Hiroki Hayashi

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Personal Data

Date of Birth	November 11th, 1988
Place of Birth	Aichi, Japan
Gender	Male
Nationality	Japan

Education

2011.3	**B. Eng.**, School of Engineering, Nagoya University, Japan (Prof. Kazuaki Ishihara)
2013.3	**M. Eng.**, Graduate School of Engineering, Nagoya University, Japan (Prof. Kazuaki Ishihara)
2016.3	**PhD. Eng.**, Graduate School of Engineering, Nagoya University, Japan (Prof. Kazuaki Ishihara)
2014.9–12	**Visiting Scholar**, Department of Chemistry, University of Berkeley, California, United States (Prof. John F. Hartwig)

Academic Career

2016.4–2017.3	**Postdoctoral Researcher**, Department of Chemistry, University of Berkeley, California, United States (Prof. John F. Hartwig)
2017.4–2020.1	**Assistant Professor**, Faculty of Arts and Science, Kyushu University (Assoc. Prof. Tatsuya Uchida)
2020.2–present	**Specially Appointed Assistant Professor**, WPI-ICReDD, Hokkaido University (JST-ERATO Maeda Artificial Intelligence for Chemical Reaction Design and Discovery Project)

Fellowships & Grants

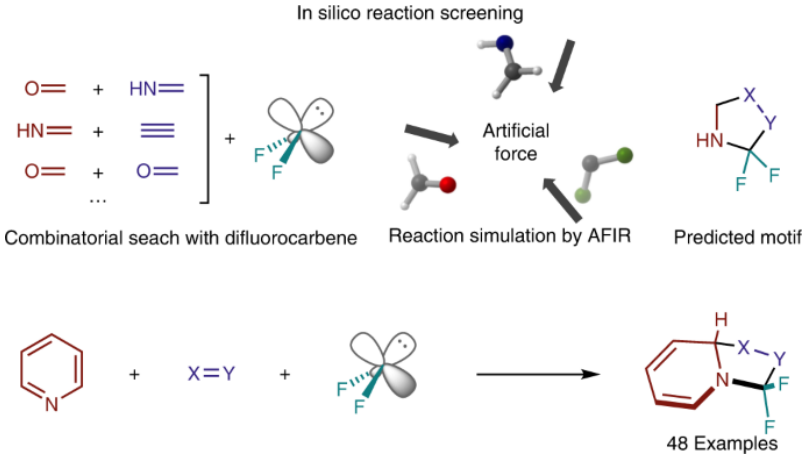
2015.4–2016.3	Research Fellow of the Japan Society for the Promotion of Sciences (DC2)
2016.4–2017.3	2016 The Naito Foundation Postdoctoral Fellow for Research Abroad
2020.4–2022.3	JSPS Grant-in-Aid for Young Scientists (20K15284)
2021.8–2022.2	2021 The NOASTEC Foundation Subsidy for Young Scientists

Awards

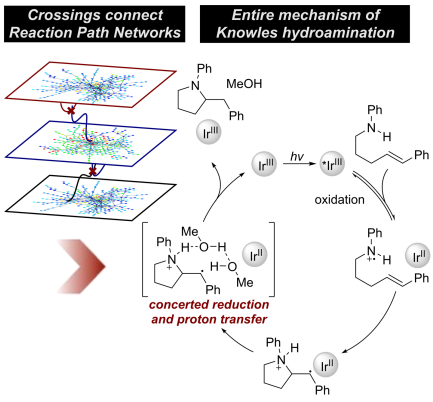
2012	Very Important Presentation Award at the 43rd Annual Meeting of Union of Chemistry-Related Societies in Chubu Area, Japan
2013	Poster Award at the 1st IGER Annual Meeting, Japan
2014	Poster Award at the 31st Seminar of Organic Synthetic Chemistry, Japan
2015	Reaxys PhD Prize Finalist, UK
2015	Otsu Conference Award Fellow, Japan
2016	Presentation Award at the 96th CSJ Annual Meeting, Japan
2020	The Central Glass Award in Synthetic Organic Chemistry, Japan
2021	The Best Poster Presentation Award at the 7th Hokkaido University Cross-Departmental Symposium, Japan
2023	The Chemical Society of Japan Lecture Award for Young Chemists

