

CURRICULUM VITAE

Personal Information

Name: Kounosuke OISAKI (生長 幸之助)
Date of Birth: June 13, 1980(S.55), age 36
Place of Birth: Tokushima, Japan
Gender: Male
Nationality: Japanese
Present Address: Laboratory of Synthetic Organic Chemistry
Graduate School of Pharmaceutical Sciences,
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Language: English and Japanese



Education/Career

2003.3 **B.Sc.**
 Department of Pharmaceutical Sciences
 The University of Tokyo, Japan (Prof. Masakatsu Shibasaki)

2005.3 **M.Sc.**
 Graduate School of Pharmaceutical Sciences
 The University of Tokyo, Japan (Prof. Masakatsu Shibasaki)

2008.3 **Ph.D. (Pharmaceutical Sciences)**
 Graduate School of Pharmaceutical Sciences
 The University of Tokyo, Japan (Prof. Masakatsu Shibasaki)
 JSPS Research Fellow (DC1)

2008.4-2008.5 **Postdoctoral Scholar**
 Graduate School of Pharmaceutical Sciences
 The University of Tokyo, Japan (Prof. Masakatsu Shibasaki)

2008.5-2010.3 **Postdoctoral Scholar (JSPS fellow for research abroad)**
 Department of Chemistry & Biochemistry
 University of California, Los Angeles, USA (Prof. Omar M. Yaghi)

2010.4-2016.9 **Assistant Professor**
 Graduate School of Pharmaceutical Sciences
 The University of Tokyo, Japan (Prof. Motomu Kanai)

2016.10-present **Lecturer**
 Graduate School of Pharmaceutical Sciences
 The University of Tokyo, Japan (Prof. Motomu Kanai)

Synergistic Activity

- 2002-present **Deputy Head, Chem-Station** (Japanese Chemistry Portal Website)
<http://www.chem-station.com/>
- 2015.4-2017.3 **Project Coordinator**, JST, ERATO Kanai Life Science Catalysis Project

Fellowships & Grants (* Principal Investigator)

- *2005.4-2008.3 Research Fellow of the Japan Society for the Promotion of Sciences (DC1) [fellowship]
- *2008.5-2010.3 JSPS Postdoctoral Fellowships for Research Abroad [fellowship]
- *2009.7 JSPS Fellowship for the attendance of 59th Lindau Nobel Laureate Meeting [fellowship & travel expenses grant]
- *2011.4-2013.3 JSPS Grant-in-Aid for Young Scientists (B) # 23790007 [research grant]
- *2013.4-(2017.3) JSPS Scientific Research (C, General) # 25460008 [research grant]
- *2013.8 The Naito Foundation Subsidy for Scientific Symposia and Lecture Meetings [travel expenses grant]
- 2014.11-2016.3 Project for Development of Innovative Research on Cancer Therapeutics [project member]
- 2015.11-(2020.3) AMED Leading Advanced Projects for Medical Innovation (LEAP) [project member]
- *2015.12 薬学振興会 海外派遣研究者等旅費助成 [travel expenses grant]
- *2015.12 The Tokyo Biochemical Research Foundation Research Grant I [research grant]
- *2016.1 The Research Foundation for Pharmaceutical Sciences Research Grant I [research grant]
- *2016.4-(2018.3) MEXT Grant-in-Aid for Scientific Research on Innovative Area #16H01007 [research grant]

Awards

- 2007 Poster Presentation Award (ESOC2007, Ireland)
- 2008 SYNStars Award 2008 (Thieme Chemistry, Germany)
- 2012 Best Poster Presentation Award (ICCOS-2012, Russia)
- 2012 Fuji Film Award in Synthetic Organic Chemistry (SSOCJ, Japan)
- 2013 化学コミュニケーション賞 2012 [団体] (日本化学会, Japan)
- 2014 CSJ Presentation Award 2014 [Academic] (The Chemical Society of Japan, Japan)

Memberships

- Pharmaceutical Society of Japan
- Chemical Society of Japan
- Society of Synthetic Organic Chemistry of Japan
- American Chemical Society
- American MENSA
- Japan Society for Science Visualization
- Japan Society for Chemical Biology

Research Interest

1. Catalytic methodologies for complex organic molecule syntheses
2. Mechanistic analysis of organic/organometallic reactions
3. Ordered materials oriented to catalytic application
4. Bioorthogonal transformations
5. Peptide and protein chemistry
6. Medicinal chemistry of small organic molecules and chemically modified biologics

Experiences & Skills

- ✓ Expertised research experience in the field of synthetic organic chemistry, especially development of new (asymmetric) homogeneous catalysis: design, synthesis, development of (chiral) ligand, catalytic (asymmetric) reactions, mechanistic elucidation, handling of air-/moisture sensitive material, such as transition metal complexes and phosphine compounds.
- ✓ Well-versed in the synthesis, purification and characterization of various kinds of complex organic compounds, including air- and moisture-sensitive metal complexes, phosphorous compounds, and water-soluble peptides and proteins.
 - Solution Fourier-Transfer NMR Spectroscopy: 1D, 2D and multinuclear NMR.
 - Mass Spectrometry: EI, FAB, MALDI-TOF-MS, LC/GC-MS and ESI-MS.
 - Fourier-Transfer Infrared (FT-IR)
 - High Performance Liquid Chromatography (including chiral and reverse-phase HPLC)
 - Size Exclusion Chromatography (SEC)
 - Gas Chromatography (GC)
 - Electron Spin Resonance Spectroscopy (ESR)
 - Handling and maintenance of glove box
 - Sodium dodecyl sulfate-polyacrylamide gel electrophoresis (SDS-PAGE)
 - Circular Dichroism (CD)
 - Single Crystal X-ray Diffractometer (SXRD)
- ✓ Handling, synthesis and characterization of self-organized porous materials, especially Metal-Organic Frameworks (MOFs)
- ✓ Analysis of solid state materials / inorganics by following methods.
 - Powder X-ray Diffractometer (PXRD)
 - Single Crystal X-ray Diffractometer (SXRD)
 - Solid State Cross-Polarized Magic Angle Spinning (CP/MAS) NMR spectroscopy
 - Fourier-Transfer Infrared (FT-IR)
 - Thermogravimetric Analysis (TGA)
 - Elemental microanalysis (EA)
 - Differential scanning calorimetry (DSC)
- ✓ Teaching experience in laboratory classes for undergraduate/graduate students

- ✓ Annual lectures for undergraduate students related to basic organic chemistry
- ✓ Reviewer for scientific papers submitted to *J. Am. Chem. Soc.*; *Org. Lett.*; *J. Org. Chem.*; *Chem. Commun.*; *Bioorg. Med. Chem. Lett.*; *Synlett*; *Synthesis*; *Heterocycles*; *Adv. Synth. Catal.*; *Catal. Sci. Technol.*; *Chem. Pharm. Bull.*; *ACS Catal.*; *Chem. Lett.*; *RSC Adv.*; *Chin. J. Chem.*; *Org. Biomol. Chem.*
- ✓ Outreach activity by development and management of Japanese chemistry portal website, Chem-Station (<http://www.chem-station.com/>) as a deputy head

Citation Metrics (ISI Web of Knowledge, 2017/3)

Total citations	1,419
h-index	16
Average citations per article	41.74 (34 papers)

References

Masakatsu Shibasaki, Ph.D., Professor

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E-mail: mshibasa@bikaken.or.jp

Motomu Kanai, Ph.D., Professor

Graduate School of Pharmaceutical Sciences, The University of Tokyo
7-3-1 Hongo, Bunkyo-ku, Tokyo 113-0033, JAPAN
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Fax: +81-(0)3-5684-5206
E-mail: kanai@mol.f.u-tokyo.ac.jp

Omar M. Yaghi, Ph.D., Professor

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Tel: +1-510-643-3507
Fax: +1-510-486-5846
E-mail: yaghi@berkeley.edu, oyaghi@lbl.gov

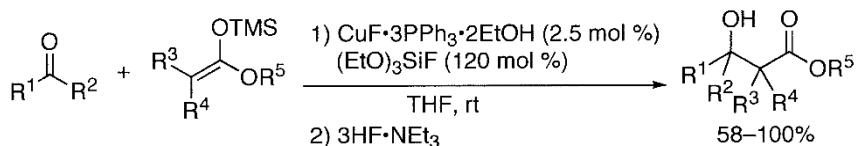
Publication List (*corresponding author)

[Research during PhD course (The University of Tokyo, Shibasaki & Kanai group)]

1) Kounosuke Oisaki, Yutaka Suto, Motomu Kanai, Masakatsu Shibasaki*

“A new method for the catalytic aldol reaction to ketones”

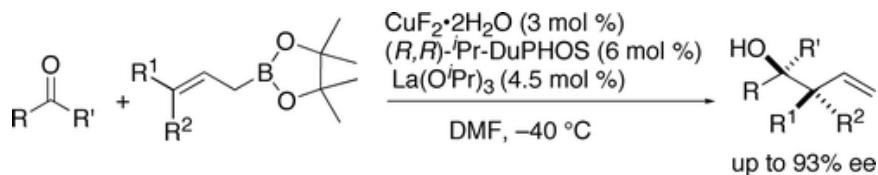
J. Am. Chem. Soc. **2003**, *125*(19), 5644-5645. doi: [10.1021/ja034993n](https://doi.org/10.1021/ja034993n)



