

Curriculum Vitae

Personal

Name: Ken Okuno (奥野 研)
Gender: Male
Date of birth: March 12th, 1996
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Education

2022/4–2025/3 Ph.D., Graduate School of Fisheries and Environmental Sciences,
Nagasaki University
(Advisor: Prof. Seiji Shirakawa)
2020/4–2022/3 M.S. course, Graduate School of Fisheries and Environmental Sciences,
Nagasaki University
(Advisor: Prof. Seiji Shirakawa)
2016/4–2020/3 B.S. course, Faculty of Environmental Sciences, Nagasaki University

Research and Professional Experience

2025/4–present JSPS Research Fellow, Graduate School of Pharmaceutical Sciences,
Kyoto University
(Advisor: Prof. Keiji Maruoka)
2024/4–present JSPS Research Fellow
2024/10–2024/12 JSPS-ERC visiting researcher, University of Murcia (Spain)
(Advisor: Prof. Fabio Juliá)

Award

2025/3 President's Award, Nagasaki University
2024/10 Otsu Conference Award Fellow, The 15th Otsu Conference
2023/12 Organic Chemistry Paper Award at X (2023), Research Institute for
Organic Chemistry Paper
2022/3 President's Award, Nagasaki University

List of Publications

Original Papers

1. Y. Furuya, R. Nishiyori, K. Okuno, T. Mori, S. Sumida, M. Yamakawa, S. Shirakawa*
“Asymmetric Synthesis of γ -Lactones Bearing α,γ -Bis-quaternary Stereocenters via Chiral Bifunctional Sulfide-Catalyzed Desymmetrizing Bromolactonization”
Asian J. Org. Chem. **2025**, *14*, e202500062.
[DOI: 10.1002/ajoc.202500062]
<https://aces.onlinelibrary.wiley.com/doi/10.1002/ajoc.202500062>
Selected as VIP (Very Important Paper)
2. K. Okuno, S. Sumida, S. Shirakawa*
“Kinetic Resolution of α -Allyl- α -cinnamyl Carboxylic Acids Bearing an All-Carbon Quaternary Stereocenter via Bromolactonization Catalyzed by a Chiral Bifunctional Sulfide”
Asian J. Org. Chem. **2024**, *13* (12), e202400405.
[DOI: 10.1002/ajoc.202400405]
<https://doi.org/10.1002/ajoc.202400405>
3. S. Sumida, K. Okuno, T. Mori, Y. Furuya, S. Shirakawa*
“Chiral bifunctional sulfide-catalyzed enantioselective bromolactonizations of α - and β -substituted 5-hexenoic acids”
Beilstein J. Org. Chem. **2024**, *20*, 1794–1799.
[DOI: 10.3762/bjoc.20.158]
<https://www.beilstein-journals.org/bjoc/articles/20/158>
Thematic Issue: New advances in asymmetric organocatalysis II
4. K. Okuno, B. Chan, S. Shirakawa*
“Differentiating the Allyl and Propargyl Groups on α -Quaternary Carboxylic Acids via Chiral Bifunctional Sulfide-Catalyzed Kinetic Resolution”
Adv. Synth. Catal. **2023**, *365* (9), 1496–1504.
[DOI: 10.1002/adsc.202300145]
<https://onlinelibrary.wiley.com/doi/abs/10.1002/adsc.202300145>
5. R. Nishiyori, K. Okuno, B. Chan, S. Shirakawa*
“Chiral Bifunctional Selenide Catalysts for Asymmetric Iodolactonizations”
Chem. Pharm. Bull. **2022**, *70* (9), 599–604.
[DOI: 10.1248/cpb.c22-00049]

<https://doi.org/10.1248/cpb.c22-00049>

[Current Topics: Recent Advances in Molecular Space Chemistry]

6. K. Okuno, M. Hiraki, B. Chan, S. Shirakawa*
“Non-Enzymatic Kinetic Resolution and Desymmetrization of α -Quaternary Carboxylic Acids via Chiral Bifunctional Sulfide-Catalyzed Bromolactonization”
Bull. Chem. Soc. Jpn. **2022**, 95 (1), 52–59.
[DOI: 10.1246/bcsj.20210347]
<https://doi.org/10.1246/bcsj.20210347>

7. M. Hiraki, K. Okuno, R. Nishiyori, A. A. Noser, S. Shirakawa*
“Efficient Asymmetric Syntheses of α -Quaternary Lactones and Esters through Chiral Bifunctional Sulfide-Catalyzed Desymmetrizing Bromolactonization of α,α -Diallyl Carboxylic Acids”
Chem. Commun. **2021**, 57 (83), 10907–10910.
[DOI: 110.1039/D1CC03874E]
<https://doi.org/10.1039/D1CC03874E>

