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## EDUCATION

Ph.D., Organic Chemistry, **ETH Zürich**, Zürich, Switzerland (Advisor: Prof. Bill Morandi) 2018-2021  
M.S., Chemistry, **Korea University**, Seoul, South Korea (Advisor: Prof. Sang-Won Lee) 2003-2005  
B.S., Chemistry, **Korea University**, Seoul, South Korea 1999-2003

## EXPERIENCE

**Korea University**, Seoul, South Korea  
Assistant Professor 09/2021-present  
**ETH Zürich**, Zürich, Switzerland  
Postdoctoral Scholar (Advisor: Prof. Peter Chen) 04/2021-07/2021  
**Max-Planck-Institut für Kohlenforschung**, Mülheim an der Ruhr, Germany  
Graduate Researcher (Advisor: Prof. Bill Morandi) 08/2015-06/2018  
**LG Chem**, Daejeon, South Korea  
Research Scientist 01/2005-07/2015  
On-purpose Linear  $\alpha$ -Olefins (Selective Ethylene Tri-/Tetramerization) Project 2012-2015  
Kazakhstan R&D Center Establishment Project (Consultant) 2012  
Bimodal Metallocene High-Density Polyethylene Project 2011-2013  
Metallocene Linear Low-Density Polyethylene Project 2007-2012  
Metallocene Polyethylene of Raised Temperature Resistance Project 2006-2008  
Natural Gas to Vinyl Chloride Project 2005-2006  
High Impact Strength Poly(Vinyl Chloride) Project 2005  
**Republic of Korea Army**, South Korea  
Expert Research Personnel at LG Chem as Military Service 03/2005-04/2008  
**POSTECH**, Pohang, South Korea  
Undergraduate Researcher (Advisor: Prof. Kimoon Kim) 07/2001-08/2001

## PUBLICATIONS

- Denton, E. H.†; [Lee, Y. H.†](#); Roediger, S.; Boehm, P.; Fellert, M.; Morandi, B. Catalytic carbochlorocarbonylation of unsaturated hydrocarbons via C–COCl bond cleavage. *Angew. Chem. Int. Ed.* **2021**, *60*, 23435–23443 (Highlighted in *Synfacts* **2021**, *17*, 1349. †authors contributed equally).
- Boehm, P.†; Martini, T.†; [Lee, Y. H.](#); Cacherat, B.; Morandi, B. Palladium-catalyzed decarbonylative iodination of aryl carboxylic acids enabled by ligand-assisted halide exchange. *Angew. Chem. Int. Ed.* **2021**, *60*, 17211–17217 (Highlighted in *Synfacts* **2021**, *17*, 887).
- [Lee, Y. H.](#); Denton, E. H.; Morandi, B. Palladium-catalysed carboformylation of alkynes using acid chlorides as a dual carbon monoxide and carbon source. *Nat. Chem.* **2021**, *13*, 123–130 (Highlighted in *Nat. Chem. News & Views*; *Synfacts* **2021**, *17*, 401).
- [Lee, Y. H.](#); Denton, E. H.; Morandi, B. Modular cyclopentenone synthesis through the catalytic molecular shuffling of unsaturated acid chlorides and alkynes. *J. Am. Chem. Soc.* **2020**, *142*, 20948–20955.
- [Lee, Y. H.](#); Morandi, B. Palladium-catalyzed intermolecular aryliodination of internal alkynes. *Angew. Chem. Int. Ed.* **2019**, *58*, 6444–6448 (Selected as VIP paper).
- [Lee, Y. H.](#); Morandi, B. Transition metal-mediated metathesis between P–C and M–C bonds: beyond a side reaction. *Coord. Chem. Rev.* **2019**, *386*, 96–118.
- [Lee, Y. H.](#); Morandi, B. Metathesis-active ligands enable a catalytic functional group metathesis between aryl chlorides and aryl iodides. *Nat. Chem.* **2018**, *10*, 1016–1022.
- [Lee, Y. H.](#); Morandi, B. C–H Carbonylation: *in situ* acyl triflates ace it. *Nat. Chem.* **2018**, *10*, 116–117 (News & Views article).
- [Lee, Y. H.](#); Morandi, B. Ether synthesis through reductive cross-coupling of ketones with alcohols using Me<sub>2</sub>SiHCl as both reductant and Lewis acid. *Synlett* **2017**, *28*, 2425–2428 (Invited Cluster article).