2) Reiko Wada, Kounosuke Oisaki, Motomu Kanai*, Masakatsu Shibasaki*

“Catalytic enantioselective allylboration of ketones”

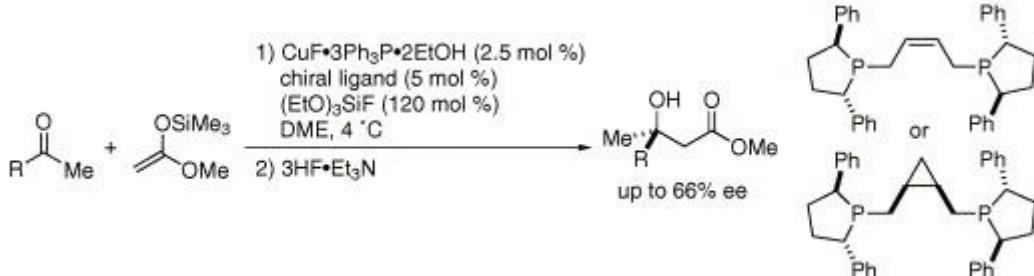
J. Am. Chem. Soc. **2004**, *126*(29), 8910-8911. DOI: [10.1021/ja047200l](https://doi.org/10.1021/ja047200l)



3) Kounosuke Oisaki, Dongbo Zhao, Yutaka Suto, Motomu Kanai*, Masakatsu Shibasaki*

“New chiral bis(diphenylphospholane) ligands: design, synthesis, and application to catalytic enantioselective aldol reaction to ketones”

Tetrahedron Lett. **2005**, *46*(25), 4325-4329. doi: [10.1016/j.tetlet.2005.04.084](https://doi.org/10.1016/j.tetlet.2005.04.084)



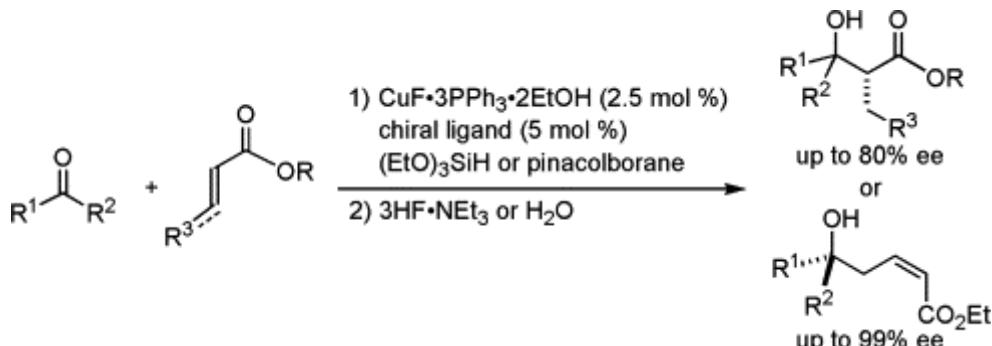
4) Dongbo Zhao, Kounosuke Oisaki, Motomu Kanai*, Masakatsu Shibasaki*

“Catalytic enantioselective intermolecular reductive aldol reaction to ketones”

Tetrahedron Lett. **2006**, *47*(9), 1403-1407. doi: [10.1016/j.tetlet.2005.12.097](https://doi.org/10.1016/j.tetlet.2005.12.097)

<This paper is featured in *SYNFACTS* **2006**, 5, 472.>

<Ranked as No.15 in Top25 Hottest Articles (2006/Jan-Mar) of *Tetrahedron Lett.*>

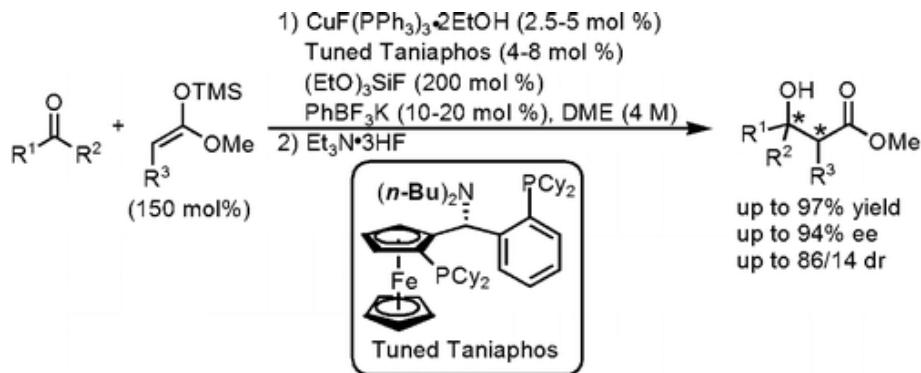


5) Kounosuke Oisaki, Dongbo Zhao, Motomu Kanai*, Masakatsu Shibasaki*

“Catalytic enantioselective aldol reaction to ketones”

J. Am. Chem. Soc. **2006**, *128*(22), 7164-7165. DOI: [10.1021/ja061815w](https://doi.org/10.1021/ja061815w)

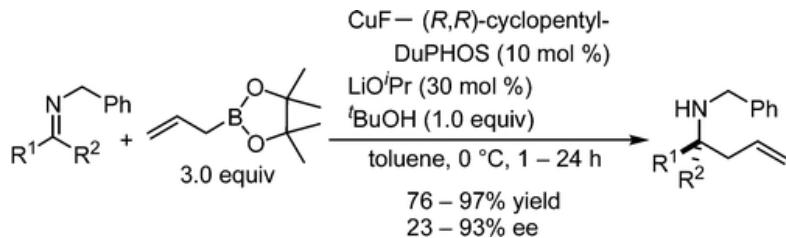
<This paper is featured in *SYNFACTS* **2006**, *9*, 916.>



6) Reiko Wada, Tomoyuki Shibuguchi, Sae Makino, Kounosuke Oisaki, Motomu Kanai*, Masakatsu Shibasaki*

“Catalytic enantioselective allylation of ketoimines”

J. Am. Chem. Soc. **2006**, *128*(23), 7687-7691. DOI: [10.1021/ja061510h](https://doi.org/10.1021/ja061510h)

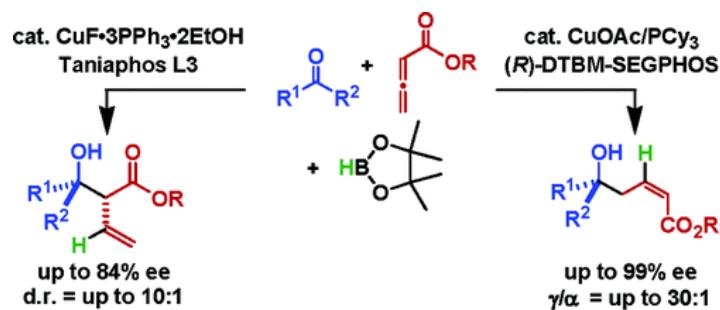


7) Dongbo Zhao, Kounosuke Oisaki, Motomu Kanai*, Masakatsu Shibasaki*

“Dramatic ligand effect on catalytic asymmetric reductive aldol reaction of allenic esters to ketones”

J. Am. Chem. Soc. **2006**, *128*(45), 14440-14441. DOI: [10.1021/ja0652565](https://doi.org/10.1021/ja0652565)

<This paper is featured in *SYNFACTS* **2007**, *2*, 171.>

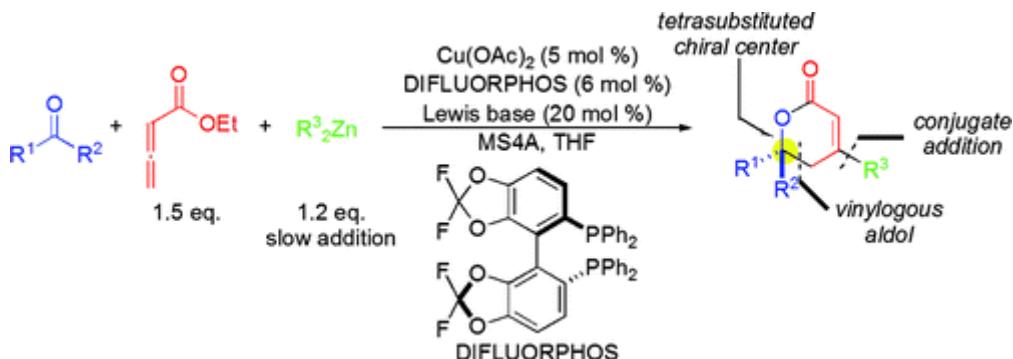


8) Kounosuke Oisaki, Dongbo Zhao, Motomu Kanai*, Masakatsu Shibasaki*

“Catalytic enantioselective alkylative aldol reaction: efficient multicomponent assembly of dialkylzincs, allenic esters, and ketones toward highly functionalized δ -lactones with tetrasubstituted chiral centers”

