

Publication List of prof. Shigeki Matsunaga

1. Takehiko Iida, Noriyoshi Yamamoto, Shigeki Matsunaga, Hee-Gweon Woo, Masakatsu Shibasaki
Enantioselective Ring Opening of Epoxides with 4-Methoxyphenol Catalyzed by Gallium Heterobimetallic Complexes: An Efficient Method for the Synthesis of Optically Active 1,2-Diol Monoethers
Angew. Chem. Int. Ed. **37**, 2223-2226 (1998).
2. Erasmus M. Vogl, Shigeki Matsunaga, Motomu Kanai, Takehiko Iida, Masakatsu Shibasaki
Linking BINOL: C₂-Symmetric Ligands for Investigations on Asymmetric Catalysis
Tetrahedron Lett. **39**, 7917-7920 (1998).
3. Shigeki Matsunaga, Jagattaran Das, Jochen. Roels, Erasmus M. Vogl, Noriyoshi Yamamoto, Takehiko Iida, Kentaro Yamaguchi, Masakatsu Shibasaki
Catalytic Enantioselective *meso*-Epoxide Ring Opening Reaction with Phenolic Oxygen Nucleophile Promoted by Gallium Heterobimetallic Multifunctional Complexes
J. Am. Chem. Soc. **122**, 2252-2260 (2000).
4. Yun Sik Kim, Shigeki Matsunaga, Jagattaran Das, Akihiro Sekine, Takashi Ohshima, Masakatsu Shibasaki
Stable, Storable, and Reusable Asymmetric Catalyst: A Novel La-linked-BINOL Complex for the Catalytic Asymmetric Michael Reaction.
J. Am. Chem. Soc. **122**, 6506-6507 (2000).
5. Shigeki Matsunaga, Takashi Ohshima, Masakatsu Shibasaki
Immobilization of asymmetric multifunctional catalysts on an insoluble polymer.
Tetrahedron Lett. **41**, 8473-8478 (2000).
6. Hiroyuki Nogami, Shigeki Matsunaga, Motomu Kanai, Masakatsu Shibasaki
Enantioselective Strecker-type reaction promoted by polymer-supported bifunctional catalyst
Tetrahedron Lett. **42**, 279-283 (2001).
7. Naoki Yoshikawa, Naoya Kumagai, Shigeki Matsunaga, Guido Moll, Takashi Ohshima, Takeyuki Suzuki, Masakatsu Shibasaki
Direct Catalytic Asymmetric Aldol Reaction: Synthesis of Either *syn*- or *anti*- α,β -Dihydroxy Ketones.
J. Am. Chem. Soc. **123**, 2466-2467 (2001).

8. Naoya Kumagai, Shigeki Matsunaga, Naoki Yoshikawa, Takashi Ohshima, Masakatsu Shibasaki
Direct Catalytic Enantio- and Diastereoselective Aldol Reaction Using a Zn-Zn-linked-BINOL Complex:
A Practical Synthesis of syn-1,2-Diols.
Org. Lett. **3**, 1539-1542 (2001).
9. Naoya Kumagai, Shigeki Matsunaga, Masakatsu Shibasaki
Enantioselective 1,4-Addition of Unmodified Ketone Catalyzed by a Bimetallic Zn-Zn-linked-BINOL
Complex
Org. Lett. **3**, 4251-4254 (2001).
10. Shigeki Matsunaga, Takashi Ohshima, Masakatsu Shibasaki
Linked-BINOL — an Approach towards Practical Asymmetric Multifunctional Catalysis—
Adv. Synth. Catal. **344**, 3-15 (2002).
11. Jun Tian, Noriyuki Yamagiwa, Shigeki Matsunaga, Masakatsu Shibasaki
An Asymmetric Cyanation Reaction and Sequential Asymmetric Cyanation-Nitroaldol Reaction Using a
[YLi₃{tris(binaphthoxide)}] Single Catalyst Component: Catalyst Tuning with Achiral
Additives
Angew. Chem. Int. Ed. **41**, 3636-3638 (2002).
12. Naoya Kumagai, Shigeki Matsunaga, Tomofumi Kinoshita, Shinji Harada, Shigemitsu Okada, Shigeru
Sakamoto, Kentaro Yamaguchi, Masakatsu Shibasaki
Direct Catalytic Asymmetric Aldol Reaction of Hydroxyketones: Asymmetric Zinc Catalysis with
Et₂Zn/Linked-BINOL Complex
J. Am. Chem. Soc. **125**, 2169-2178 (2003).
13. Shinji Harada, Naoya Kumagai, Tomofumi Kinoshita, Shigeki Matsunaga, Masakatsu Shibasaki
Direct Catalytic Asymmetric Michael Reaction of Hydroxyketones: Asymmetric Zinc Catalysis with
Et₂Zn/Linked-BINOL Complex
J. Am. Chem. Soc. **125**, 2582-2590 (2003).
14. Shigeki Matsunaga, Naoya Kumagai, Shinji Harada, Masakatsu Shibasaki
Anti-Selective Direct Catalytic Asymmetric Mannich-type Reaction of Hydroxyketone Providing
anti-β-Amino Alcohols
J. Am. Chem. Soc. **125**, 4712-4713 (2003).