8. K. Okuno⁺, T. Nakamura⁺, S. Shirakawa* (⁺ These authors contributed equally)
“Asymmetric Catalysis of Chiral Bifunctional Selenides and Selenonium Salts Bearing a Urea Group”
Asian J. Org. Chem. **2021**, 10 (3), 655–659.
[DOI: 10.1002/ajoc.202100001]
<https://onlinelibrary.wiley.com/doi/10.1002/ajoc.202100001>
[Special Issue: Organocatalysis]

9. R. Nishiyori, K. Okuno, S. Shirakawa*
“Triethylamine Hydroiodide as a Bifunctional Catalyst for the Solvent-Free Synthesis of 2-Oxazolidinones”
Eur. J. Org. Chem. **2020**, 2020 (31), 4937–4941.
[DOI: 10.1002/ejoc.202000771]
<https://doi.org/10.1002/ejoc.202000771>
Highlighted in ChemistryViews :
https://www.chemistryviews.org/details/ezone/11254064/Practical_Synthetic_Method_for_2-Oxazolidinones.html

10. T. Nakamura, K. Okuno, K. Kaneko, M. Yamanaka*, S. Shirakawa*
“Chiral Bifunctional Sulfide-Catalyzed Asymmetric Bromoaminocyclizations”
Org. Biomol. Chem. **2020**, 18 (17), 3367–3373.

[DOI: 10.1039/D0OB00459F].

<https://pubs.rsc.org/en/content/articlelanding/2020/ob/d0ob00459f/unauth#!divAbstract>

Reviews

1. K. Okuno, Y. Furuya, S. Shirakawa*
“Organocatalyzed Kinetic Resolution of Racemic Carboxylic Acids”
Eur. J. Org. Chem. **2024**, 27 (1), e202300985.
[DOI: 10.1002/ejoc.202300985]
<https://chemistry-europe.onlinelibrary.wiley.com/doi/10.1002/ejoc.202300985>
2. R. Nishiyori, T. Mori, K. Okuno, S. Shirakawa*
“Chiral Sulfide and Selenide Catalysts for Asymmetric Halocyclizations and Related Reactions”
Org. Biomol. Chem. **2023**, 21 (16), 3263–3275.
[DOI: 10.1039/D3OB00292F]
<https://doi.org/10.1039/D3OB00292F>
3. K. Okuno, R. Nishiyori, S. Shirakawa*
“Catalysis by Tertiary Chalcogenonium Salts”
Tetrahedron Chem **2023**, 6, 100037.
[DOI: 10.1016/j.tchem.2023.100037]
[https://www.tetrahedron-chem.com/article/S2666-951X\(23\)00003-7/fulltext](https://www.tetrahedron-chem.com/article/S2666-951X(23)00003-7/fulltext)
4. K. Okuno, R. Nishiyori, K. Abe, T. Mori, S. Shirakawa*
“Efficient Methods for the Synthesis of Chiral 2-Oxazolidinones as Pharmaceutical Building Blocks”
Chirality **2022**, 34 (7), 915–924.
[DOI: 10.1002/chir.23452]
<https://onlinelibrary.wiley.com/doi/10.1002/chir.23452>
[Special Issue: Chirality in Pharmaceutical Research and Development]
5. K. Okuno, R. Nishiyori, M. Hiraki, S. Shirakawa*
“Environmentally Benign Synthesis of Cyclic Carbonates from Epoxides and Carbon Dioxide using Binary and Bifunctional Catalysts”
Heterocycles **2021**, 103 (1), 94–109.
[DOI: 10.3987/REV-20-SR(K)2]
<https://www.heterocycles.jp/newlibrary/libraries/doi>
[Special Issue: Prof. Yasuyuki Kita's 77th Birthday]

6. T. Nakamura, K. Okuno, R. Nishiyori, S. Shirakawa*
“Hydrogen-Bonding Catalysis of Alkyl-Onium Salts”
Chem. Asian J. **2020**, *15* (4), 463–472.
[DOI: 10.1002/asia.201901652]
<https://onlinelibrary.wiley.com/doi/abs/10.1002/asia.201901652>
[Special Issue: Celebrating the 100th Annual Meeting of the Chemical Society of Japan (CSJ).]

Other

1. 白川 誠司、奥野 研
“オリジナルなキラルスルフィド触媒の開発 –ラク トンおよびカルボン酸の不斉合成への道のり”
化学 (化学同人) **2022**, *77* (6), 21–25.