10. Shin, J.-W.; Lee, Y. H.; Hwang, S.; Lee, S.-W. Observation of an unusually facile fragmentation pathway of gas-phase peptide ions: a study on the gas-phase fragmentation mechanism and energetics of tryptic peptides modified with 4-sulfophenyl isothiocyanate (SPITC) and 4-chlorosulfophenyl isocyanate (SPC) and their 18-crown-6 complexes. *J. Mass Spectrom.* **2007**, *42*, 380–388.
11. Lee, Y. H.; Shin, J.-W.; Ryu, S.; Lee, S.-W.; Lee, C. H.; Lee, K. Enrichment of *N*-terminal sulfonated peptides by a water-soluble fullerene derivative and its applications to highly efficient proteomics. *Analytica Chimica Acta* **2006**, *556*, 140–144.
12. Oh, J. Y.; Moon, J. H.; Lee, Y. H.; Hyung, S.-W.; Lee, S.-W.; Kim, M. S. Photodissociation tandem mass spectrometry at 266nm of an aliphatic peptide derivatized with phenyl isothiocyanate and 4-sulfophenyl isothiocyanate. *Rapid Commun. Mass Spectrom.* **2005**, *19*, 1283–1288.
13. Lee, Y. H.; Han, H.; Chang, S.-B.; Lee, S.-W. Isotope-coded *N*-terminal sulfonation of peptides allows quantitative proteomic analysis with increased *de novo* peptide sequencing capability. *Rapid Commun. Mass Spectrom.* **2004**, *18*, 3019–3027.
14. Lee, Y. H.; Kim, M.-S.; Choie, W.-S.; Min, H.-K.; Lee, S.-W. Highly informative proteome analysis by combining improved *N*-terminal sulfonation for *de novo* peptide sequencing and online capillary reverse-phase liquid chromatography/tandem mass spectrometry. *Proteomics* **2004**, *4*, 1684–1694.

## GRANTED PATENTS

Selected from **60** US Patents and **100** Korean Patents.

1. Metallocene compound, catalyst composition including the same, and method of preparing olefin-based polymer using the same. US Patent 9994653 issued 20180612.
2. 1-Octene composition. US Patent 9969659 issued 20180515.
3. Metallocene compound, a catalyst composition comprising the same, and a method of preparing an olefinic polymer by using the same. US Patent 9725472 issued 20170808.
4. Ligand compound, catalyst system for olefin oligomerization, and method for olefin oligomerization using the same. US Patent 9637508 issued 20170502.
5. Olefin block copolymer. US Patent 9056939 issued 20150616.

## AWARDS

<b>POSCO Science Fellowship 2023</b> , POSCO TJ Park Foundation	2023-2025
<b>ETH Medal</b> , ETH Zürich ( <i>Outstanding PhD thesis award</i> )	2022
<b>Reaxys PhD Prize 2019</b> , Elsevier ( <i>One of the 45 finalists</i> )	2019
<b>LG Chem R&amp;D Award</b> , LG Chem	
“Slurry Phase Process Technology for Very Low Density Polyethylene”	2014
“Production Technology for Polyolefin Elastomers Having High Temperature Resistance”	2011
“Metallocene Linear Low Density Polyethylene for High Impact Strength and High Transparency Film”	2010
“Metallocene Polyethylene of Raised Temperature Resistance for Hot and Cold Water Pipes”	2008
<b>IR (Industrial Research) 52 Jang Young-Shil Award</b> , Korean Industrial Technology Association (KOITA)	
“Metallocene Linear Low Density Polyethylene for High Impact Strength and High Transparency Film”	2010
“Metallocene Polyethylene of Raised Temperature Resistance for Hot and Cold Water Pipes”	2007
<b>Distinguished Research Paper Award</b> , Korea University ( <i>Outstanding PhD/MS thesis award</i> )	2005

## INVITED TALKS

“Harnessing reversibility in catalytic carbonylation and halogenation reactions”

GIST, Gwangju, South Korea	March 16, 2023
Dong-A University, Busan, South Korea	December 08, 2022
KAIST, Daejeon, South Korea	June 28, 2022
Korea Research Institute of Chemical Technology (KRICT), Daejeon, South Korea	June 20, 2022
Sogang University, Seoul, South Korea	June 08, 2022
DGIST, Daegu, South Korea	June 07, 2022
Jeonbuk National University, Jeonju, South Korea	May 12, 2022
Ewha Womans University, Seoul, South Korea	April 07, 2022
Yeungnam University, Gyeongsan, South Korea	February 16, 2022
Seoul National University, Seoul, South Korea	December 09, 2021
Sungkyunkwan University, Suwon, South Korea	November 24, 2021
Korea University, Seoul, South Korea	February 16, 2021
POSTECH, Pohang, South Korea	February 04, 2021