15. Jun Tian, Noriyuki Yamagiwa, Shigeki Matsunaga, Masakatsu Shibasaki
Efficient Two-step Conversion of α,β -Unsaturated Aldehyde to Optically Active γ -Oxy- α,β -Unsaturated Nitriles and its Application to Total Synthesis of (+)-Patulolide C
Org. Lett. **5**, 3021-3024 (2003).
16. Yutaka Suto, Naoya Kumagai, Shigeki Matsunaga, Motomu Kanai, Masakatsu Shibasaki
Direct Catalytic Aldol-type Reactions Using RCH_2CN
Org. Lett. **5**, 3147-3150 (2003).
17. Tomofumi Kinoshita, Shigemitsu Okada, Sun-Ryung, Park, Shigeki Matsunaga, Masakatsu Shibasaki
Sequential Wittig-Catalytic Asymmetric Epoxidation Reaction Reusing Waste $\text{Ph}_3\text{P}(\text{O})$: Application of α,β -Unsaturated *N*-Acylpyrrole as Ester Surrogate
Angew. Chem. Int. Ed. **42**, 4680-4684 (2003).
18. Noriyuki Yamagiwa, Shigeki Matsunaga, Masakatsu Shibasaki
Heterobimetallic Catalysis in Asymmetric 1,4-Addition of *O*-Alkylhydroxylamine to Enones
J. Am. Chem. Soc. **125**, 16178-16179 (2003).
19. Naoya Kumagai, Shigeki Matsunaga, Masakatsu Shibasaki
An Efficient Synthesis of Bicyclic Amidines via Intramolecular Cyclization of Azide to Lactam
Angew. Chem. Int. Ed. **43**, 478-482 (2004).
20. Noriyuki Yamagiwa, Shigeki Matsunaga, Masakatsu Shibasaki
Mechanistic Studies of a Reaction Promoted by the $\text{YLi}_3\text{tris}(\text{binaphthoxide})$ Complex: Are Three 1,1'-Bi-2-naphthol Units in a Rare Earth-Alkali Metal Heterobimetallic Complex Necessary?
Angew. Chem. Int. Ed. **43**, 4493-4497 (2004).
21. Shigeki Matsunaga, Tomofumi Kinoshita, Shigemitsu Okada, Shinji Harada, Masakatsu Shibasaki
Catalytic Asymmetric 1,4-Addition Reactions Using α, β -Unsaturated *N*-Acylpyrrole as a Highly Reactive Monodentate α,β -Unsaturated Ester Surrogate
J. Am. Chem. Soc. **126**, 7559-7570 (2004).
22. Shigeki Matsunaga, Takamasa Yoshida, Hiroyuki Morimoto, Naoya Kumagai, Masakatsu Shibasaki
Direct Catalytic Asymmetric Mannich-type Reaction of Hydroxyketone Using a Et_2Zn /linked-BINOL Complex: Synthesis of either *anti*- or *syn*- β -Amino Alcohols

J. Am. Chem. Soc. **126**, 8777-8785 (2004).

23. Yumi Abiko, Noriyuki Yamagiwa, Mari Sugita, Jun Tian, Shigeki Matsunaga, Masakatsu Shibasaki*
Catalytic Asymmetric Cyano-phosphorylation of Aldehydes Promoted by Heterobimetallic
YLi₃tris(binaphthoxide) (YLB) Complex
Synlett 2434-2436 (2004).

24. Naoya Kumagai, Shigeki Matsunaga, Masakatsu Shibasaki*
Cooperative Catalysis of a Cationic Ruthenium, Amine Base, and Na Salt: Catalytic Activation of
Acetonitrile as a Nucleophile
J. Am. Chem. Soc. **126**, 13632-13633 (2004).

25. Noriyuki Yamagiwa, Jun Tian, Shigeki Matsunaga, Masakatsu Shibasaki*
Catalytic Asymmetric Cyano-ethoxycarbonylation Reaction of Aldehydes Using a
YLi₃tris(binaphthoxide) (YLB) Complex: Mechanism and Roles of Achiral Additives
J. Am. Chem. Soc. **127**, 3413-3422 (2005).

26. Takamasa Yoshida, Hiroyuki Morimoto, Naoya Kumagai, Shigeki Matsunaga, Masakatsu
Shibasaki*
Non-C₂-Symmetric, Chirally Economical, and Readily Tunable Linked-BINOLs: Design and Application
in Direct Catalytic Asymmetric Mannich-type Reaction
Angew. Chem. Int. Ed. **44**, 3470-3474 (2005).

27. Shinji Harada, Shinya Handa, Shigeki Matsunaga and Masakatsu Shibasaki*
Direct Catalytic Asymmetric Mannich-type Reaction of *N*-(2-Hydroxyacetyl)pyrrole as an Ester
Equivalent Donor
Angew. Chem. Int. Ed. **44**, 4365-4368 (2005).