Publications

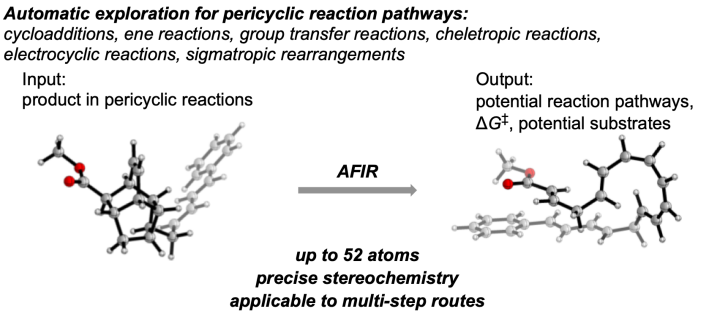
1. "In Silico Reaction Screening with Difluorocarbene for *N*-difluoroalkylative Dearomatization of Pyridines"
   Hiroki Hayashi, Hitomi Katsuyama, Hideaki Takano, Yu Harabuchi, Satoshi Maeda, Tsuyoshi Mita
   Nat. Synth. **2022**, *1*, 804–812.



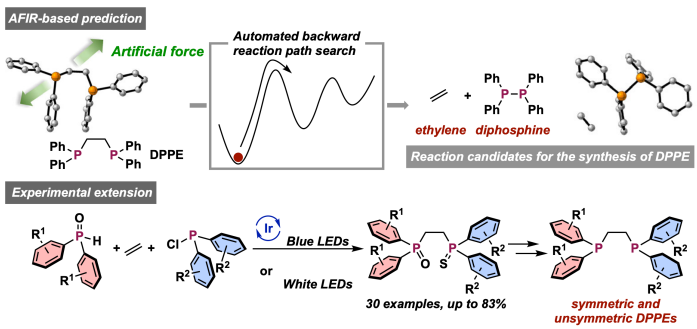
2. “Oxidation and Reduction Pathways in the Knowles Hydroamination via a Photoredox-Catalyzed Radical Reaction”
   Yu Harabuchi, **Hiroki Hayashi**, Hideaki Takano, Satoshi Maeda, Tsuyoshi Mita
   Angew. Chem. Int. Ed. **2022**, e202211936.



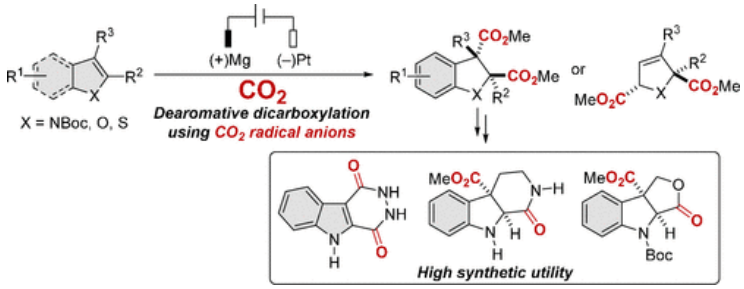
3. "Prediction of High-Yielding Single-Step or Cascade Pericyclic Reactions for the Synthesis of Complex Synthetic Targets"
   Tsuyoshi Mita, Hideaki Takano, **Hiroki Hayashi**, Wataru Kanna, Yu Harabuchi, Kendall, Houk. Satoshi Maeda
   J. Am. Chem. Soc. **2022**, *in press*.



