morphologies of one-dimensional and two-dimensional noble metal nanoparticles.
- Engineered and characterized nanoparticles exhibiting plasmonic-magnetic characteristics.
- Strategically explored diverse applications for hydrogels integrated with nanoparticle implants.

### Indiana University Bloomington Ye Research Group

Undergraduate Research Assistant (PI: Prof. Xingchen Ye)

June 2022 – August 2022

Bloomington, Indiana

[ Shape-Controlled Overgrowth of Noble Metal Nanoparticles ]

- Performed synthesis of shape-controlled overgrowth of noble metal nanoparticles through iterative reductive growth and depletion attraction - based purification method.
- Analyzed the morphology and plasmonic properties of nanoparticles.

### EWU Molecular Design Lab

Undergraduate Research Assistant (PI: Prof. Jean Bouffard)

March 2022 – June 2022

Seoul, South Korea

[ Triazolium Adduct Synthesis by Dearomative Cycloaddition ] (cf. JACS 2023, 45, 12214)

- Organized and performed synthesis of organic compounds, and analyzed the results using NMR.
- Conducted reaction workup and purification through extraction, chromatography, and recrystallization.

## Awards and Honors

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**Summa Cum Laude**

Ewha Womans University

2024

**Dean's List**

Ewha Womans University

Six Semesters

**Future Career Building Scholarship**

Ewha Womans University

2022, 2023

**ISURP**

Indiana University Bloomington

2022

**Internship Scholarship**

Ewha Womans University

2022

**Study Scholarship**

Ewha Womans University

2022

## Professional Experience

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### Henkel

Adhesive Product Development Intern

November 2021 – January 2022

Busan, South Korea

- Executed lab testing, and conducted experiments for the development of both liquid and solid adhesive products, including application tests and result analysis.
- Contributed to solvent research in support of a product improvement project.

### Korea Scholar's Conference for Youth

Head Chemistry Research Facilitator

May 2019 – July 2021

Seoul, South Korea

- Established a research program for students and provided mentorship for preparing student research papers and planning chemistry research experiments.
- Conducted interviews, recruited, trained, and led facilitators to deliver participants a comprehensive educational experiences.

## Technical skills

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### Instruments

UV-Visible Spectroscopy, SAXS, STEM, TEM, XRD, Tube Furnace, Viscometer, Ocean Optics

### Software

Origin Pro, 3Ds Max, Rhinoceros

### Programming Languages

Python, C,  $\LaTeX$

## Teaching Experience

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### Science Student Teacher

Ewha Geumran Middle School

April 2023

- Devised learning programs and assessments while delivering instruction to a group of 90 K-9 students.

### Inorganic Chemistry Tutor

Ewha Womans University

September 2022 - December 2022

- Mentored 7 students to achieve above average scores and better understandings in Inorganic Chemistry.

## Extracurricular Activities

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### Science and Education Debate Club

President

March 2019 – Present

Seoul, South Korea

- Lead weekly debates about recent findings and issues in science, and demonstrated strong organizational skills by coordinating club events.
- Established annual alumni networking meeting with attendance of 140+ participants.

### Woman@Dior

Mentee

March 2023 – November 2023

Seoul, South Korea

- Planned and executed 'The White Ribbon' project to bridge generational gaps among women and foster unity.

## Volunteering

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### Language Tutor

Ewha Womans University

April 2022 - June 2022

### Science Teacher

Geoje City Local Children Center

July 2021 - August 2021

### Science Tutor

Yeouido Woman's High School

April 2019 - June 2019