28. Naoya Kumagai, Shigeki Matsunaga, Masakatsu Shibasaki*
Catalytic chemoselective addition of acetonitrile to enolizable aldehydes with cationic Ru complex/DBU
combination
Chem. Commun. 3600-3602 (2005)

29. Noriyuki Yamagiwa, Hongbo Qin, Shigeki Matsunaga, and Masakatsu Shibasaki*
Lewis Acid-Lewis Acid Heterobimetallic Cooperative Catalysis: Mechanistic Studies and Application in
Enantioselective *Aza*-Michael Reaction

J. Am. Chem. Soc. **127**, 13419-13427 (2005).

30. Mari Sugita, Akitake Yamaguchi, Noriyuki Yamagiwa, Shinya Handa, Shigeki Matsunaga, and Masakatsu Shibasaki*

Syn-Selective Direct Catalytic Asymmetric Mannich-type Reactions of Hydroxyketones Using $Y\{N(SiMe_3)_2\}_3$ /linked-BINOL Complexes

Org. Lett. **7**, 5339-5342 (2005).

31. Hongbo Qin, Noriyuki Yamagiwa, Shigeki Matsunaga, and Masakatsu Shibasaki*

Bismuth-Catalyzed Intermolecular Hydroamination of 1,3-Dienes with Carbamates, Sulfonamides, and Carboxamides

J. Am. Chem. Soc. **128**, 1611-1614 (2006).

32. Masakatsu Shibasaki, and Shigeki Matsunaga*

Metal/linked-BINOL complexes: Applications in direct catalytic asymmetric Mannich-type reactions

J. Organomet. Chem. **691**, 2089-2100 (2006).

Ranked in as Top 25 most cited article from *J. Organomet. Chem.* as published 2005-2008.

33. Masakatsu Shibasaki, Motomu Kanai, and Shigeki Matsunaga

Chiral Poly-Rare Earth Metal Complexes in Asymmetric Catalysis

Aldrichimica Acta. 31-39 (2006)

34. Shigeki Matsunaga, Hongbo Qin, Mari Sugita, Shigemitsu Okada, Tomofumi Kinoshita, Noriyuki Yamagiwa, and Masakatsu Shibasaki*

Catalytic Asymmetric Epoxidation of α,β -Unsaturated *N*-Acylpyrroles as Monodentate and Activated Ester Equivalent Acceptors

Tetrahedron, **62**, 6630-6639 (2006)

35. Noriyuki Yamagiwa, Yumi Abiko, Mari Sugita, Jun Tian, Shigeki Matsunaga, Masakatsu Shibasaki*

Catalytic Asymmetric Cyano-phosphorylation of Aldehydes Using a YLi_3 tris(binaphthoxide) Complex (YLB)

Tetrahedron: Asymmetry, **17**, 566-573 (2006)

36. Masakatsu Shibasaki, and Shigeki Matsunaga*

Design and Application of Linked-BINOL Chiral Ligands in Bifunctional Asymmetric Catalysis

Chem. Soc. Rev. **35**, 269-279 (2006)

*37. Hiroyuki Morimoto, Sean H. Wiedemann, Akitake Yamaguchi, Shinji Harada, Zhihua Chen, Shigeki

Matsunaga*, and Masakatsu Shibasaki*

Trichloromethyl Ketones as Synthetically Versatile Donors: Application in Direct Catalytic Mannich-type Reactions and Stereoselective Synthesis of Azetidines

Angew. Chem. Int. Ed. **45**, 3146-3150 (2006).

*38. Shigeki Matsunaga

Recent Progress in Catalytic Intermolecular Hydroamination

J. Synth. Org. Chem. Jpn. **64**, 778-779 (2006).

39. Akitake Yamaguchi, Shigeki Matsunaga, and Masakatsu Shibasaki*

Direct catalytic asymmetric Mannich-type reaction of isomerizable aliphatic imines: chemoselective enolate formation from a hydroxyketone by a Zn catalyst

Tetrahedron Lett. **47**, 3985-3989 (2006).

40. Shigeki Matsunaga, Mari Sugita, Noriyuki Yamagiwa, Shinya Handa, Akitake Yamaguchi, and Masakatsu Shibasaki*

Syn-Selective Direct Catalytic Asymmetric Mannich-type Reactions of Aromatic and Heteroaromatic Hydroxyketones Promoted by Y[N(SiMe₃)₂]₃/linked-BINOL Complexes

Bull. Chem. Soc. Jpn. **79**, 1906-1912 (2006).

41. Shin-ya Tosaki, Keiichi Hara, Vijay Gnanadesikan, Hiroyuki Morimoto, Shinji Harada, Mari Sugita, Noriyuki Yamagiwa, Shigeki Matsunaga and Masakatsu Shibasaki*

Mixed La-Li Heterobimetallic Complexes for Tertiary Nitroaldol Resolution

J. Am. Chem. Soc. **128**, 11776-11777 (2006).

42. Zhihua Chen, Hiroyuki Morimoto, Shigeki Matsunaga and Masakatsu Shibasaki*

Catalytic Asymmetric Epoxidation of α -Methyl α,β -Unsaturated Anilides as Ester Surrogates

Synlett 3529-3532 (2006).

43. Hongbo Qin, Noriyuki Yamagiwa, Shigeki Matsunaga and Masakatsu Shibasaki*

Bismuth-Catalyzed Direct Substitution of the Hydroxyl Group in Alcohols with Sulfonamides, Carbamates, and Carboxamides

Angew. Chem. Int. Ed. **46**, 409-413 (2007).