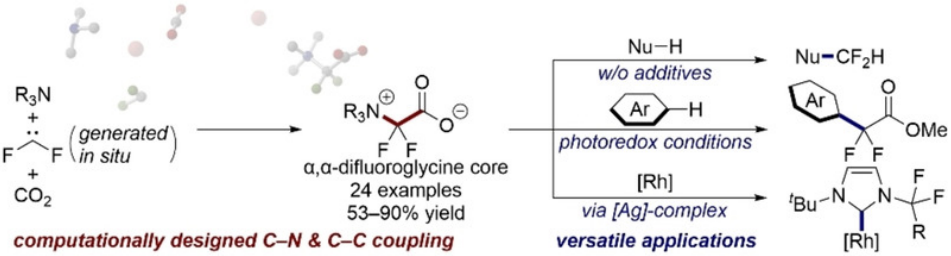
4. “A Theory-driven Synthesis of Symmetric and Unsymmetric 1,2-Bis(diphenylphosphino) ethane Analogues via Radical Difunctionalization of Ethylene”
   Hideaki Takano, Hitomi Katsuyama, **Hiroki Hayashi**, Wataru Kanna, Yu Harabuchi, Satoshi Maeda, Tsuyoshi Mita
   Nat. Commun. **2022**, *in press*.



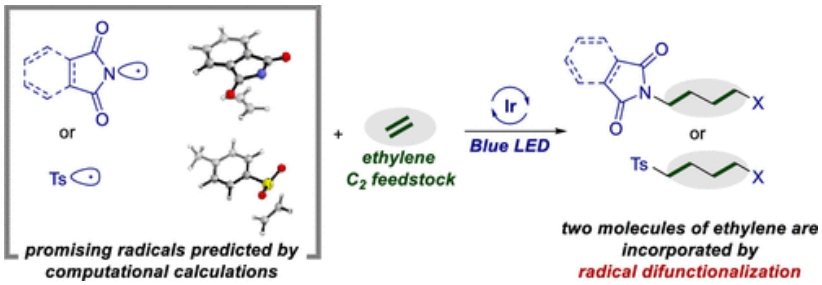
5. “Electrochemical Dearomative Dicarboxylation of Heterocycles with Highly Negative Reduction Potentials”
   Yong You, Wataru Kanna, Hideaki Takano, **Hiroki Hayashi**, Satoshi Maeda, Tsuyoshi Mita
   J. Am. Chem. Soc. **2022**, *144*, 3685–3695.



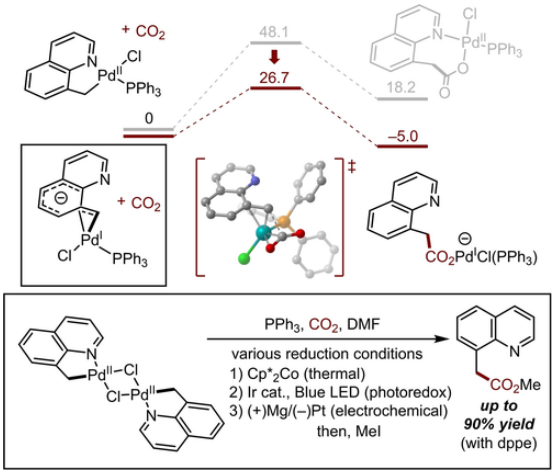
6. “Synthesis of Difluoroglycine Derivatives from Amines, Difluorocarbene, and CO_2: Computational Design, Scope, and Applications”
   Hiroki Hayashi, Hideaki Takano, Hitomi Katsuyama, Yu Harabuchi, Satoshi Maeda, Tsuyoshi Mita
   Chem. Eur. J. **2021**, *27*, 10040–10047.



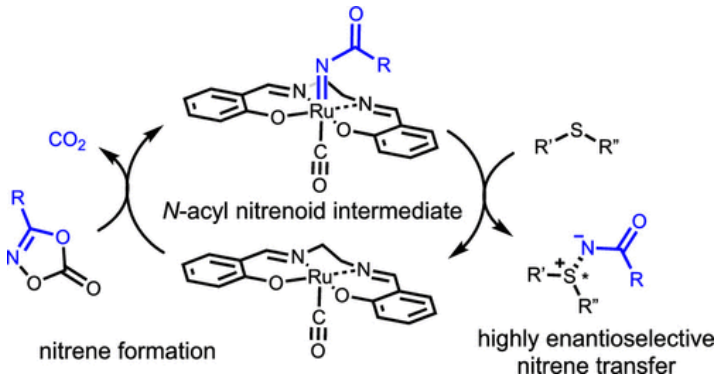
7. “Radical Difunctionalization of Gaseous Ethylene Guided by Quantum Chemical Calculations: Selective Incorporation of Two Molecules of Ethylene”
   Hideaki Takano, Yong You, **Hiroki Hayashi**, Yu Harabuchi, Satoshi Maeda, Tsuyoshi Mita
   ACS Omega. **2021**, *6*, 33846–33854.