J. Am. Chem. Soc. **2007**, *129*(23), 7439-7443. DOI: [10.1021/ja071512h](https://doi.org/10.1021/ja071512h)

<This paper is featured in *SYNFACTS* **2007**, 9, 967.>

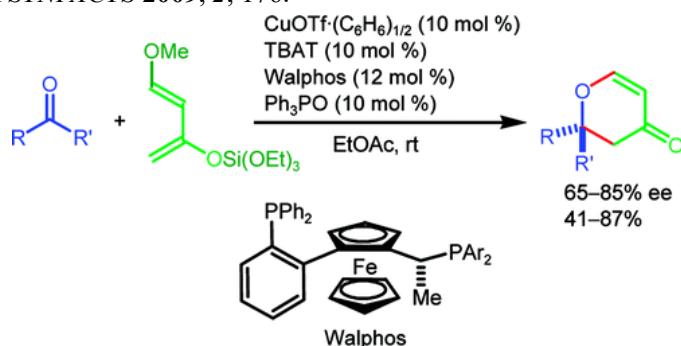


9) I-Hon Chen, Kounosuke Oisaki, Motomu Kanai*, Masakatsu Shibasaki*

“Cu(I)-catalyzed hetero-Diels-Alder reaction between Danishefsky-type siloxy dienes and ketones”

Org. Lett. **2008**, *10*(22), 5151-5154. DOI: [10.1021/o1802134a](https://doi.org/10.1021/o1802134a)

<This paper is featured in *SYNFACTS* **2009**, 2, 176.>

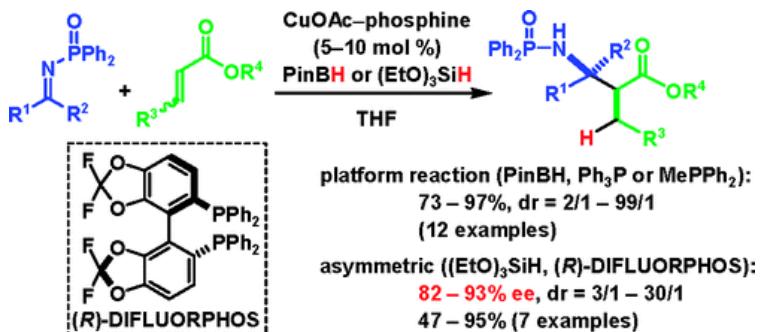


10) Yao Du, Li-Wen Xu, Youhei Shimizu, Kounosuke Oisaki, Motomu Kanai*, Masakatsu Shibasaki*

“Asymmetric reductive Mannich reaction to ketimines catalyzed by a Cu(I) complex”

J. Am. Chem. Soc. **2008**, *130*(48), 16146-16147. DOI: [10.1021/ja8069727](https://doi.org/10.1021/ja8069727)

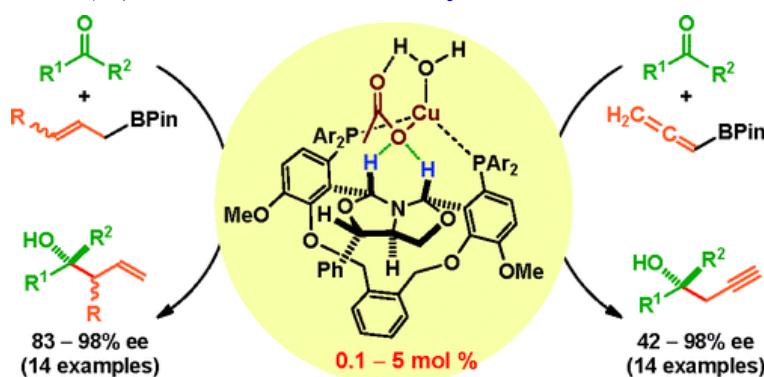
<This paper is featured in *SYNFACTS* **2009**, 2, 177. >



11) Shi-Liang Shi, Li-Wen Xu, Kounosuke Oisaki, Motomu Kanai*, Masakatsu Shibasaki*

"Identification of modular chiral bisphosphines effective for Cu(I)-catalyzed asymmetric allylation and propargylation of ketones"

J. Am. Chem. Soc. **2010**, *132*(19), 6638-6639. DOI: [10.1021/ja101948s](https://doi.org/10.1021/ja101948s)

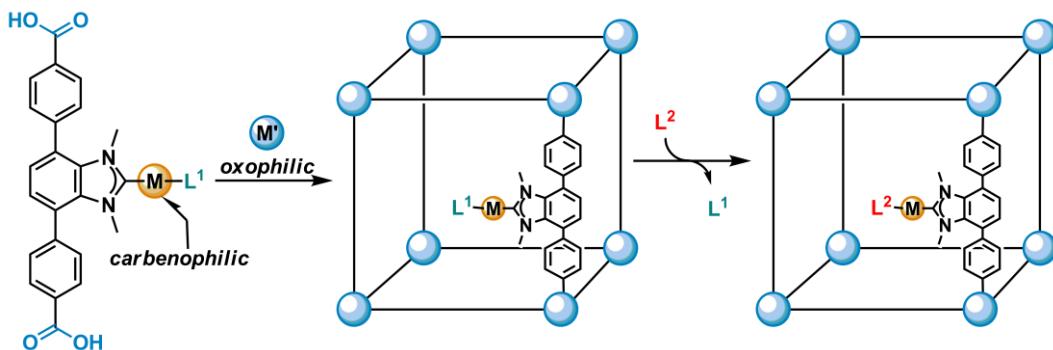


[Research as a postdoctoral researcher (UCLA, Yaghi group)]

12) Kounosuke Oisaki, Qiaowei Li, Hiroyasu Furukawa, Alexander U. Czaja, Omar M. Yaghi*

"A metal-organic framework with covalently bound organometallic complexes"

J. Am. Chem. Soc. **2010**, *132*(27), 9262-9264. DOI: [10.1021/ja103016y](https://doi.org/10.1021/ja103016y)

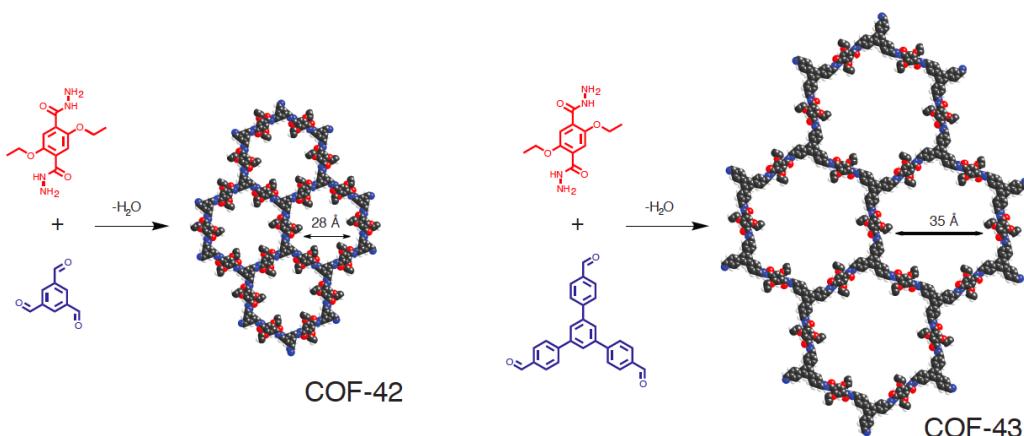


13) Fernando Javier Uribe-Romo, Christian J. Doonan, Hiroyasu Furukawa, Kounosuke Oisaki, Omar M. Yaghi*

"Crystalline covalent organic frameworks with hydrazone linkages"

J. Am. Chem. Soc. **2011**, *133*(30), 11478-11481. DOI: [10.1021/ja204728y](https://doi.org/10.1021/ja204728y)

<Ranked in Most Read Articles (2011/July) of *J. Am. Chem. Soc.*>

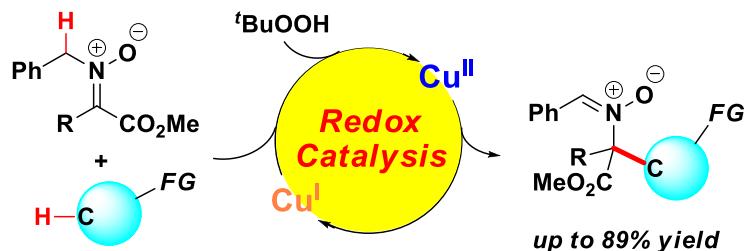


[Research as an assistant professor (The University of Tokyo, Kanai group)]

14) Shogo Hashizume, Kounosuke Oisaki, Motomu Kanai*

“Catalytic migratory oxidative coupling of nitrones”

