

CURRICULUM VITAE

Personal

Name: Akira Matsumoto (松本 晃)
Gender: Male
Date of birth: July 10th, 1990
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Education

2016–2019 Ph.D., Graduate School of Engineering, Kyoto University
(Advisor: Prof. Seijiro Matsubara)
2014–2016 M.S. course, Department of Material Chemistry, Graduate School of Engineering,
Kyoto University
(Advisor: Prof. Seijiro Matsubara)
2011–2014 B.S. course, Department of Industrial Chemistry, Faculty of Engineering,
Kyoto University

Research and Professional Experience

2020–present Specially Appointed Assistant Professor
Graduate School of Pharmaceutical Sciences, Kyoto University
(Advisor: Prof. Keiji Maruoka)
2019–2020 Postdoctoral Fellow
Graduate School of Pharmaceutical Sciences, Kyoto University
(Advisor: Prof. Keiji Maruoka)
2017–2019 JSPS Research Fellow
2017, Jul.–Sep. Visiting Scholar at University of California, Berkeley
(Advisor: Prof. F. Dean Toste)
2015, Sep.–Nov. BASF International Internship (Ludwigshafen, Germany)

Awards

2019 The 99th Annual Meeting of the Chemical Society of Japan Presentation Award
2018 The 9th Otsu Academy Award Fellow (No. 144)
2018 The 48th Congress of Heterocyclic Chemistry Heterocycles Award

List of Publications (2023/11/09 updated)

Original Papers

1. Akira Matsumoto, Natsumi Maeda, Keiji Maruoka. “Bidirectional Elongation Strategy Using Ambiphilic Radical Linchpin for Modular Access to 1,4-Dicarbonyls via Sequential Photocatalysis”, *J. Am. Chem. Soc.* **2023**, *145*, 20344.
(Selected as Supplementary Cover Art)
(Highlighted in *Org. Process Res. Dev.* **2023**, *27*, 1827.)
2. Shuji Nagano, Natsumi Maeda, Terumasa Kato, Akira Matsumoto, Keiji Maruoka. “Visible light-promoted alkylation of electron-deficient alkenes with alkylsilyl peroxides”, *Tetrahedron Lett.* **2023**, *122*, 154486.
3. Tagui Nagano, Akira Matsumoto, Ryotaro Yoshizaki, Keisuke Asano, Seijiro Matsubara. “Non-enzymatic catalytic asymmetric cyanation of acylsilanes”, *Commun. Chem.* **2022**, *5*, 45.
4. Weiping Xu, Terumasa Kato, Yan Liu, Akira Matsumoto, Keiji Maruoka. “Fe-Catalyzed Dicarbofunctionalization of Vinylarenes with Alkylsilyl Peroxides and β -Keto Carbonyl Substrates”, *Org. Lett.* **2022**, *24*, 2641–2645.
5. Akira Matsumoto, Masanori Yamamoto, Keiji Maruoka. “Cationic DABCO-Based Catalyst for Site-Selective C–H Alkylation via Photoinduced Hydrogen-Atom Transfer”, *ACS Catal.* **2022**, *12*, 2045–2051.
(Among the most read article in February 2022)
(Highlighted in *Synfacts* **2022**, *18*, 0423)
6. Akira Matsumoto, Yoko Shiozaki, Shunya Sakurai, Keiji Maruoka. “Synthesis of Functionalized Aliphatic Acid Esters via the Generation of Alkyl Radicals from Silylperoxyacetals”, *Chem.–Asian J.* **2021**, *16*, 2431–2434.
(Selected as Very Important Paper)
7. Saori Tsuzuki, Shunya Sakurai, Akira Matsumoto, Taichi Kano, Keiji Maruoka. “Ni-Catalyzed C(sp²)–H alkylation of *N*-quinolylbenzamide using alkylsilyl peroxides as structurally diverse alkyl sources”, *Chem. Commun.* **2021**, *57*, 7942–7945.
8. Akira Matsumoto, Zhe Wang, Keiji Maruoka. “Radical-Mediated Activation of Esters with a Copper/Selectfluor System: Synthesis of Bulky Amides and Peptides”, *J. Org. Chem.*, **2021**, *86*, 5401–5411.

(Highlighted in *Synfacts* **2021**, *17*, 0827)

(Featured in Organic Chemistry Highlights in Organic Chemistry Portal)