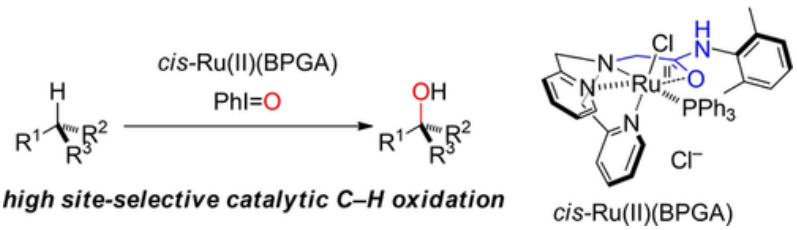
8. “Carboxylation of a Palladacycle Formed via C(sp3)–H Activation: Theory-Driven Reaction Design”
   Wataru Kanna, Yu Harabuchi, Hideaki Takano, **Hiroki Hayashi**, Satoshi Maeda, Tsuyoshi Mita
   Chem. Asian J. **2021**, *16*, 4072–4080.



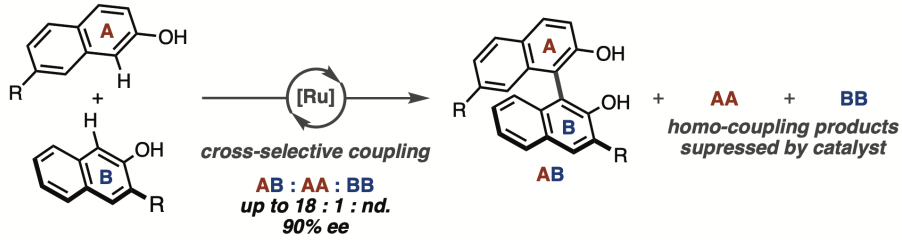
9. “Ruthenium-Catalyzed Asymmetric N-Acyl Nitrene Transfer Reaction: Imidation of Sulfide”
   Masaki Yoshitake, **Hiroki Hayashi**, Tatsuya Uchida
   Org. Lett. **2020**, *22*, 4021–4025.



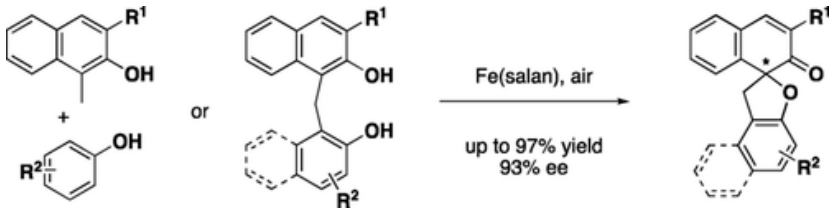
10. “Non-Heme-Type Ruthenium Catalyzed Chemo- and Site-Selective C–H Oxidation”
    Daiki Doiuchi, Tatsuya Nakamura, **Hiroki Hayashi**, Tatsuya Uchida
    Chem. Asian J. **2020**, *15*, 762–765.