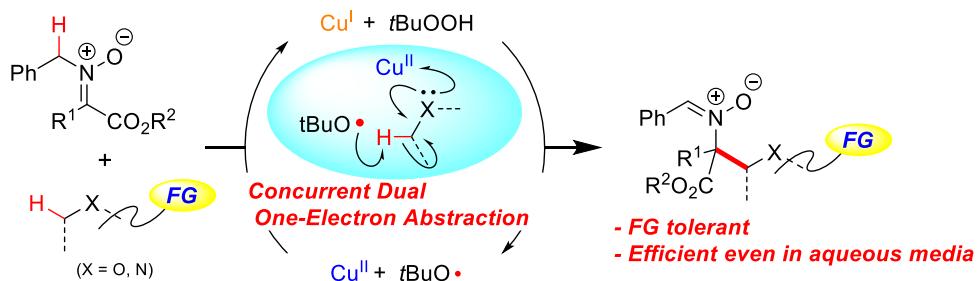
Org. Lett. **2011**, *13*(16), 4288–4291. DOI: [10.1021/ol201629n](https://doi.org/10.1021/ol201629n)



15) Shogo Hashizume, Kounosuke Oisaki, Motomu Kanai*

“Functional group-tolerant catalytic migratory oxidative coupling of nitrones”

Chem. Asian J. **2012**, *7*(11), 2600–2606. DOI: [10.1002/asia.201200359](https://doi.org/10.1002/asia.201200359)



<Selected as the Cover Picture>



16) Toshiaki Sonobe, Kounosuke Oisaki, Motomu Kanai*

“Catalytic aerobic production of imines *en route* to mild, green, and concise derivatization of amines”

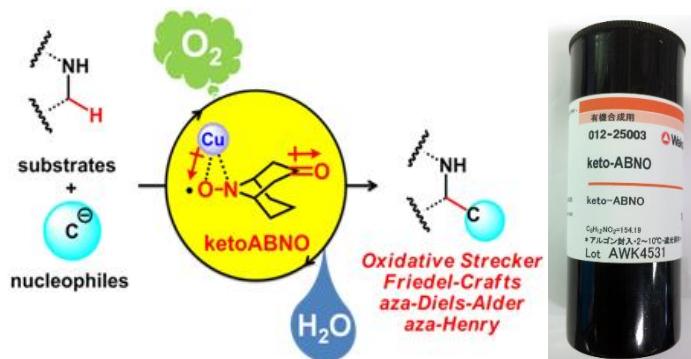
Chem. Sci. **2012**, *3*, 3249–3255. DOI: [10.1039/C2SC20699D](https://doi.org/10.1039/C2SC20699D)

<Ranked in Top-Ten Most Accessed Articles (2012/August) of *Chem. Sci.*>

<Featured in Yakuji Nippo (3/22/2013)>

<**keto-ABNO** is commercialized by [Wako Pure Chemical Industries, Ltd.](#): 016-25001 (100 mg) / 012-25003

(1 g); [Sigma-Aldrich](#): 791815-250MG / 1G; featured in [Wako Chemicals' leaflet](#)>



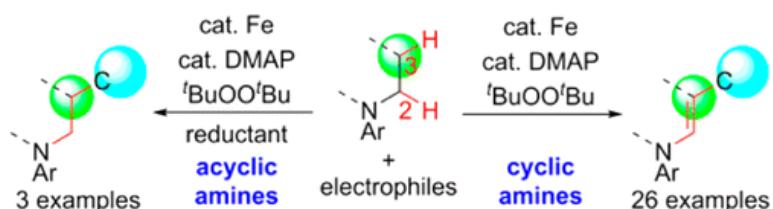
17) Noriaki Takasu, Kounosuke Oisaki, Motomu Kanai*

“Iron-catalyzed oxidative C(3)-H functionalization of amines”

Org. Lett. **2013**, *15*(8), 1918–1921. doi: [10.1021/ol400568u](https://doi.org/10.1021/ol400568u)

<Ranked in Monthly Most Read Articles (2013/April) of *Org. Lett.*>

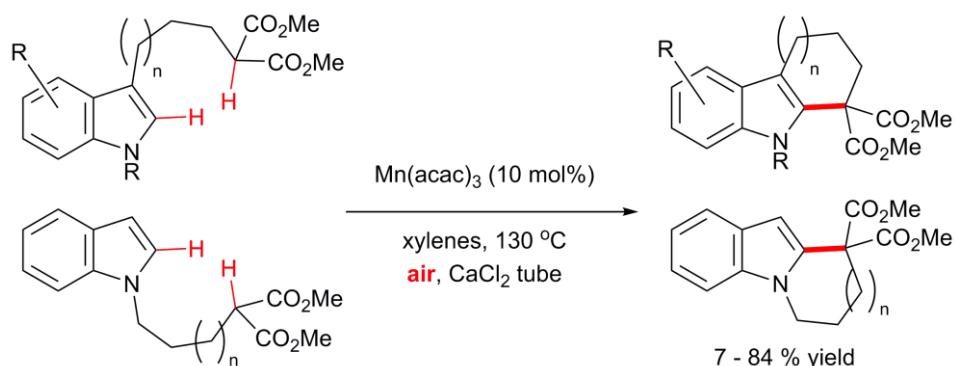
<Featured in [Org. Chem. Highlights 2014](#), March 24, [ChemInform 2013, 44](#)(35)>



18) Kounosuke Oisaki, Junpei Abe, Motomu Kanai*

“Manganese-catalyzed aerobic dehydrogenative cyclization toward ring-fused indole skeletons”

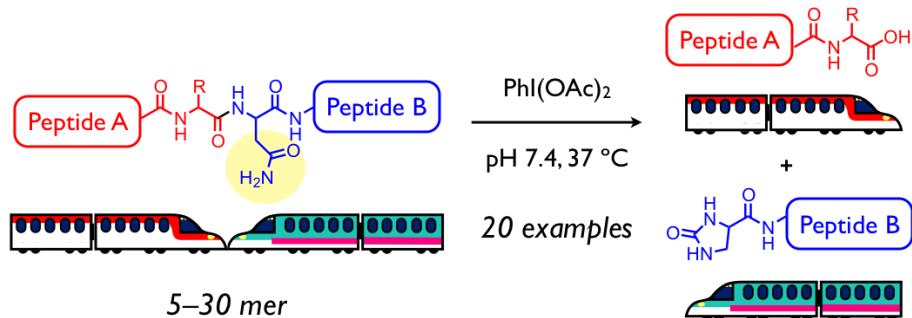
Org. Biomol. Chem. **2013**, *11*(28), 4569–4572. DOI: [10.1039/C3OB40855H](https://doi.org/10.1039/C3OB40855H) (invited article)



19) Kana Tanabe, Atsuhiko Taniguchi, Takuya Matsumoto, Kounosuke Oisaki, Youhei Sohma*, Motomu Kanai*
 “Asparagine-selective cleavage of peptide bonds through hypervalent iodine-mediated Hofmann rearrangement in neutral aqueous solution”

Chem. Sci. **2014**, *5*, 2747-2753. DOI: [10.1039/C3SC53037J](https://doi.org/10.1039/C3SC53037J)

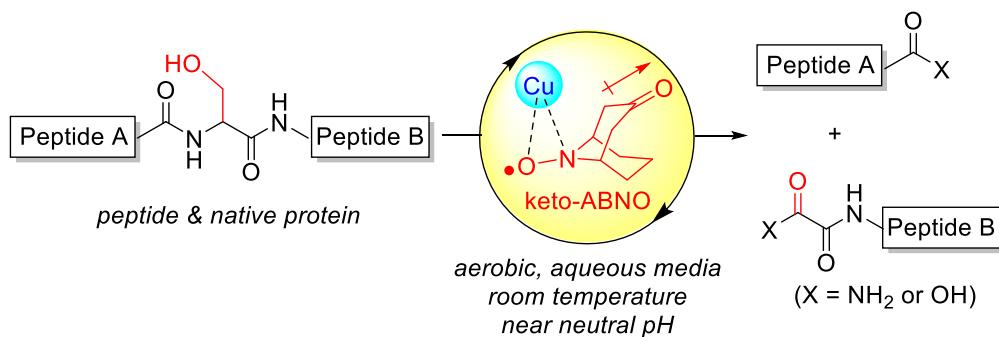
<Ranked in Top-Ten Most Downloaded Articles (2014/March) of *Chem. Sci.*>



20) Yohei Seki, Kana Tanabe, Daisuke Sasaki, Youhei Sohma, Kounosuke Oisaki, Motomu Kanai*
 “Serine-selective aerobic cleavage of peptides and a protein using water-soluble copper-organoradical conjugate”

Angew. Chem. Int. Ed. **2014**, *53*(25), 6501-6505. DOI: [10.1002/anie.201402618](https://doi.org/10.1002/anie.201402618)

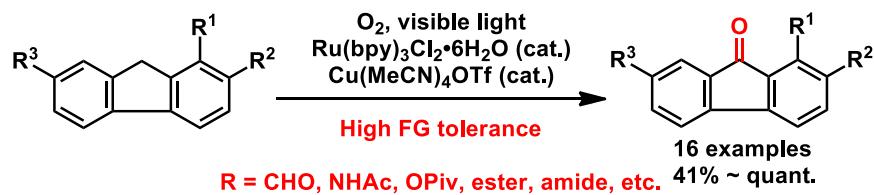
<Highlighted in *Chem-Station Int. Ed., Org. Chem. Highlights* **2015**, March 9.>