9. Akira Matsumoto, Bich-Ngoc Nguyen, Tsubasa Honda, Ryu Sakamoto, Xiao Huang, Shigeyoshi Sakaki, Keiji Maruoka. “Deacylative Carbon–Carbon Bond Cleavage of Ketone Equivalents: Applications to Radical Carbon–Carbon Bond Formation Reactions”, *Chem.–Asian J.* **2021**, *16*, 282–286.
10. Zhe Wang, Akira Matsumoto, Keiji Maruoka. “Efficient cleavage of tertiary amide bonds via radical–polar crossover using a copper(II) bromide/Selectfluor hybrid system”, *Chem. Sci.* **2020**, *11*, 12323–12328.
11. Shunya Sakurai, Akira Matsumoto, Taichi Kano, Keiji Maruoka. “Cu-Catalyzed Enantioselective Alkylarylation of Vinylarenes Enabled by Chiral Binaphthyl–BOX Hybrid Ligands”, *J. Am. Chem. Soc.* **2020**, *142*, 19017–19022.
(Selected as Supplementary Cover Art)
12. Ryuichi Murata, Akira Matsumoto, Keisuke Asano, Seiji Matsubara. “Desymmetrization of *gem*-diols via water-assisted organocatalytic enantio- and diastereoselective cycloetherification”, *Chem. Commun.* **2020**, *56*, 12335–12338.
(Selected as the inside back cover)
(Highlighted in *Synfacts* **2020**, *16*, 1276.)
13. Tomomi Yoshii, Saori Tsuzuki, Shunya Sakurai, Ryu Sakamoto, Julong Jiang, Miho Hatanaka, Akira Matsumoto, Keiji Maruoka. “*N*-Hydroxybenzimidazole as a Structurally Modifiable Platform for *N*-Oxyl Radicals for Direct C–H Functionalization Reactions”, *Chem. Sci.* **2020**, *11*, 5772–5778.
14. Yoko Shiozaki, Shunya Sakurai, Ryu Sakamoto, Akira Matsumoto, Keiji Maruoka. “Iron-Catalyzed Radical Cleavage/C–C Bond Formation of Acetal-Derived Alkylsilyl Peroxides”, *Chem.–Asian J.* **2020**, *15*, 573–576.
15. Yuuki Wada, Akira Matsumoto, Keisuke Asano, Seiji Matsubara. “Enantioselective bromination of axially chiral cyanoarenes in the presence of bifunctional organocatalysts”, *RSC Adv.* **2019**, *9*, 31654–31658.
16. Akira Matsumoto, Keisuke Asano, Seiji Matsubara. “Asymmetric *syn*-1,3-Dioxane Construction via Kinetic Resolution of Secondary Alcohols Using Chiral Phosphoric Acid

Catalysts”, *Asian J. Org. Chem.* **2019**, *8*, 814–818.

17. Akira Matsumoto, Keisuke Asano, Seiji Matsubara. “Organocatalytic Enantio- and Diastereoselective Construction of *syn*-1,3-Diol Motifs via Dynamic Kinetic Resolution of In Situ Generated Chiral Cyanohydrins”, *Org. Lett.* **2019**, *21*, 2688–2692.
18. Akira Matsumoto, Keisuke Asano, Seiji Matsubara. “Kinetic Resolution of Acylsilane Cyanohydrins via Organocatalytic Cycloetherification”, *Chem.–Asian J.* **2019**, *14*, 116–120.
(Selected as the Cover Feature)
(Selected as the top 10% most downloaded paper)
19. Shunsuke Einaru, Kenta Shitamichi, Tagui Nagano, Akira Matsumoto, Keisuke Asano, Seiji Matsubara. “*trans*-Cyclooctenes as Halolactonization Catalysts”, *Angew. Chem., Int. Ed.* **2018**, *57*, 13863–13867.
(Highlighted in *Synfacts* **2018**, *14*, 1198.)
20. Jaime A. S. Coelho, Akira Matsumoto, Manuel Orlandi, Margaret J. Hilton, Matthew S. Sigman, F. Dean Toste. “Enantioselective fluorination of homoallylic alcohols enabled by the tuning of non-covalent interactions”, *Chem. Sci.* **2018**, *9*, 7153–7158.
21. Naoki Yoneda, Yuki Fujii, Akira Matsumoto, Keisuke Asano, Seiji Matsubara. “Organocatalytic enantio- and diastereoselective cycloetherification via dynamic kinetic resolution of chiral cyanohydrins”, *Nat. Commun.* **2017**, *8*, 1397.
(Highlighted in *Synform* **2018**, *3*, A33.)
(Highlighted in Organic Chemistry Highlights in Organic Chemistry Portal)
22. Ryota Miyaji, Yuuki Wada, Akira Matsumoto, Keisuke Asano, Seiji Matsubara. “Bifunctional organocatalysts for the asymmetric synthesis of axially chiral benzamides”, *Beilstein J. Org. Chem.* **2017**, *13*, 1518–1523.
23. Naoki Yoneda, Akira Matsumoto, Keisuke Asano, Seiji Matsubara. “Asymmetric Cycloetherification via the Kinetic Resolution of Alcohols Using Chiral Phosphoric Acid Catalysts”, *Chem. Lett.* **2016**, *45*, 1300–1303.
24. Akira Matsumoto, Keisuke Asano, Seiji Matsubara. “Diastereoselective Reduction of β -(1,3-Dioxan-4-yl)-Ketones”, *Synlett* **2015**, *26*, 1872–1874.
25. Akira Matsumoto, Keisuke Asano, Seiji Matsubara. “A chiral phosphoric acid catalyst for

asymmetric construction of 1,3-dioxanes”, *Chem. Commun.* **2015**, *51*, 11693–11696.

Reviews

1. Akira Matsumoto, Hyo-Jun Lee, Keiji Maruoka. “Development of New Radical-mediated Selective Reactions Promoted by Hypervalent Iodine(III) Reagents”, *Chem. Rec.* **2021**, *21*, 1342–1357.
2. Akira Matsumoto, Keiji Maruoka. “Development of Organosilicon Peroxides as Practical Alkyl Radical Precursors and Their Applications to Transition Metal Catalysis”, *Bull. Chem. Soc. Jpn.* **2021**, *94*, 513–524.
(Selected as Inside Cover)

Others

1. 松本 晃, 丸岡 啓二 「プリビリッジド構造を有する高性能有機分子触媒の創製と応用」, *化学工業*, **2019**, *70*, 1–5.
2. 松本 晃 「位置選択的エピメリ化による希少糖の合成」, *ファルマシア*, **2020**, *56*, 1040. [DOI: 10.14894/faruawpsj.56.11_1040].
3. 松本 晃 「ギ酸塩を原料とする二酸化炭素ラジカルアニオンの発生と光反応への利用」, *有機合成化学協会誌*, **2022**, *80*, 868–869. [DOI: 10.5059/yukigoseikyokaishi.80.868].