

Seoyoung Lee

Daejeon, Republic of Korea
+82-10-8353-7337 | juhee9327@gmail.com | <https://seoyoung27.github.io/> |

Research Interests

Organic Synthesis, Transition-metal Catalysis, Organocatalysis, Total Synthesis, and Green Chemistry

Education

Korea Advanced Institute of Science and Technology (KAIST)

M.S. in Chemistry (Advisor: Professor Hyun Woo Kim)
Thesis: Synthesis of aza-macrocycles by palladium-catalyzed dehydrative allylation [[URL](#)]
Overall GPA: 3.40/4.0, Major GPA: 3.54/4.0
Cumulative GPA (a 100-point scale) : 90.55/100

Daejeon, Korea
Mar. 2018 - Feb. 2020

Hanyang University

B.S. in Chemistry
SUMMA CUM LAUDE, Overall GPA: 3.76/4.0, Major GPA: 3.89/4.0
Cumulative GPA (a 100-point scale) : 95.5/100

Seoul, Korea
Mar. 2014 - Feb. 2017

Kyonggi University

Transferred to Hanyang University
Overall GPA: 3.34/4.0, Major GPA: 3.61/4.0

Suwon, Korea
Mar. 2011 - Feb. 2014

Publications

International Journals

- **[Manuscript in preparation]** Seoyoung Lee, Kyungjun Kang, Ansoo Lee, and Hyunwoo Kim, "Synthesis of aza-macrocycles by palladium-catalyzed dehydrative allylation ". (In preparation)
- **[Published]** So Won Youn, Huen Ji Yoo, Eun Mi Lee, **Seo Young Lee**, "Metal-Free One-Pot Synthesis of (Tetrahydro)Quinolines through Three-Component Assembly of Arenediazonium Salts, Nitriles, and Styrenes", *Adv. Synth. Catal.* **2018**, 360, 278. [[URL](#)]

Domestic Conference

- **[Oral and Poster]** Seoyoung Lee, Kyungjun Kang, Ansoo Lee, and Hyunwoo Kim, "Efficient Synthesis of Trans Unsaturated Large-Sized azacycles by Palladium-Catalyzed Dehydrative Cross-Coupling". the 11th Workshop on Organic Chemistry for Junior Chemists (WOCJC-11), KAIST, Daejeon, Republic of Korea, 5th June 2019

Work Experience

LG Display

Research Engineer; FO Material Development Team
▪ Developed Polarizers and Adhesives for flexible mobile phones
▪ Developed Polarizers and Adhesives for flexible laptops

Paju, Korea
Feb. 2020-May. 2021

LG Display

Intern; Material Research Team
▪ Developed Crystal Sound OLED

Seoul, Korea
Jul. 2019-Aug. 2019

Patents

Korean Patent

- **[Patent pending]** Seoyoung Lee, Seungwoon Park, Hyejung Park, "Foldable Display and manufacturing method thereof". Korea, Application number: 10-2021-0090821 (**patent pending**)
- **[Published]** Seoyoung Lee, Jongeun Lee, Seungwoon Park, Jichul Lim "Foldable Display", Korea, Registration number: 10-2020-0189232

International Patent

- **[Published]** Seoyoung Lee, Jongeun Lee, Seungwoon Park, Jichul Lim "Optimization of reflection at two viewing angles by optimizing the retarder axis under the polarizer", US Patent number, US 2022/0209201 A1

Research Projects

Development of polarizers for flexible laptops

Development of the Inner Folding Laptops

- Led and designed the overall experiment of the project
- Conducted several simulations for polarizers and tested the physical properties of polarizers
- Proposed a model for flexible laptops
- Arranged meetings with partner companies
- Found out the best combination of Polarizers and Adhesives for flexible laptops through simulations and tests

LG Display
Nov. 2020 – May. 2021

Development of adhesives for flexible laptops

Development of the Inner Folding Laptops

- Led and designed the overall experiment of the project
- Proposed a model for flexible laptops
- Conducted simulations for adhesives and tested the physical properties of adhesives

LG Display
Nov. 2020 – May. 2021

Development of polarizers for flexible mobile phones

Development of the Outer Folding Mobile Phones

- Conducted and designed the overall experiment of the project
- Tested the physical properties of polarizers
- Found out the best combination of Polarizers and Adhesives for Mobile Phones

LG Display
Feb. 2020 – Nov. 2020

Academic Projects

Transition metal catalysis study using novel π -acceptor ligands

Basic Research Project, funded by the National Research Foundation of Korea

- Led and designed the overall experiment of the project
- Proposed a new synthetic method and optimized the design of macrocycles
- Synthesized new organic materials via palladium-catalyzed reaction

KAIST
Sep. 2018 – Dec. 2019

Asymmetric ion-pairing catalysis using chiral metal complex

Industry R&D Project, funded by Samsung Science & Technology Foundation

- Designed and synthesized various asymmetric ligands

KAIST
Mar. 2018 – Dec. 2019

Hydroformylation reaction catalyst development through ligand design

Original Technology Development Project, funded by Ajou University

- Designed and synthesized Bicyclic Bridgehead Phosphoramidite (Briphos) ligands

KAIST
Sep. 2018 – Dec. 2018

Study on the origin of enantiomers

KAIST's Own Research Project, funded by KAIST

- Synthesized starting materials for photocatalysts
- Led and designed the overall experiment of the project

KAIST
Mar. 2018 – Dec. 2018

Synthesis of quinoline derivatives

- Expanded the substrate scope for quinoline derivatives
- Optimized the reaction condition

Hanyang University
Dec. 2016 – Jun. 2017

Honors and Awards

2021 Best Patent Idea Award, LG Display

Feb. 2021

2019 Workshop on Organic Chemistry for Junior Chemists (WOCJC-11) Gold Award

Jun. 2019

LG Display Scholarship, KAIST – Full Tuition (4 Semesters)

2018 - 2020

Graduating with Honors – Summa Cum Laude

Feb. 2017

Academic Achievement Excellence Award, Hanyang University

2014 - 2016

National Science and Technology Scholarship – Full Tuition (1 Semester)

2016

National Science and Technology Scholarship – 30% Tuition (1 Semester)

2012

Teaching and Mentoring Experience

Mentoring Experience for undergraduate students in MDOS Laboratory, KAIST

Jun. 2018 – Dec. 2019

Skills

1. Familiar with several chemical experimental techniques such as HPLC and GC-MS analysis
2. Familiar with several property analysis techniques such as Texture Analyzer, UV-Vis, UTM, and Ball-drop test
3. Familiar with several simulators and tools such as Abaqus, and Techwiz