21) Masahiro Kojima, Kounosuke Oisaki, Motomu Kanai*

“Chemoselective aerobic photo-oxidation of 9*H*-fluorenes for the synthesis of 9-fluorenones”

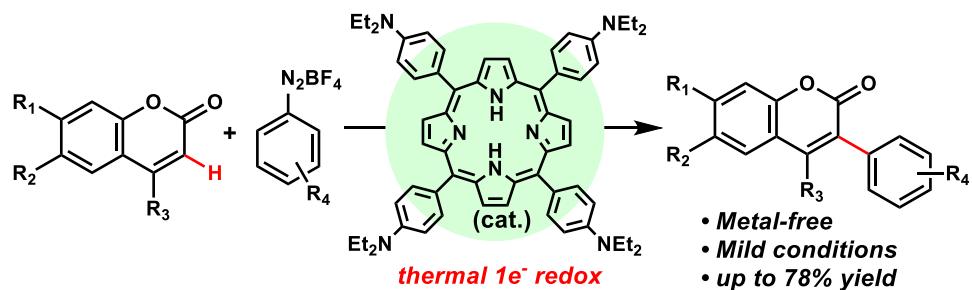
Tetrahedron Lett. **2014**, *55*(34), 4736-4738. DOI: [10.1016/j.tetlet.2014.06.038](https://doi.org/10.1016/j.tetlet.2014.06.038)



22) Masahiro Kojima, Kounosuke Oisaki, Motomu Kanai*

"Metal-free C(3)-H arylation of coumarins promoted by catalytic amounts of 5,10,15,20-tetrakis(4-diethylaminophenyl)porphyrin"

Chem. Commun. **2015**, *51*, 9718-9721. DOI: [10.1039/C5CC02349A](https://doi.org/10.1039/C5CC02349A)



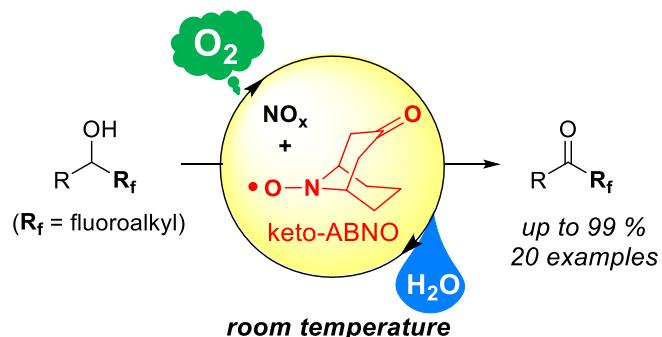
23) Yoichi Kadoh, Masayuki Tashiro, Kounosuke Oisaki, Motomu Kanai*

"Organocatalytic aerobic oxidation of α -fluoroalkyl alcohols to fluoroalkyl ketones at room temperature"

Adv. Synth. Catal. **2015**, *357*(10), 2193-2198. DOI: [10.1002/adsc.201500131](https://doi.org/10.1002/adsc.201500131)

<Invited contribution in honor of Stephen L. Buchwald's 60th birthday.>

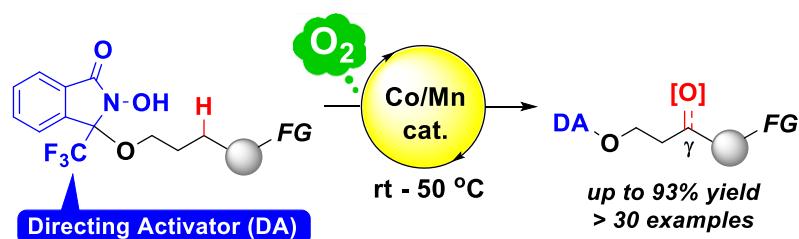
<Ranked in Most Read Articles (2015/July) of *Adv. Synth. Catal.*>



24) Jun Ozawa[†], Masayuki Tashiro[†], Jizhi Ni[†], Kounosuke Oisaki, Motomu Kanai* [[†]equally contributed]

"Chemo- and Regioselective Oxygenation of $C(sp^3)$ -H Bonds in Aliphatic Alcohols Using a Covalently Bound Directing Activator and Atmospheric Oxygen"

Chem. Sci. **2016**, *7*, 1904-1909. DOI: [10.1039/C5SC04476F](https://doi.org/10.1039/C5SC04476F) (Open Access)

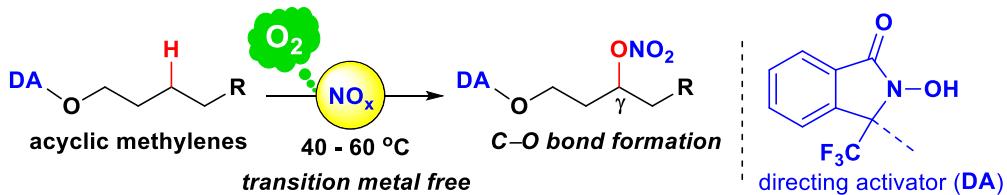


25) Jizhi Ni, Jun Ozawa, Kounosuke Oisaki, Motomu Kanai*

“Directing activator-assisted regio- and oxidation state-selective aerobic oxidation of secondary C(sp^3)–H bonds in aliphatic alcohols”

Org. Biomol. Chem. **2016**, *14*, 4378–4381. DOI: [10.1039/c6ob00678g](https://doi.org/10.1039/c6ob00678g)

<Selected as ‘Hot Articles’ in *Org. Biomol. Chem.*>

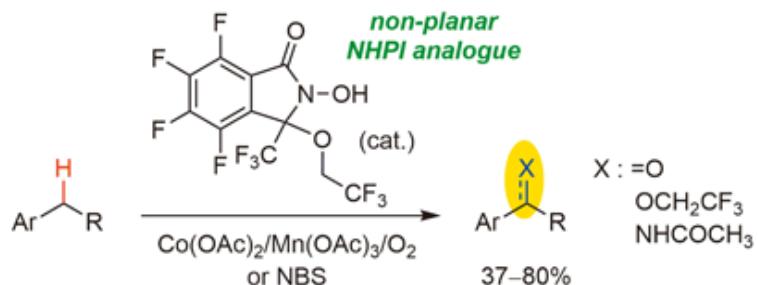


26) Yoichi Kadoh, Kounosuke Oisaki, Motomu Kanai*

“Enhanced structural variety of nonplanar N-oxyl radical catalysts and their application to the aerobic oxidation of benzylic C–H bonds”

Chem. Pharm. Bull. **2016**, *64*, 737–753. DOI: [10.1248/cpb.c16-00083](https://doi.org/10.1248/cpb.c16-00083)

<Invited contribution in honor of Nobel Prize laureate, Prof. Satoshi Ōmura>

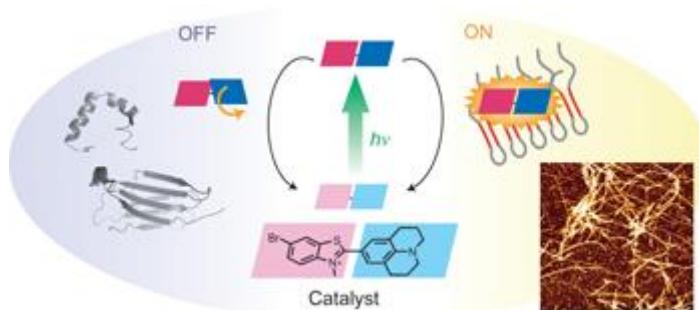


27) Atsuhiro Taniguchi, Yusuke Shimizu, Kounosuke Oisaki, Youhei Sohma*, Motomu Kanai*

“Switchable photooxygenation catalysts that sense higher-order amyloid structures”

Nat. Chem. **2016**, *8*, 974–982. doi:[10.1038/nchem.2550](https://doi.org/10.1038/nchem.2550)

<Highlighted by [JST press release](#), [認知症ねっと](#), 薬事日報(2016/7/11), [Chem-Station](#)>

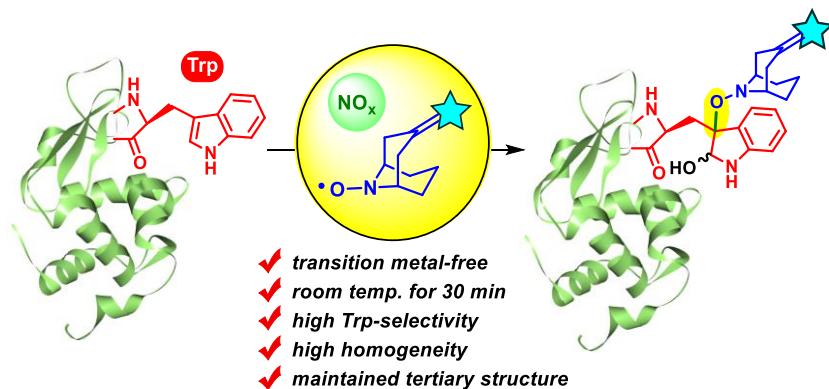


28) Yohei Seki, Takashi Ishiyama, Daisuke Sasaki, Junpei Abe, Youhei Sohma, Kounosuke Oisaki, Motomu Kanai*