44. Hongbo Qin, Noriyuki Yamagiwa, Shigeki Matsunaga and Masakatsu Shibasaki*

Bismuth- and Hafnium-catalyzed Hydroamination of Vinyl Arenes with Sulfonamides, Carbamates, and

Carboxamides

Chem. Asian, J. **2**, 150-154 (2007).

45. Hiroyuki Kakei, Riichiro Tsuji, Takashi Ohshima, Hiroyuki Morimoto, Shigeki Matsunaga, and Masakatsu Shibasaki*

Catalytic Asymmetric Epoxidation of α,β -Unsaturated Esters Using Chiral Yttrium-Biaryldiol Complexes
Chem. Asian, J. **2**, 257-264 (2007).

46. Shinji Harada, Ryo Takita, Takashi Ohshima, Shigeki Matsunaga and Masakatsu Shibasaki*

Ligand Accelerated Indium(III)-Catalyzed Asymmetric Alkynylation of Aldehydes with 2-Methyl-3-butyn-2-ol as an Ethyne Equivalent Donor
Chem. Commun. 948-950 (2007)

47. Shinya Handa, Vijay Gnanadesikan, Shigeki Matsunaga, and Masakatsu Shibasaki*

syn-Selective Catalytic Asymmetric Nitro-Mannich Reactions Using a Heterobimetallic Cu-Sm-Schiff Base Complex
J. Am. Chem. Soc. **129**, 4900-4901 (2007).

48. So-Young Park, Hiroyuki Morimoto, Shigeki Matsunaga, and Masakatsu Shibasaki*

Catalytic Asymmetric Michael Reactions of Malonate to α,β -Unsaturated *N*-Acylpyrroles Using a La(O-*i*Pr)₃/*Ph*-linked-BINOL Complex
Tetrahedron Lett. **48**, 2815-2818 (2007).

49. Naoya Kumagai, Shigeki Matsunaga, Masakatsu Shibasaki*

Catalytic nucleophilic activation of acetonitrile via a cooperative catalysis of cationic Ru complex, DBU, and Na salt
Tetrahedron, **63**, 8598-8608 (2007)

50. Hiroyuki Morimoto, Gang Lu, Naohiro Aoyama, Shigeki Matsunaga, and Masakatsu Shibasaki*

Lanthanum Aryloxide/Pybox-Catalyzed Direct Asymmetric Mannich-Type Reactions Using a Trichloromethyl Ketone as a Propionate Equivalent Donor
J. Am. Chem. Soc. **129**, 9588-9589 (2007).

51. Akitake Yamaguchi, Naohiro Aoyama, Shigeki Matsunaga, and Masakatsu Shibasaki*

Ba-catalyzed Direct Mannich-type Reactions of a β,γ -Unsaturated Ester Providing β -Methyl *aza*-Morita-Baylis-Hillman-type Products

Org. Lett. **9**, 3387-3390 (2007).

52. Hiroyuki Kakei, Toshihiko Sone, Yoshihiro Sohtome, Shigeki Matsunaga and Masakatsu Shibasaki*

Catalytic Asymmetric Cyclopropanation of Enones With Dimethyloxosulfonium Methylide Promoted by a La-Li₃-(Biphenyldiolate)₃ + NaI Complex

J. Am. Chem. Soc. **129**, 13410-13411 (2007).

53. Shigeki Matsunaga and Masakatsu Shibasaki*

Multimetallc Bifunctional Asymmetric Catalysis Based on Proximity-Effect-Control

Bull. Chem. Soc. Jpn. **81**, 60-75 (2008).

54. Ryo Takita, Shinji Harada, Takashi Ohshima, Shigeki Matsunaga and Masakatsu Shibasaki*

Catalytic Enantioselective Addition of Terminal Alkynes to Aldehydes: Preparation of (S)-(-)-1,3-Diphenyl-2-Propyn-1-ol and (S)-(-)-4-Methyl-1-Phenyl-2-Pentyn-1,4-Diol

Org. Synth. **85**, 118-130 (2008)

55. Hisashi Mihara, Yoshihiro Sohtome, Shigeki Matsunaga, Masakatsu Shibasaki*

Chiral Catalyst-based Convergent Synthesis of HIV Protease Inhibitor GRL-06579A

Chem. Asian, J. **3**, 359-366 (2008).

56. Masataka Morita, Toshihiko Sone, Kenzo Yamatsugu, Yoshihiro Sohtome, Shigeki Matsunaga, Motomu Kanai,* Yasuyoshi Watanabe, and Masakatsu Shibasaki*

A method for the synthesis of an oseltamivir PET tracer

Bioorg. Med. Chem. Lett. **18**, 600-602 (2008).

