

## Curriculum Vitae

### **Masahiro Kojima (小島正寛)**

Assistant Professor (Prof. Shigeki Matsunaga group)

Laboratory of Synthetic and Industrial Chemistry

Faculty of Pharmaceutical Sciences, Hokkaido University

Kita-12 Nishi-6, Kita-ku, Sapporo 060-0812 Japan

Tel: (+81)-11-706-3766

Fax: (+81)-11-706-4981

E-mail: m-kojima@pharm.hokudai.ac.jp

ORCID: [orcid.org/0000-0002-4619-2621](https://orcid.org/0000-0002-4619-2621)

### **Personal Data**

Gender: Male

Date of Birth: October 21, 1989

Place of Birth: Nagano, Japan

Nationality: Japanese

Language: Japanese and English

### **Education/ Career**

#### **2012.3 BS**

Department of Pharmaceutical Sciences, The University of Tokyo

Under the supervision of Prof. Motomu Kanai

#### **2014.3 Master**

Graduate School of Pharmaceutical Sciences, The University of Tokyo

Under the supervision of Prof. Motomu Kanai

#### **2017.3 Ph.D. (Pharmaceutical Sciences)**

Graduate School of Pharmaceutical Sciences, The University of Tokyo

Under the supervision of Prof. Motomu Kanai

#### **2014.9-10 Internship Student**

Department of Chemistry and Pharmacy, Ludwig-Maximilians-Universität München

Under the supervision of Prof. Dirk Trauner

**2017.4-6 Postdoctoral Researcher (JSPS PD)**

Graduate School of Pharmaceutical Sciences, The University of Tokyo

Under the supervision of Prof. Motomu Kanai

**2017.7-2018.3 Postdoctoral Researcher (JSPS Overseas Research Fellow)**

Department of Chemistry, University of California, Berkeley

Under the supervision of Prof. John F. Hartwig

**2018.4-present Assistant Professor**

Laboratory of Synthetic and Industrial Chemistry (Prof. Shigeki Matsunaga group)

Faculty of Pharmaceutical Sciences, Hokkaido University

**Fellowships**

- Member of Graduate Program for Leaders in Life Innovation (GPLLI) (2013.4-2017.3)
- Research Fellow of the Japan Society for the Promotion of Science (JSPS DC2) (2016.4-2017.3)
- Research Fellow of the Japan Society for the Promotion of Science (JSPS PD) (2017.4-2017.6)
- JSPS Overseas Research Fellow (2017.7-2018.3)

**Memberships**

- Pharmaceutical Society of Japan
- The Society of Synthetic Organic Chemistry, Japan
- 7th Otsu Conference Award Fellow

**Awards and Honors**

- 2013 Presentation Award, 133th Annual Conference of Pharmaceutical Society of Japan
- 2014 Presentation Award, 134th Annual Conference of Pharmaceutical Society of Japan
- 2015 Presentation Award for Young Investigators, 69th Kanto Symposium of The Society of Synthetic Organic Chemistry, Japan
- 2016 Presentation Award, 136th Annual Conference of Pharmaceutical Society of Japan
- 2016 Presentation Award for Research Proposal Session, 7th Otsu Conference
- 2016 Poster Presentation Award, 110th Organic Synthesis Symposium
- 2017 The Representative of the Graduating PhD Students, Faculty of Pharmaceutical Sciences, The University of Tokyo