“Transition metal-free tryptophan-selective bioconjugation of proteins”

J. Am. Chem. Soc. **2016**, *138*(34), 10798–10801. doi:[10.1021/jacs.6b06692](https://doi.org/10.1021/jacs.6b06692)

<Highlighted by [UT press release](#), [Department News](#), [QLifePro](#), [Chem-Station](#), [科学新聞](#)(2016/8/26)>

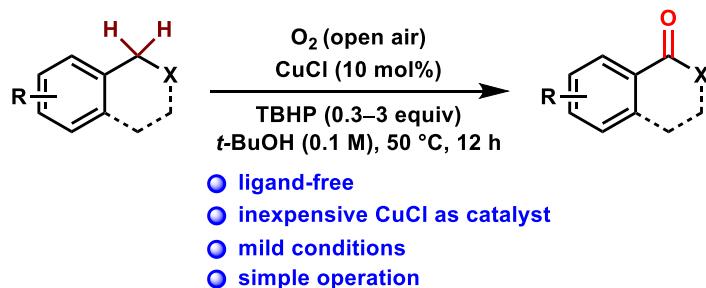


29) Hirotaka Tanaka, Kounosuke Oisaki, Motomu Kanai*

“Ligand-free, copper-catalyzed aerobic benzylic sp^3 C-H oxygenation”

Synlett **2017**, *28*, available online. DOI: [10.1055/s-0036-1588969](https://doi.org/10.1055/s-0036-1588969)

<Invited contribution to “Aerobic Oxidation” cluster>



30) Hirotaka Tajiri, Takehito Uruno, Takahiro Shirai, Daisuke Takaya, Kounosuke Oisaki, Shigeki Matsunaga, Daiki Setoyama, Mayuki Watanabe, Miho Ushijima, Fumiaki Sanematsu, Mutsumi Kukimoto-Niino, Teruki Honma, Eiji Oki, Senji Shiarasawa, Yoshihiko Maehara, Dongchon Kang, Jean-François Côté, Shigeyuki Yokoyama, Motomu Kanai, Yoshinori Fukui*

“Targeting Cancer Cell Invasion and Metabolism by the Selective Inhibitor of the Rac Activator DOCK1”

Cell Reports **2017**, *in press*.

31) Takuya Matsumoto, Ryo Hirano, Kounosuke Oisaki, Motomu Kanai*

Manuscript in preparation.

Accounts, Reviews, Books, Essays

1) 柴崎正勝*、金井求、生長幸之助

「四置換炭素の触媒的不斉構築法の開発と展開」

科学と工業、2007年7月号、314-321頁 (Japanese Account)

2) 生長幸之助

「異質で多様な研究環境で過ごす意義—米国 UCLA Yaghi 研究室」

現代化学、2010年8月号、57-61頁 (Japanese Essay)

3) 山口潤一郎、生長幸之助*

「院試で学ぶ有機化学の基礎—重要化合物、最新研究にリンク」

現代化学、2011年4月～2012年3月(全12回/隔月交互連載、Japanese Essay)

4) 生長幸之助

「硫黄イリドの新しい調製法」

アルマシア、2011年5月号、437-438頁 (Japanese Account)

5) Shogo Hashizume, Kounosuke Oisaki, Motomu Kanai*

“Catalytic Migratory Oxidative Coupling of Nitrones through an Outer-Sphere C(sp^3)-H Activation Process”

The Chemical Record, 2011, 11(5), 236-241. DOI: [10.1002/tcr.201100024](https://doi.org/10.1002/tcr.201100024) (Research Account for MBLA Special Issue)

6) 生長幸之助

「二酸化炭素をメタノールに！カスケード触媒戦略が可能にした高難度反応」

化学、2012年9月号、63-64頁 (Japanese Account)

7) 金井求*、松永茂樹、生長幸之助、清水洋平

「金属触媒固有の特性を活かした炭素-炭素結合形成反応を目指して:塩基触媒からレドックス活性触媒へ」

有機合成化学協会誌, 2013, 71(5), 433-442. DOI: [10.5059/yukigoseikyokaishi.71.433](https://doi.org/10.5059/yukigoseikyokaishi.71.433) (Japanese Account)

8) 生長幸之助

「「ブログ」は合成化学研究をどう変えるか」

有機合成化学協会誌, 2014, 72(1), 74-78. DOI: [10.5059/yukigoseikyokaishi.72.74](https://doi.org/10.5059/yukigoseikyokaishi.72.74) (Japanese Essay)

9) 生長幸之助、園部敏亮、金井求*

「アミンの穏和な酸素酸化反応および環境調和型酸化カップリングを進行させる銅/keto-ABNO触媒系」

和光純薬時報, 2014, 82(2), 2-5. (Japanese Account) [\[PDF\]](#)

10) Yohei Seki, Kounosuke Oisaki, Motomu Kanai*

“Chemoselective Aerobic Oxidation Catalyzed by a Metal/Stable Organoradical Redox Conjugate”

Tetrahedron Lett. 2014, 55(28), 3738-3746. DOI: [10.1016/j.tetlet.2014.05.085](https://doi.org/10.1016/j.tetlet.2014.05.085) (Review, Open Access)

11) Atsuhiko Taniguchi, Yusuke Shimizu, Kounosuke Oisaki, Youhei Sohma*, Motomu Kanai*

“Amyloid-selective oxygenation by photo-catalyst”

Peptide Science 2014, 51, 69-70.

12) Takayuki Wakaki, Kounosuke Oisaki, Motomu Kanai*

“Elementary and systemic views of the generation of toxic substances”

Green Chem. 2016, 18, 3681-3683. doi:[10.1039/C6GC90058E](https://doi.org/10.1039/C6GC90058E)

13) 生長幸之助

「2016年ノーベル化学賞『分子機械の設計と合成』」

じつきよう理科資料 81号 (2017年4月1日発行)(Japanese Account) [\[PDF\]](#)

Invited Lecture/Presentation

- 1) "Development of Metal-Organic Frameworks with Transition Metal Complexes Oriented to Heterogeneous Catalysis"
東京大学(金井求教授), 東京, 2010年7月23日
- 2) "有機-無機の両面から触媒設計の合理を探る"
藤田研コロキウム, 東京大学(藤田誠教授), 東京, 2010年9月10日
- 3) "医薬合成の革新を目指して: sp^3 炭素を標的とした触媒的脱水素クロスカッピング反応の開発"
東京医科歯科大学(細谷孝充教授・吉田優助教), 東京, 2012年11月2日
- 4) "医薬合成の革新を目指して: sp^3 炭素を標的とした触媒的脱水素クロスカッピング反応の開発"
学習院大学(秋山隆彦教授・森啓二助教), 東京, 2013年7月4日
- 5) "Chemistry on the Web—Chem-Station と歩んだ 10 年"
有機化学美術館交流会(佐藤健太郎), 東京, 2013年9月21日
- 6) "ケムステ出張版! 広がる化学の世界" by 化学ポータルサイト Chem-Station
サイエンスアゴラ 2013 [Aa-089], 日本科学未来館, 東京, 2013年11月9日-10日
- 7) "Radical-Conjugated Redox Catalysis: the Powerful Chemosselectivity and Reactivity"
Stony Brook University (Prof. Iwao Ojima), New York, USA; July 2, 2014
- 8) “有機ラジカルの精密設計が拓く新規選択的酸化反応”
有機分子触媒若手セミナー, 玄海プリンスホテル, 福岡, 2014年9月6日-7日
- 9) "ケムステ出張版! 広がる化学の世界" by 化学ポータルサイト Chem-Station
サイエンスアゴラ 2014 [A-038], 日本科学未来館, 東京, 2014年11月8日-9日
- 10) "ラジカル共役型レドックス触媒が拓く新規選択的酸化反応"
南方研若手研究セミナー, 大阪大学(南方聖司教授・武田洋平准教授), 大阪, 2015年6月6日
- 11) "ケムステ出張版! 広がる化学の世界" by 化学ポータルサイト Chem-Station
サイエンスアゴラ 2015 [Aa-013], 日本科学未来館, 東京, 2015年11月14日-15日
- 12) “Chemosselective Oxidative Transformations by Novel Organoradicals”
Westfälische Wilhelms-Universität Münster (Profs. Ulrich Hennecke & Armido Studer), Münster, GERMANY;
July 19, 2016
- 13) “Chemosselective Oxidative Transformations by Novel Organoradicals”
Universität Freiburg (Prof. Bernhard Breit), Freiburg, GERMANY; July 22, 2016
- 14) “Development of Chemosselective Protein Modifications Using Organoradicals”
精密制御反応場 第1回国際若手セミナー, みおの山荘, 大阪, 2016年11月11日-12日
- 15) “有機ラジカルを用いた化学選択的タンパク質変換法の開発”
若手研究者のための有機化学札幌セミナー, 北海道大学, 札幌, 2016年11月29日
- 16) “有機ラジカルを用いた化学選択的タンパク質変換法の開発”
第9回有機触媒シンポジウム, 名古屋大学, 名古屋, 2016年12月1日-2日