57. Zhihua Chen, Hiroyuki Morimoto, Shigeki Matsunaga, and Masakatsu Shibasaki*

A Bench-stable Homodinuclear Ni₂-Schiff Base Complex for Catalytic Asymmetric Synthesis of α -Tetrasubstituted *anti*- α,β -Diamino Acid Surrogates

J. Am. Chem. Soc. **130**, 2170-2171 (2008).

58. Shinya Handa, Keita Nagawa, Yoshihiro Sohtome, Shigeki Matsunaga, and Masakatsu Shibasaki*

A Heterobimetallic Pd-La-Schiff Base Complex for *anti*-Selective Catalytic Asymmetric Nitroaldol Reactions and Applications to Short Syntheses of β -Adrenoceptor Agonists

Angew. Chem. Int. Ed. **47**, 3230-3233 (2008)

59. Keiichi Hara, So-Young Park, Noriyuki Yamagiwa, Shigeki Matsunaga, Masakatsu Shibasaki*
Catalytic Asymmetric Epoxidation of α,β -Unsaturated Phosphine Oxides with a Y(O-*i*Pr)₃/Biphenyldiol
Complex
Chem. Asian, J. **3**, 1500-1504 (2008).

60. Sean H. Wiedemann, Hidetoshi Noda, Shinji Harada, Shigeki Matsunaga, and Masakatsu
Shibasaki*
Sc³⁺-Catalyzed Aldol-type Additions of *N*-Benzoylcyclopropanecarboxamides via Iodide-Mediated
Ring-Opening: Stereoselective Synthesis of γ -Lactams
Org. Lett. **10**, 1661-1664 (2008).

61. Masakatsu Shibasaki,* Shigeki Matsunaga, Naoya Kumagai
Strategies for Constructing Diverse Chiral Environments in Multimetallic Bifunctional Asymmetric
Catalysis
Synlett 1583-1602 (2008).

62. Yoshihiro Sohtome, Yuko Kato, Shinya Handa, Naohiro Aoyama, Keita Nagawa, Shigeki Matsunaga,
and Masakatsu Shibasaki*
Stereodivergent Catalytic Doubly Diastereoselective Nitroaldol Reactions Using Heterobimetallic
Complexes
Org. Lett. **10**, 2231-2234 (2008).

63. Akitake Yamaguchi, Shigeki Matsunaga, and Masakatsu Shibasaki*
Direct Catalytic Asymmetric Mannich-type Reactions of γ -Butenolides: Effectiveness of Brønsted Acid
in Chiral Metal Catalysis
Org. Lett. **10**, 2319-2322 (2008).

64. Gang Lu, Hiroyuki Morimoto, Shigeki Matsunaga, and Masakatsu Shibasaki*
Chiral γ -Amino Amide Synthesis via Heterobimetallic La/Li/pybox-Catalyzed Direct Asymmetric
Mannich-type Reactions of α -Keto Anilides
Angew. Chem. Int. Ed. **47**, 6847-6850 (2008)

65. Zhihua Chen, Kenichiro Yakura, Shigeki Matsunaga, and Masakatsu Shibasaki*
Direct Catalytic Asymmetric Mannich-type Reaction of β -Keto Phosphonate Using a Dinuclear
Ni₂-Schiff Base Complex
Org. Lett. **10**, 3239-3242 (2008).

- *66. Toshihiko Sone, Akitake Yamaguchi, Shigeki Matsunaga* and Masakatsu Shibasaki*
Catalytic Asymmetric Synthesis of 2,2-Disubstituted Terminal Epoxides via Dimethyloxosulfonium Methylide Addition to Ketones
J. Am. Chem. Soc. **130**, 10078-10079 (2008).
- *67. Hiroyuki Morimoto, Tatsuhiko Yoshino, Takafumi Yukawa, Gang Lu, Shigeki Matsunaga* and Masakatsu Shibasaki*
Lewis Base-Assisted-Brønsted Base Catalysis: Bidentate Phosphine Oxides as Activators and Modulators of Brønsted Basic Lanthanum-Aryloxide
Angew. Chem. Int. Ed. **47**, 9125-9129 (2008)
- *68. Hidetoshi Noda, Sean H. Wiedemann, Shigeki Matsunaga,* and Masakatsu Shibasaki*
A DyI₃-Catalyzed Mannich-type Reaction of α -Methylcyclopropanecarboxylate-type Donors for the Stereoselective Synthesis of Pyrrolidines with Quaternary Stereocenters
Chem. Lett. **37**, 1180-1181 (2008)
- *69. Zhihua Chen, Makoto Furutachi, Yuko Kato, Shigeki Matsunaga* and Masakatsu Shibasaki*
A Stable Homodinuclear Biscobalt(III)-Schiff Base Complex for Catalytic Asymmetric 1,4-Additions of β -Keto Esters to Alkynones
Angew. Chem. Int. Ed. **48**, 2218-2220 (2009)
- *70. Toshihiko Sone, Gang Lu, Shigeki Matsunaga* and Masakatsu Shibasaki*
Catalytic Asymmetric Synthesis of 2,2-Disubstituted Oxetanes from Ketones via One-pot Sequential Addition of Sulfur Ylide
Angew. Chem. Int. Ed. **48**, 1677-1680 (2009)
- *71. Keiichi Hara, Shin-ya Tosaki, Vijay Gnanadesikan, Hiroyuki Morimoto, Shinji Harada, Mari Sugita, Noriyuki Yamagiwa, Shigeki Matsunaga,* and Masakatsu Shibasaki*
Mixed La-Li Heterobimetallic Complexes for Tertiary Nitroaldol Resolution
Tetrahedron, **65**, 5030-5036 (2009)
72. Masakatsu Shibasaki,* Motomu Kanai, Shigeki Matsunaga, Naoya Kumagai
Recent Progress in Asymmetric Bifunctional Catalysis Using a Multimetallic System
Acc. Chem. Res. **42**, 1117-1127 (2009)