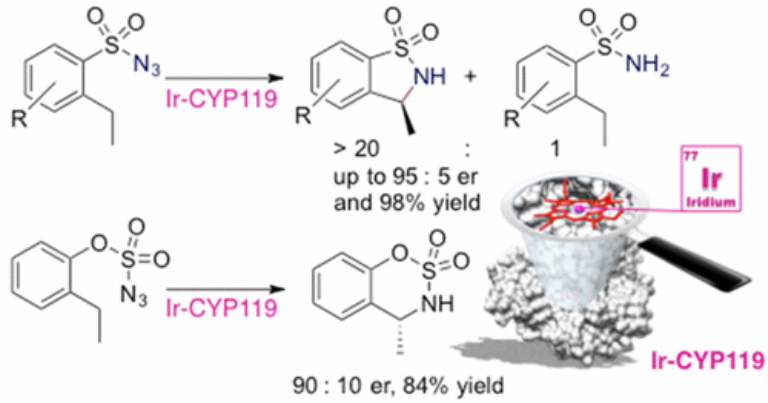
11. “Ruthenium-Catalyzed Cross-Selective Asymmetric Oxidative Cross-Coupling of Arenols”
Hiroki Hayashi, Takamasa Ueno, Chungsik Kim, Tatsuya Uchida
Org. Lett. **2020**, *22*, 1469–1474.



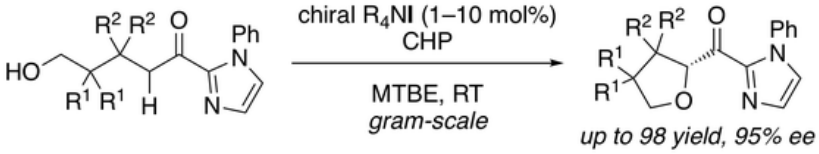
12. “Iron-Catalyzed Asymmetric Inter- and Intramolecular Aerobic Oxidative Dearomatizing Spirocyclization of 2-Naphthols”
Takuya Oguma, Daiki Doiuchi, Chisaki Fujitomo, Chungsik Kim, **Hiroki Hayashi**, Tatsuya Uchida, Tsutomu Katsuki
Asian J. Org. Chem. **2019**, *9*, 404–415.



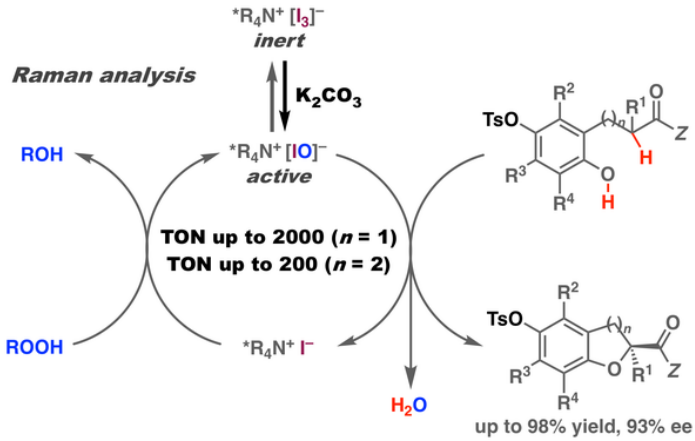
13. “Chemoselective, Enzymatic C–H Bond Amination Catalyzed by a Cytochrome P450 Containing an Ir(Me)-PIX Cofactor”
Paweł Dydio, Hanna M. Key, **Hiroki Hayashi**, Douglas S. Clark, John F. Hartwig
J. Am. Chem. Soc. **2017**, *139*, 1750–1753.



14. “Chiral Ammonium Hypoiodite Salt-Catalyzed Enantioselective Oxidative Cycloetherification to 2-Acyl Tetrahydrofurans”
Muhammet Uyanik, **Hiroki Hayashi**, Hirokazu Iwata, Kazuaki Ishihara
Chem. Lett. **2016**, *45*, 353–355.



15. “High-Turnover Hypoiodite Catalysis for Asymmetric Synthesis of Tocopherols”
Muhammet Uyanik, **Hiroki Hayashi**, Kazuaki Ishihara
Science **2014**, *345*, 291–294.



Review:

16. “Toward Ab Initio Reaction Discovery Using the Artificial Force Induced Reaction Method”
Satoshi Maeda, Yu Harabuchi, **Hiroki Hayashi**, Tsuyoshi Mita
Ann. Rev. Phys. Chem. **2022**, *in press*.

17. “Nitrene Transfer Reactions for Asymmetric C-H Amination: Recent Development”
Hiroki Hayashi, Tatsuya Uchida
Eur. J. Org. Chem. **2020**, *8*, 909–916.