- 17) “有機ラジカルを用いた化学選択的タンパク質変換法の開発”
2nd Joint Workshop on Chirality in Chiba University and Soft Molecule Activation, 千葉大学, 千葉, 2016 年
12 月 19 日
- 18) “Development of Chemoselective Protein Modifications Using Organoradicals”
第 23 回ペプチドフォーラム, 東京大学, 東京, 2017 年 1 月 18 日
- 19) “ラジカル共役型レドックス触媒が拓く新規選択的酸化反応”
2016 年度 第 2 回 有機金属若手研究者の会, 東京理科大学, 東京, 2017 年 3 月 15 日
- 20) “Title”
九州大学(星野友准教授), 福岡, 2017 年 6 月 2 日
- 21) “Title”
National University of Singapore (Prof. Shaozhong Ge), Singapore, SINGAPORE, June 5, 2017
- 22) “Title”
Nanyang Technological University (Prof. Rei Kinjo), Singapore, SINGAPORE, June 6, 2017

Presentations in International/Foreign Conferences (○: Presenter)

- 1) ○Kounosuke Oisaki, Yutaka Suto, Motomu Kanai, Masakatsu Shibasaki
“Catalytic Asymmetric Aldol Reaction to Ketones”
The 4th International Forum on Chemistry of Functional Organic Chemicals (IFOC-4) [P-56: Poster presentation]
The University of Tokyo, Tokyo, JAPAN; November 16-17, 2003
- 2) ○Kounosuke Oisaki, Yutaka Suto, Motomu Kanai, Masakatsu Shibasaki
”Catalytic Asymmetric Aldol Reaction to Ketones”
15th International Conference of Organic Synthesis (ICOS-15) [5-C-23: Poster presentation with short talk]
Nagoya Congress Center, Nagoya, JAPAN; August 1-6, 2004
- 3) ○Reiko Wada, Kounosuke Oisaki, Motomu Kanai, Masakatsu Shibasaki
“Catalytic Enantioselective Allylboration of Ketones”
12th International Conference on Boron Chemistry [P-01: Poster presentation with short talk]
Sendai International Center, Sendai, JAPAN; September 12, 2005
- 4) ○Kounosuke Oisaki, Dongbo Zhao, Yutaka Suto, Motomu Kanai, Masakatsu Shibasaki
“CuF-catalyzed Enantioselective Aldol Reaction to Ketones”
The 5th International Forum on Chemistry of Functional Organic Chemicals (IFOC-5) [P-93: Poster presentation]
The University of Tokyo, Tokyo, JAPAN; November 16-17, 2006
- 5) ○Motomu Kanai, Dongbo Zhao, Kounosuke Oisaki, Masakatsu Shibasaki,
“Catalytic Asymmetric Reductive Aldol Reaction of Allenic Esters to Ketones”
The 5th International Forum on Chemistry of Functional Organic Chemicals (IFOC-5) [P-41: Poster presentation]
The University of Tokyo, Tokyo, JAPAN; November 16-17, 2006
- 6) ○Tomoyuki Shibuguchi, Reiko Wada, Sae Makino, Kounosuke Oisaki, Motomu Kanai, Masakatsu Shibasaki

”Catalytic Asymmetric Allylation of Ketoimines”

International Molecular Chirality Conference in Toyama [PP-35: Poster presentation]

Toyama International Conference Center, Toyama, JAPAN; May 18-19, 2006

7) ○Dongbo Zhao, Kounosuke Oisaki, Motomu Kanai, Masakatsu Shibasaki

“Catalytic Enantioselective Intermolecular Aldol Reaction to Ketones”

7th Tetrahedron Symposium [P123: Poster presentation]

Kyoto Research Park, Kyoto, JAPAN; May 25-26, 2006

8) ○Kounosuke Oisaki, Dongbo Zhao, Motomu Kanai, Masakatsu Shibasaki

“Catalytic Asymmetric Multicomponent Reductive/Alkylative Aldol Reactions with Allenic Esters and Unactivated Ketones”

15th European Symposium on Organic Chemistry (ESOC 2007) [P231: Poster presentation]

University of College Dublin, Dublin, IRELAND; July 8-13, 2007

<ESOC2007 Poster Presentation Award was received.>

9) Attendance to the 59th Lindau Meeting of Nobel Laureates, dedicated to Chemistry

Inselhalle in Lindau Island, Lindau, GERMANY; June 28 – July 3, 2009

10) ○Kounosuke Oisaki, Bo Wang, Alexander U. Czaja, Zheng Lu, Omar M. Yaghi

“Unexpected carbon-carbon bond-forming reactions catalyzed by metal-organic frameworks”

239th ACS National Meeting [INOR-811: Poster presentation]

Moscone Center, San Francisco, CA, USA; March 21-25, 2010

11) ○Shogo Hashizume, Kounosuke Oisaki, Motomu Kanai

“Catalytic Migratory Oxidative Coupling of Nitrones”

The 2nd International Symposium on Process Chemistry (ISPC 2011) [1P-09: Poster presentation]

Kyoto International Conference Center, Kyoto, JAPAN; August 10-12, 2011

12) ○Shogo Hashizume, Kounosuke Oisaki, Motomu Kanai

“Catalytic Migratory Oxidative Coupling of Nitrones”

8th AFMC International Medicinal Chemistry Symposium (AIMECS11) [L-A10: Oral presentation]

Keio Plaza Hotel Tokyo, Tokyo, JAPAN; November 29 – December 2, 2011

13) ○Kounosuke Oisaki, Shogo Hashizume, Motomu Kanai

“Catalytic Migratory Oxidative Coupling of Nitrones”

The 6th International Conference on Cutting-Edge Organic Chemistry in Asia / The 2nd New Phase International Conference on Cutting-Edge Organic Chemistry in Asia (ICCEOCA-6/ NICCEOCA-2) [PA-44: Poster presentation]

The Chinese University of Hong Kong, Hong Kong, CHINA; December 11–15, 2011

14) ○Kounosuke Oisaki, Shogo Hashizume, Motomu Kanai

“Catalytic Migratory Oxidative Coupling of Nitrones”

13th Annual Florida Heterocyclic and Synthetic IUPAC-Sponsored Conference (FLOHET13) [P09: Poster presentation]

University of Florida, Gainesville, FL, USA ; March 4–7, 2012

15) ○Kounosuke Oisaki, Toshiaki Sonobe, Motomu Kanai

“Catalytic Aerobic Production of Imines en Route to Mild, Green and Concise Derivatizations of Amines”

International Conference “Catalysis in Organic Synthesis” (ICCOS-2012) [P195: Poster presentation], Zelinsky Institute of Organic Chemistry, Moscow, RUSSIA; September 15-20, 2012

Post-Conference Symposium “Frontiers of Organometallic Chemistry” (FOC-2012) [P57: Poster presentation], St. Petersburg State University, St. Petersburg, RUSSIA; September 21–22, 2012

<ICCOS-2012 Best Poster Award was received.>

16) ○Toshiaki Sonobe, Yohei Seki, Kounosuke Oisaki, Motomu Kanai

“Catalytic Aerobic Production of Imines en Route to Mild, Green and Concise Derivatizations of Amines”

The 7th International Forum on Chemistry of Functional Organic Chemicals (IFOC-7) [P-25: Poster presentation] The University of Tokyo, Tokyo, JAPAN; November 18-19, 2012.

17) ○Noriaki Takasu, Masahiro Kojima, Kounosuke Oisaki, Motomu Kanai

“Fe-Catalyzed Oxidative C(3)-Functionalization of Amines”

The 7th International Forum on Chemistry of Functional Organic Chemicals (IFOC-7) [P-28: Poster presentation] The University of Tokyo, Tokyo, JAPAN; November 18-19, 2012.

18) ○Toshiaki Sonobe, Youhei Seki, Kounosuke Oisaki, Motomu Kanai

“Catalytic Aerobic Derivatization of Amines Oriented to Concise Synthesis of Medicinal Building Blocks”

The 5th Global COE Retreat in Oiso [Oral presentation]

Prince Hotel Oiso, Kanagawa, JAPAN; January 19-20, 2013.

19) ○Junpei Abe, Kounosuke Oisaki, Motomu Kanai

“Development of Catalytic Dehydrogenative Cyclization Reaction toward Rapid Construction of Ring-Fused Indole Skeleton”

The 23rd French-Japanese Symposium on Medicinal and Fine Chemistry [P-63: Poster presentation]

Crowne Plaza ANA Nagasaki Gloverhill, Nagasaki, JAPAN; May 12-15, 2013.