- *73. Yuko Kato, Zhihua Chen, Shigeki Matsunaga* and Masakatsu Shibasaki*
Catalytic Asymmetric Synthesis of Nitrogen-containing *gem*-Bisphosphonates Using a Dinuclear Ni₂-Schiff Base Complex
Synlett 1635-1638 (2009)
- *74. Yingjie Xu, Gang Lu, Shigeki Matsunaga*, and Masakatsu Shibasaki*
Direct *anti*-Selective Catalytic Asymmetric Mannich-type Reactions of α -Ketoanilides for γ -Amino Amides and Azetidine-2-amides Synthesis
Angew. Chem. Int. Ed. **48**, 3353-3356 (2009)
- *75. Hisashi Mihara, Yingjie Xu, Nicholas E. Shepherd, Shigeki Matsunaga*, and Masakatsu Shibasaki*
A Heterobimetallic Ga/Yb-Schiff Base Complex for Catalytic Asymmetric α -Addition of Isocyanides to Aldehydes
J. Am. Chem. Soc. **131**, 8384-8385 (2009).
- *76. Yuko Kato, Makoto Furutachi, Zhihua Chen, Harunobu Mistunuma, Shigeki Matsunaga*, and Masakatsu Shibasaki*
A Homodinuclear Mn(III)₂-Schiff Base Complex for Catalytic Asymmetric 1,4-Additions of Oxindoles to Nitroalkenes
J. Am. Chem. Soc. **131**, 9168-9169 (2009).
- *77. Akitake Yamaguchi, Shigeki Matsunaga*, and Masakatsu Shibasaki*
Catalytic Asymmetric Synthesis of α -Alkylidene- β -hydroxy Esters via Dynamic Kinetic Asymmetric Transformation Involving Ba-Catalyzed Direct Aldol Reaction
J. Am. Chem. Soc. **131**, 10842-10843 (2009).
- *78. Shinsuke Mouri, Zhihua Chen, Shigeki Matsunaga*, and Masakatsu Shibasaki*
Direct Catalytic Asymmetric Aldol Reaction of β -Keto Esters with Formaldehyde Promoted by a Dinuclear Ni₂-Schiff Base Complex
Chem. Commun. 5138-5140 (2009).
- *79. Tatsuhiko Yoshino, Hiroyuki Morimoto, Gang Lu, Shigeki Matsunaga*, and Masakatsu Shibasaki*
Construction of Contiguous Tetrasubstituted Chiral Carbon Stereocenters via Direct Catalytic Asymmetric Aldol Reaction of α -Isothiocyanato Esters to Ketones
J. Am. Chem. Soc. **131**, 17068-17069 (2009).

80. Shinsuke Mouri, Zihua Chen, Harunobu Mitsunuma, Makoto Furutachi, Shigeki Matsunaga, and Masakatsu Shibasaki*

Catalytic Asymmetric Synthesis of 3-Aminooxindoles: Enantiofacial Selectivity Switch in Bimetallic vs Monometallic Schiff Base Catalysis

J. Am. Chem. Soc. **132**, 1255-1257 (2010).

81. Makoto Furutachi, Zihua Chen, Shigeki Matsunaga and Masakatsu Shibasaki*

Catalytic Asymmetric 1,4-Additions of β -Keto Esters to Nitroalkenes Promoted by a Bifunctional Homobimetallic Co_2 -Schiff Base Complex

Molecules **15**, 532-544 (2010).

82. Nicholas E. Shepherd, Hirooki Tanabe, Yingjie Xu, Shigeki Matsunaga and Masakatsu Shibasaki*

Direct Catalytic Asymmetric Vinylogous Mannich-type and Michael Reactions of an α,β -Unsaturated γ -Butyrolactam Under Dinuclear Nickel Catalysis

J. Am. Chem. Soc. **132**, 3666-3667 (2010).

83. Shinya Handa, Vijay Gnanadesikan, Shigeki Matsunaga, and Masakatsu Shibasaki*

Heterobimetallic Transition Metal/Rare Earth Metal Bifunctional Catalysis: a Cu-Sm-Schiff Base Complex for *syn*-Selective Catalytic Asymmetric Nitro-Mannich Reaction

J. Am. Chem. Soc. **132**, 4925-4934 (2010).

84. Takafumi Yukawa, Bianca Seelig, Hiroyuki Morimoto, Shigeki Matsunaga, Albrecht Berkessel,* and Masakatsu Shibasaki*

Catalytic Asymmetric aza-Morita-Baylis-Hillman Reaction of Methyl Acrylate Promoted by a La-linked-BINOL Complex Combined with DABCO

J. Am. Chem. Soc. **132**, 11988-11992 (2010).

85. Yingjie Xu, Shigeki Matsunaga, and Masakatsu Shibasaki*

syn-Selective Catalytic Asymmetric 1,4-Addition of α -Ketoanilides to Nitroalkenes under Dinuclear Nickel Catalysis

Org. Lett. **12**, 3246-3249 (2010).