## Publication List

1. Masahiro Kojima, Kounosuke Oisaki\*, Motomu Kanai\*  
“Chemoselective Aerobic Photo-Oxidation of 9H-Fluorenes for the Synthesis of 9-Fluorenones”  
*Tetrahedron Lett.* **2014**, *55*, 4736-4738.
2. Masahiro Kojima, Kounosuke Oisaki\*, Motomu Kanai\*  
“Metal-free C–H Arylation of Coumarins Promoted by Catalytic Amounts of 5,10,15,20-Tetrakis(4-diethylaminophenyl)porphyrin”  
*Chem. Commun.* **2015**, *51*, 9718-9721.
3. Masahiro Kojima, Motomu Kanai\*  
“Tris(pentafluorophenyl)borane-Catalyzed Acceptorless Dehydrogenation of N-Heterocycles”  
*Angew. Chem. Int. Ed.* **2016**, *55*, 12224-12227.
4. Shota Kato, Yutaka Saga, Masahiro Kojima, Hiromu Fuse, Shigeki Matsunaga, Arisa Fukatsu, Mio Kondo, Shigeyuki Masaoka, Motomu Kanai\*  
“Hybrid Catalysis Enabling Room-temperature Hydrogen Gas Release from N-Heterocycles and Tetrahydronaphthalenes”  
*J. Am. Chem. Soc.* **2017**, *139*, 2204-2207.
5. Hiromu Fuse, Masahiro Kojima, Harunobu Mitsunuma, Motomu Kanai\*  
“Acceptorless Dehydrogenation of Hydrocarbons by Noble-Metal-Free Hybrid Catalyst System”  
*Org. Lett.* **2018**, *20*, 2042-2045.
6. Seiya Fukagawa, Yoshimi Kato, Ryo Tanaka, Masahiro Kojima, Tatsuhiko Yoshino,\* Shigeki Matsunaga\*  
“Enantioselective C(sp<sup>3</sup>)–H Amidation of Thioamides Catalyzed by a Cobalt<sup>III</sup>/Chiral Carboxylic Acid Hybrid System”  
*Angew. Chem. Int. Ed.* **2018**, *58*, 1153-1157.
7. Narumi Komami, Keitaro Matsuoka, Ayako Nakano, Masahiro Kojima, Tatsuhiko Yoshino,\* Shigeki Matsunaga\*  
“Synthesis of Functionalized Monoaryl- $\lambda^3$ -iodanes through Chemo- and Site-Selective *ipso*-Substitution Reactions”  
*Chem. Eur. J.* **2018**, *25*, 1217-1220.

8. Koji Takizawa, Tomoyuki Sekino, Shunta Sato, Tatsuhiko Yoshino, Masahiro Kojima,\* Shigeki Matsunaga\*  
"Cobalt-Catalyzed Allylic Alkylation Enabled by Organophotoredox Catalysis"  
*Angew. Chem. Int. Ed.* **2019**, 58, 9199-9203.  
[Top 10% most downloaded paper in Angewandte Chemie International Edition 2018-2019]
9. Keitaro Matsuoka, Narumi Komami, Masahiro Kojima, Tatsuhiko Yoshino,\* Shigeki Matsunaga\*  
"Synthesis of Heteroaryl Iodanes(III) via *ipso*-Substitution Reactions Using Iodine Triacetate Assisted by HFIP"  
*Asian J. Org. Chem.* **2019**, 8, 1107-1110.
10. Yuhei Kumagai, Nanami Murakami, Futa Kamiyama, Ryo Tanaka, Tatsuhiko Yoshino,\* Masahiro Kojima,\* Shigeki Matsunaga\*  
"C–H  $\gamma,\gamma,\gamma$ -Trifluoroalkylation of Quinolines via Visible-Light-Induced Sequential Radical Additions"  
*Org. Lett.* **2019**, 21, 3600-3605.
11. Ryo Tanaka, Masahiro Kojima, Tatsuhiko Yoshino,\* Shigeki Matsunaga\*  
"Cobalt-Catalyzed Synthesis of Homoallylic Amines from Imines and Terminal Alkenes"  
*Chem. Lett.* **2019**, 48, 1046-1049.
12. Daichi Sekine, Kazuki Ikeda, Seiya Fukagawa, Masahiro Kojima, Tatsuhiko Yoshino,\* Shigeki Matsunaga\*  
"Chiral 2-Aryl Ferrocene Carboxylic Acids for the Catalytic Asymmetric C(sp<sup>3</sup>)-H Activation of Thioamides"  
*Organometallics* **2019**, 38, 3921-3926.
13. Ryo Tanaka, Iku Tanimoto, Masahiro Kojima, Tatsuhiko Yoshino,\* Shigeki Matsunaga\*  
"Imidate as the Intact Directing Group for the Cobalt-Catalyzed C–H Allylation"  
*J. Org. Chem.* **2019**, 84, 13203-13210.
14. Seiya Fukagawa, Masahiro Kojima, Tatsuhiko Yoshino,\* Shigeki Matsunaga\*  
"Catalytic Enantioselective Methylene C(sp<sup>3</sup>)-H Amidation of 8-Alkylquinolines Using Cp\*Rh<sup>III</sup>/Chiral Carboxylic Acid System"  
*Angew. Chem. Int. Ed.* **2019**, 58, 18154-18158.

