

# 기능성 유기분자 합성 연구실

Functional Organic  
Molecules Synthesis  
Laboratory



홍석원  
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## Education

- 2003 Ph.D. in Chemistry, Northwestern University
- 1997 M.S. in Chemistry, Seoul National University
- 1995 B.S. in Chemistry, Seoul National University

## Experience

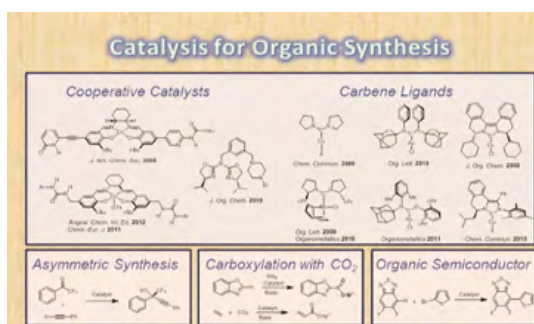
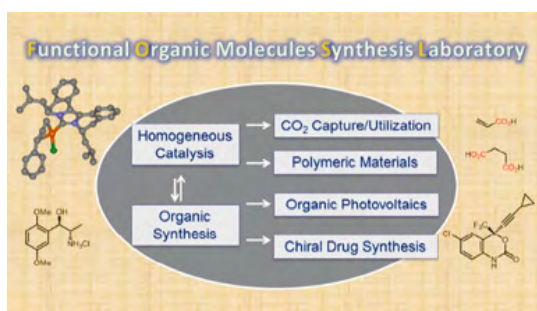
- 2019 ~ Professor, Department of Chemistry
- 2019 ~ 2020 Department Chair
- 2016 ~ 2018 Associate Professor, Department of Chemistry
- 2012 ~ 2015 Associate Professor, School of Materials Science and Engineering

## Honors and Awards

- 2020 23rd Sehi Jang Award, Korean Chemical Society
- 2012 ACS Organometallics Fellow
- 2009 Thieme Chemistry Journal Award
- 2007 Ralph E. Powe Junior Faculty Enhancement Award

## 연구실 소개

Research in our laboratory focuses on the development of new transition metal catalysts for organic synthesis. We use organic synthesis, organometallics, catalysis, and supramolecular chemistry to develop new synthetic methods for organic molecules of interesting properties. We are particularly interested in designing new types of transition metal catalysts that can offer highly efficient synthetic routes to functional organic materials, and applying them in synthesizing chiral building blocks and functionalized polyolefins, catalytic CO<sub>2</sub> conversion, olefin metathesis of biomass oils, and constructing organic electronic devices such as organic thin film transistors (OTFT) and organic solar cells.



## 연구 성과

### 수행중인 주요 연구과제 (주요과제경력)

- 팔라듐 촉매를 이용한 입체선택적 공역 첨가반응의 개발 (한국연구재단, 중견연구자지원사업, 2020.3 ~ 2023.2)
- 화학기상증착용 금속 칼코게나이드 단일소스 전구체 개발 (한국연구재단, 미래소재디스커버리 사업, 2021.1 ~ 2024.12)
- 에틸렌 북분해 반응을 위한 균일계 촉매 개발 (한국연구재단, 기후변화대응기술개발사업, 2017.8 ~ 2021.12)
- 에틸렌과 이산화탄소를 이용한 아크릴레이트 합성반응 촉매 개발 (LG화학, 2021.3 ~ 2022.1)

### 주요논문 (대표실적)

- "Reversibly Photoswitchable Catalysts for Olefin Metathesis Reactions", ACS Catal. 2021, 11, 13860-13865
- "Photoredox-Catalyzed  $\alpha$ -Aminoalkylcarboxylation of Allenes with CO<sub>2</sub>", Org. Lett. 2021, 23, 3879-3884
- "Organic Cathode Interfacial Materials for Non-Fullerene Organic Solar Cells", J. Mater. Chem. A. 2021, 9, 13506-13514
- "Highly Efficient Ethenolysis and Propenolysis of Methyl Oleate Catalyzed by Abnormal N-Heterocyclic Carbene Ruthenium Complexes in Combination with Phosphine-Copper Cocatalyst", ACS Catal. 2020, 18, 10592-10601
- "Abnormal N-Heterocyclic Carbene Palladium Complexes for the Copolymerization of Ethylene and Polar Monomers", ACS Catal. 2020, 10, 5443-5453
- "Catalytic Enantioselective Synthesis of Tetrasubstituted Chromanones via Palladium-Catalyzed Asymmetric Conjugate Arylation Using Pyridine-Dihydroisoquinoline Ligands", Chem. Sci., 2020, 11, 4602-4607
- "Enantioselective Alkynylation of Trifluoromethyl Ketones Catalyzed by Cation-Binding Salen Nickel Complexes", Angew. Chem. Int. Ed. 2020, 59, 775-779.

### 주요연구시설



## 융합연구 및 비전

CO<sub>2</sub> Capture  
and Utilization

글로벌인재양성

Catalysis for  
Organic Synthesis

협력

Organic  
Semiconducting  
Materials

인류복지향상