86. Makoto Furutachi, Shinsuke Mouri, Shigeki Matsunaga, and Masakatsu Shibasaki*

A Heterobimetallic Ni/La-salan Complex for Catalytic Asymmetric Decarboxylative 1,4-Addition of Malonic Acid Half-Thioester

Chem. Asian J. **5**, 2351-2354 (2010).

- *87. Masakatsu Shibasaki* and Shigeki Matsunaga*
Bifunctional Asymmetric Catalysis Based on Dinuclear Schiff Base Complexes
J. Synth. Org. Chem. Jpn. **68**, 1142-1149 (2010).
- *88. Harunobu Mitsunuma and Shigeki Matsunaga*
Dinuclear Ni₂-Schiff base complex-catalyzed asymmetric 1,4-addition of β -keto esters to nitroethylene toward $\gamma^{2,2}$ -amino acid synthesis
Chem. Commun. **47**, 469-471 (2011). [Emerging Investigator Special Issue]
- *89. Gang Lu, Tatsuhiko Yoshino, Hiroyuki Morimoto, Shigeki Matsunaga,* and Masakatsu Shibasaki*
Stereodivergent Direct Catalytic Asymmetric Mannich-type Reaction of α -Isothiocyanato Ester with Ketimines
Angew. Chem. Int. Ed. **50**, 4382-4385 (2011) DOI: 10.1002/anie.201101034
- *90. Hiroto Komai, Tatsuhiko Yoshino, Shigeki Matsunaga,* and Motomu Kanai*
Lewis acid-catalyzed Benzylic C-H Bond Functionalization of Azaarenes: Addition to Enones
Org. Lett. **13**, 1706-1709 (2011).
- *91. Yingjie Xu, Luqing Lin, Motomu Kanai, Shigeki Matsunaga,*, and Masakatsu Shibasaki*
Catalytic Asymmetric Ring-Opening of *meso*-Aziridines with Malonates Under Heterodinuclear Rare Earth Metal Schiff Base Catalysis
J. Am. Chem. Soc. **133**, 5791-5793 (2011).
- *92. Shigeki Matsunaga,* and Tatsuhiko Yoshino
Construction of Contiguous Tetrasubstituted Chiral Carbon Stereocenters via Direct Catalytic Asymmetric Aldol and Mannich-type Reactions
the Chemical Record, **11**, 260-268 (2011).
- *93. Shinsuke Mouri, Zhihua Chen, Shigeki Matsunaga,*, and Masakatsu Shibasaki*
Catalytic Asymmetric Amination of Oxindoles Under Dinuclear Nickel Schiff Base Catalysis
Heterocycles **84**, 879-892 (2012). DOI: [10.3987/COM-11-S\(P\)66](https://doi.org/10.3987/COM-11-S(P)66)
- *94. Toshihiko Sone, Akitake Yamaguchi, Shigeki Matsunaga,*, and Masakatsu Shibasaki*
Enantioselective Synthesis of 2,2-Disubstituted Terminal Epoxides via Catalytic Asymmetric Corey-Chaykovsky Epoxidation of Ketones

Molecules **17**, 1617-1634 (2012). doi:[10.3390/molecules17021617](https://doi.org/10.3390/molecules17021617)

95. Harunobu Mitsunuma, Masakatsu Shibasaki, Motomu Kanai, and [Shigeki Matsunaga*](#)
Catalytic Asymmetric Total Synthesis of Chimonanthine, Folicanthine, and Calycanthine via Double Michael Reaction of Bisoxindole
Angew. Chem. Int. Ed. **51**, 5217-5221(2012) [DOI: 10.1002/anie.201201132].

96. Yudai Suzuki, Motomu Kanai, and [Shigeki Matsunaga*](#)
Mg-catalyzed Enantioselective Benzylic C-H Bond Functionalization of Isoindolinones: Addition to Imines
Chem. Eur. J. **18**, 7654-7657 (2012) DOI: [10.1002/chem.201200821](https://doi.org/10.1002/chem.201200821)

97. Hiroto Komai, Tatsuhiko Yoshino, [Shigeki Matsunaga,](#) and Motomu Kanai*
Lewis acid-catalyzed Benzylic C-H Bond Functionalization of Azaarenes: Addition to Imines and Enones
Synthesis, **44**, 2185-2194 (2012) doi:[10.1055/s-0031-1291041](https://doi.org/10.1055/s-0031-1291041)

98. Shota Kato, Tatsuhiko Yoshino, Masakatsu Shibasaki, Motomu Kanai, and [Shigeki Matsunaga*](#)
Catalytic Asymmetric Synthesis of Spirooxindoles via Mannich-type Reaction of Isothiocyanato Oxindoles
Angew. Chem. Int. Ed. **51**, 7007-7010 (2012) [DOI: 10.1002/anie.201203005].