15. Takumaru Kurihara, Masahiro Kojima, Tatsuhiko Yoshino,\* Shigeki Matsunaga\*  
“Cp\*Co<sup>III</sup>/Chiral Carboxylic Acid-Catalyzed Enantioselective 1,4-Addition Reactions of Indoles to Maleimides”  
*Asian J. Org. Chem.* **2020**, *9*, 368-371.
16. Eiki Tomita, Kodai Yamada, Yu Shibata, Ken Tanaka, Masahiro Kojima, Tatsuhiko Yoshino,\* Shigeki Matsunaga\*  
“Iridium(III) Catalysts with an Amide-pendant Cyclopentadienyl Ligand: Double Aromatic Homologation Reactions of Benzamides via Fourfold C–H Activation”  
*Angew. Chem. Int. Ed.* **2020**, *59*, 10474-10478.
17. Tomoyuki Sekino, Shunta Sato, Kazuki Kuwabara, Koji Takizawa, Tatsuhiko Yoshino, Masahiro Kojima,\* Shigeki Matsunaga\*  
“Allyl 4-Chlorophenyl Sulfone as a Versatile 1,1-Synthon for Sequential  $\alpha$ -Alkylation/Cobalt-Catalyzed Allylic Substitution”  
*Synthesis* **2020**, *52*, 1934-1946.
18. Taku Miyazawa, Takuro Suzuki, Yuhei Kumagai, Koji Takizawa, Takashi Kikuchi, Shunsuke Kato, Akira Onoda, Takashi Hayashi, Yuji Kamei, Futa Kamiyama, Masahiro Anada, Masahiro Kojima, Tatsuhiko Yoshino,\* Shigeki Matsunaga\*  
“Chiral Paddle-Wheel Diruthenium Complexes for Asymmetric Catalysis”  
*Nat. Catal.* **2020**, *3*, 851-858.
19. Long-Tao Huang, Seiya Fukagawa, Masahiro Kojima, Tatsuhiko Yoshino,\* Shigeki Matsunaga\*  
“Rhodium(III)/Chiral Carboxylic Acid Catalyzed Enantioselective C(sp<sup>3</sup>)-H Alkylation of 8-Ethylquinolines with  $\alpha,\beta$ -Unsaturated Carbonyl Compounds”  
*Org. Lett.* **2020**, *22*, 8256-8260.
20. Ayako Nakano, Yukino Okabe, Keitaro Matsuoka, Narumi Komami, Keito Watanabe, Masahiro Kojima, Tatsuhiko Yoshino,\* Shigeki Matsunaga\*  
“Generation of Monoaryl- $\lambda^3$ -iodanes from Arylboron Compounds through *ipso*-substitution”  
*Heterocycles* **2021**, *103*, 670-677.
21. Keitaro Matsuoka, Narumi Komami, Masahiro Kojima, Tsuyoshi Mita, Kimichi Suzuki, Satoshi Maeda, Tatsuhiko Yoshino,\* Shigeki Matsunaga\*

"Chemoselective Cleavage of Si–C(sp<sup>3</sup>) Bonds in Unactivated Tetraalkylsilanes Using Iodine Tris(trifluoroacetate)"

*J. Am. Chem. Soc.* **2021**, *143*, 103-108.