20) ○Kounosuke Oisaki, Noriaki Takasu, Motomu Kanai

“Fe-Catalyzed Oxidative C(3)-Functionalization of Amines”

Frontiers in Chemistry Armenia (ArmChemFront2013) [C12: Oral presentation]

Ani Plaza Hotel, Yerevan, ARMENIA; August 25-29, 2013.

21) ○Kana Tanabe, Atsuhiko Taniguchi, Takuya Matsumoto, Kounosuke Oisaki, Youhei Sohma, Motomu Kanai

“Aspartate-Selective Cleavage of Peptide Bonds by Hypervalent Iodine”

4th Asia-Pacific International Peptide Symposium (APIPS 2013)/50th Japanese Peptide Symposium [P-041: Poster presentation]

Hotel Hankyu Expo Park, Osaka, JAPAN; November 6-8, 2013.

22) ○Shogo Hashizume, Kounosuke Oisaki, Motomu Kanai

“A Catalytic Oxidation of Benzylic C(sp³)-H Bonds Utilizing Molecular Oxygen”

The French-American Chemical Society 15th Meeting (FACS XV) [Poster presentation]

Avignon Grand Hotel, Avignon, FRANCE; June 1-5, 2014.

23) ○Toshiaki Sonobe, Kounosuke Oisaki, Motomu Kanai

“Room Temperature-Catalytic β-C-H Functionalization of Amines”

The French-American Chemical Society 15th Meeting (FACS XV) [Poster presentation]

Avignon Grand Hotel, Avignon, FRANCE; June 1-5, 2014.

24) ○Jizhi Ni, Jun Ozawa, Masayuki Tashiro, Kounosuke Oisaki, Motomu Kanai

"O₂/NO_x-Promoted Site- and Oxidation State-Selective C(sp³)-H Oxidation"

The International Conference on Hydrogen Atom Transfer (iCHAT 2014) [Poster presentation]

Villa Mondragone, Monteporzio Catone, ITALY; June 22-26 2014.

- 25) ○ Kounosuke Oisaki, Yohei Seki, Kana Tanabe, Daisuke Sasaki, Youhei Sohma, Motomu Kanai
"Serine-Selective Aerobic Cleavage of Peptides and a Protein Using Water-Soluble Copper-Organoradical Conjugate"

19th International Symposium on Homogeneous Catalysis (ISHC-IXX) [110: Poster presentation]
Ottawa Convention Centre, Ottawa, CANADA; July 6-11, 2014.

- 26) Masahiro Kojima, Kounosuke Oisaki, ○ Motomu Kanai
"Synthesis of 9-fluorenones via selective photo-oxidation of 9H-fluorenes"
XXVI International Conference on Organometallic Chemistry (ICOMC2014) [1P094: Poster presentation]
Royton Sapporo Hotel, Sapporo, JAPAN; July 13-18, 2014.

- 27) ○ Masayuki Tashiro, Jun Ozawa, Jizhi Ni, Kounosuke Oisaki, Motomu Kanai
"Regioselective Aerobic Oxygenation of sp³ C-H Bonds of Alcohols Using N-Oxyl Radical Directing Activator"
2nd International Conference & 7th Symposium on Organocatalysis [PS8: Poster presentation]
The University of Tokyo, Tokyo, JAPAN; November 21-22, 2014.

- 28) ○ Yusuke Shimizu, Atsuhiko Taniguchi, Kounosuke Oisaki, Youhei Sohma, Motomu Kanai
"Development of amyloid β-selective photooxygenation catalyst toward treatment of Alzheimer disease"
2nd International Conference & 7th Symposium on Organocatalysis [PS1: Poster presentation]
The University of Tokyo, Tokyo, JAPAN; November 21-22, 2014.

- 29) ○ Kounosuke Oisaki, Yohei Seki, Kana Tanabe, Daisuke Sasaki, Youhei Sohma, Motomu Kanai
"Serine-Selective Aerobic Cleavage of Peptides and a Protein Using Water-Soluble Copper-Organoradical Conjugate"
The 9th International Conference on Cutting-Edge Organic Chemistry in Asia / The 5th New Phase International Conference on Cutting-Edge Organic Chemistry in Asia (ICCEOCA-9/ NICCEOCA-5) [PD-20: Poster presentation]
Eastin Hotel Petaling Jaya, Selangor, MALAYSIA; December 1-4, 2014.

- 30) ○ Masahiro Kojima, Kounosuke Oisaki, Motomu Kanai
"Metal-free C(3)-H arylation of coumarins promoted by catalytic amounts of 5,10,15,20-tetrakis(4-diethylaminophenyl)porphyrin"
The 3rd International Symposium on Process Chemistry (ISPC2015) [2P-17: Poster presentation]
Kyoto International Conference Center, Kyoto, JAPAN; July 13-15, 2015.

- 31) ○ Youhei Sohma, Atsuhiko Taniguchi, Yusuke Shimizu, Jizhi Ni, Kounosuke Oisaki, Motomu Kanai
"Biocompatible Photooxygenation Catalyst that Targets Amyloid Aggregation"
The 7th International Peptide Symposium [Oral Presentation]
Singapore, SINGAPORE; December 9-11, 2015.

- 32) ○ Kounosuke Oisaki, Jun Ozawa, Jizhi Ni, Masayuki Tashiro, Motomu Kanai
"Chemo- and Site-selective Aerobic Oxygenation of sp³ C-H Bonds of Alcohols Using N-Oxyl Radical Directing Activator"
The International Chemical Congress of Pacific Basin Societies (Pacificchem2015) [ORGN 2480: Poster

[Presentation]

Hawaii Convention Center, Honolulu, HI, USA; December 15-20, 2015.

- 33) ○ Yohei Seki, Kana Tanabe, Daisuke Sasaki, Youhei Sohma, Kounosuke Oisaki, Motomu Kanai
“Serine-Selective Aerobic Cleavage of Peptides and a Protein Using Water-Soluble Copper-Organoradical Conjugate”

17th Tetrahedron Symposium [Poster presentation]

Sitge, SPAIN; June 28-July 1, 2016.

<Best Student Poster Award was received.>

- 34) ○ Kounosuke Oisaki, Jizhi Ni, Jun Ozawa, Masayuki Tashiro, Motomu Kanai
"Directing activator-assisted regio- and oxidation state-selective aerobic oxidation of secondary C(*sp*³)-H bonds in aliphatic alcohols"

The 15th Belgian Organic Synthesis Symposium (BOSS XV) [P237: Poster Presentation]

University of Antwerp, Antwerp, BELGIUM; July 10-15, 2016.

- 35) ○ Atsuhiko Taniguchi, Jizhi Ni, Yusuke Shimizu, Shuta Ozawa, Yukiko Hori, Taisuke Tomita, Kounosuke Oisaki, Yoichiro Kuninobu, Youhei Sohma, Motomu Kanai
“Amyloid-selective catalytic photooxygenation with long-wavelength light irradiation”

Peptide and Protein Society in Singapore Symposium [No.1: Oral Presentation]

Nanyang Technological University, Singapore, SINGAPORE, December 8-9, 2016.

- 36) ○ Kounosuke Oisaki, Yohei Seki, Takashi Ishiyama, Daisuke Sasaki, Junpei Abe, Youhei Sohma, Motomu Kanai
“Transition Metal-Free, Tryptophan-Selective Bioconjugation of Proteins”

3rd International Symposium for Medicinal Sciences [26G-ISMS10: Invited Poster Presentation]

Sendai International Center, Sendai, JAPAN; March 26, 2017.

- 37) ○ Kounosuke Oisaki, Yohei Seki, Takashi Ishiyama, Daisuke Sasaki, Junpei Abe, Youhei Sohma, Motomu Kanai
“Transition Metal-Free, Tryptophan-Selective Bioconjugation of Proteins”
International Symposium on Pure & Applied Chemistry 2017 (ISPAC2017) [submitted: Oral Presentation]
Ho Chi Minh City, VIETNAM; June 8-10, 2017.

Patents

- 1) Omar M. Yaghi, Alexander U. Czaja, Kounosuke Oisaki

“Organo-metallic framework, useful for gas storage and separation, chemical and biological sensing, molecular reorganization and catalysis, comprises metal compound”

Published patent applications:

WO2011146155 (A2); WO2011146155 (A9); WO2011146155 (A3); US2013131344 (A1); MX2012008941 (A1); KR20120129905 (A); JP2013519687 (A); CA2788132 (A1); AU2011256793 (A1); EP2533898 (A2); CN102858455 (A); JP2014519687 (W); RU2012138958 (A); IN201206714 (P1)

- 2) 金井求、相馬洋平、清水裕介、谷口敦彦、生長幸之助、國信洋一郎

「ジビリンホウ素錯体及びこれを含有する医薬」

出願者 独立行政法人科学技術振興機構 特願 2015-044839 (出願日 2015/3/6)

- 3) 金井求、生長幸之助、関陽平、佐々木大輔、石山隆史

「インドール構造選択的架橋剤およびそれを用いた複合体」

出願者 株式会社東京大学 TLO 出願番号 PCT/JP2017/931 (出願日 2017/3/8)

Update: April 10, 2017