22. Youka Bunno, Yuta Tsukimawashi, Masahiro Kojima, Tatsuhiko Yoshino,\* Shigeki Matsunaga\*  
“Metal-Containing Schiff Base/Sulfoxide Ligands for Pd(II)-Catalyzed Asymmetric Allylic C-H Aminations”  
*ACS Catal.* **2021**, *11*, 2663-2668.
23. Yuji Kamei, Yusuke Seino, Yuto Yamaguchi, Tatsuhiko Yoshino, Satoshi Maeda, Masahiro Kojima,\* Shigeki Matsunaga\*  
“Silane- and Peroxide-Free Hydrogen Atom Transfer Hydrogenation Using Ascorbic Acid and Cobalt-Photoredox Dual Catalysis”  
*Nat. Commun.* **2021**, *12*, Article number: 966.
24. Yoshimi Kato, Luqing Lin,\* Masahiro Kojima, Tatsuhiko Yoshino,\* Shigeki Matsunaga\*  
“Development of Pseudo-C<sub>2</sub>-symmetric Chiral Binaphthyl Monocarboxylic Acids for Enantioselective C(sp<sup>3</sup>)–H Functionalization Reactions under Rh(III) Catalysis”  
*ACS Catal.* **2021**, *11*, 4271-4277.
25. Keitaro Matsuoka, Honoka Obata, Kotaro Nagatsu, Masahiro Kojima, Tatsuhiko Yoshino,\* Mikako Ogawa,\* Shigeki Matsunaga\*  
“Transition-metal-free nucleophilic <sup>211</sup>At-astatination of spirocyclic arylodonium ylides”  
*Org. Biomol. Chem.* **2021**, *19*, 5525-5528.
26. Long-Tao Huang, Yuki Hirata, Yoshimi Kato, Luqing Lin, Masahiro Kojima, Tatsuhiko Yoshino,\* Shigeki Matsunaga\*  
“Ruthenium(II)/Chiral Carboxylic Acid Catalyzed Enantioselective C–H Functionalization of Sulfoximines”  
*Synthesis* **2021**, *53*, DOI: 10.1055/a-1588-0072
27. Jumpei Hirose, Takumi Wakikawa, Shun Satake, Masahiro Kojima, Manabu Hatano, Kazuaki Ishihara, Tatsuhiko Yoshino,\* Shigeki Matsunaga\*  
“Cp\*Rh<sup>III</sup>/Chiral Disulfonate/CuOAc Catalyst System for the Enantioselective Intramolecular Oxyamination of Alkenes”  
*ACS Catal.* **2021**, *11*, 15187-15193.

28. Ryo Tanaka, Yuki Hirata, Masahiro Kojima, Tatsuhiko Yoshino,\* Shigeki Matsunaga\*  
“Cp\*Rh(III)/boron hybrid catalysis for directed C–H addition to  $\beta$ -substituted  $\alpha$ ,  $\beta$ -unsaturated carboxylic acids”  
*Chem. Commun.* **2022**, 58, 76-79.
29. Kentaro Kawai, Kazuki Ikeda, Akane Sato, Akira Kabasawa, Masahiro Kojima, Kenta Kokado, Akira Kakugo, Kazuki Sada, Tatsuhiko Yoshino,\* Shigeki Matsunaga\*  
“1,2-Disubstituted 1,2-Dihydro-1,2,4,5-tetrazine-3,6-dione as a Dynamic Covalent Bonding Unit at Room Temperature”  
*J. Am. Chem. Soc.* **2022**, 144, 1370-1379.
30. Tomoyuki Sekino, Shunta Sato, Tatsuhiko Yoshino, Masahiro Kojima,\* Shigeki Matsunaga\*  
“Regioselective Deaminative Allylation of Aliphatic Amines via Dual Cobalt and Organophotoredox Catalysis”  
*Org. Lett.* **2022**, 24, 2120-2124.
31. Yuto Yamaguchi, Yusuke Seino, Akihiko Suzuki, Yuji Kamei, Tatsuhiko Yoshino, Masahiro Kojima,\* Shigeki Matsunaga\*  
“Intramolecular Hydrogen Atom Transfer Hydroarylation of Alkenes toward  $\delta$ -Lactams Using Cobalt-Photoredox Dual Catalysis”  
*Org. Lett.* **2022**, 24, 2441-2445.

## Accounts and Reviews

1. Masahiro Kojima, Motomu Kanai\*  
“Differences between Metal Catalysts and Organocatalysts” (Japanese Account)  
*CSJ Current Review* **2016**, 22, 30-35.
2. Masahiro Kojima, Shigeki Matsunaga  
“Oxidative Coupling without Oxidant — Creating Molecules while Releasing Hydrogen”  
(Japanese Account)  
*Chemistry* **2019**, 74, 66-67.
3. Masahiro Kojima,\* Shigeki Matsunaga\*  
“The Merger of Photoredox and Cobalt Catalysis”  
*Trends Chem.* **2020**, 2, 410-426.
4. Masahiro Kojima  
“Construction of Aromatic Rings by Cooperative Photoredox and Iron Catalysis” (Japanese Account)  
*Farumashia* **2021**, 57, 146.

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