99. Hirooki Tanabe, Yingjie Xu, Bo Sun, [Shigeki Matsunaga](#), and Masakatsu Shibasaki*
Direct Catalytic Asymmetric Vinylogous Michael Reaction of α,β -unsaturated γ -butyrolactam under dinuclear nickel Schiff base catalysis
Heterocycles **86**, 611-622 (2012). DOI: 10.3987/COM-12-S(N)58

100. Luqing Lin, Kumiko Yamamoto, [Shigeki Matsunaga](#), and Motomu Kanai *
Rh-Catalyzed Cross-Aldol Reaction via in situ Aldehyde-Enolate Formation from Allyloxy-Boranes and Primary Allylic Alcohols
Angew. Chem. Int. Ed. **51**, 10275-10279 (2012) [DOI: 10.1002/anie.201205680]

101. Takashi Andou, Yutaka Saga, Hiroto Komai, [Shigeki Matsunaga](#), and Motomu Kanai *
Cobalt-Catalyzed C-4 Selective Direct Alkylation of Pyridines
Angew. Chem. Int. Ed. **52**, 3213-3216 (2013) DOI: 10.1002/anie.201208666 and 10.1002/ange.201208666

102. Tatsuhiko Yoshino, Hideya Ikemoto, Shigeki Matsunaga, and Motomu Kanai *
A Cationic High-Valent Cp*Co^{III} Complex for Catalytic Generation of Nucleophilic Organometallic
Species: Directed C-H Bond Activation
Angew. Chem. Int. Ed. **52**, 2207-2211 (2013) DOI: 10.1002/anie.201209226 and
10.1002/ange.201209226

103. Shigeki Matsunaga, and Masakatsu Shibasaki *
Multimetallc Schiff Base Complexes as Cooperative Asymmetric Catalysts
Synthesis, **45**, 421-437 (2013) DOI: 10.1055/s-0032-1316846

104. Motomu Kanai, * Shigeki Matsunaga, Kounosuke Oisaki, and Yohei Shimizu
Carbon–Carbon Bond-Formations Promoted by Redox-Active Metal Catalysts
J. Synth. Org. Chem. Jpn. **71**, 433-442 (2013) doi:

105. Shota Kato, Motomu Kanai, and Shigeki Matsunaga*
Catalytic Asymmetric Synthesis of Spirooxindoles via Addition of Isothiocyanato Oxindoles to
Aldehydes Under Dinuclear Nickel Schiff Base Catalysis
Chem. Asian J. **8**, 1768-1771 (2013) DOI: 10.1002/asia.201300251

106. Atmika Paudel, Keiichi Kaneko, Ayako Watanabe, Shigeki Matsunaga, Motomu Kanai, and Hiroshi
Hamamoto, Kazuhisa Sekimizu
Structure-activity relationship study of novel iminothiadiazolo-1 pyrimidinone antimicrobial agents
J. Antibiotics **66**, 663-667 (2013) doi: 10.1038/ja.2013.69

107. Tatsuhiko Yoshino, Hideya Ikemoto, Shigeki Matsunaga, and Motomu Kanai *
Cp*Co^{III}-Catalyzed C2-Selective Addition of Indoles to Imines
Chem. Eur J. **19**, 9142-9146 (2013) DOI: 10.1002/chem.201301505

108. Keiichi Kaneko, Shigeki Matsunaga, and Motomu Kanai *
Sultam Synthesis via Cu-Catalyzed Intermolecular Carboamination of Alkenes with
N-Fluorobenzenesulfonimide
Org. Lett. **15**, 2502-2505 (2013). DOI: 10.1021/ol4009848

109. Luqing Lin, Kumiko Yamamoto, Shigeki Matsunaga, and Motomu Kanai *
Rh-Catalyzed Aldehyde-Aldehyde Cross-Aldol Reaction under Base-free Conditions: In Situ
Aldehyde-derived Enolate Formation via Orthogonal Activation

Chem. Asian J. **8**, 2974-2983 (2013) Selected as a Frontispiece

110. Shota Kato, Motomu Kanai, and Shigeki Matsunaga

ENANTIOSELECTIVE SYNTHESIS OF SPIROOXINDOLES VIA DIRECT CATALYTIC ASYMMETRIC ALDOL-TYPE REACTION OF ISOTHIOCYANATO OXINDOLES

Heterocycles **88**, 475-491 (2014) DOI: 10.3987/COM-13-S(S)60

111. Shigeki Matsunaga and Masakatsu Shibasaki*

Recent Advances in Cooperative Bimetallic Asymmetric Catalysis: Dinuclear Schiff Base Complexes

Chem. Commun. **50**, 1044-1057 (2014). DOI:10.1039/C3CC47587E [Selected as a Cover Picture]

112. Shohei Yamamoto, Yutaka Saga, Takashi Andou, Shigeki Matsunaga and Motomu Kanai*

Cobalt-Catalyzed C-4 Selective Alkylation of Quinolines

Adv. Synth. Catal. **356**, 401-405 (2014).

113. Sun Bo, Tatsuhiko Yoshino, Shigeki Matsunaga, and Motomu Kanai *

Air-Stable Cp*Co(CO)I₂ Complex as a Precursor for Cationic Cp*Co^{III} Catalysis: Application for Directed C2-Selective C-H Amidation of Indoles

Adv. Synth. Catal. **356**, 1491-1495 (2014).

114. Hideya Ikemoto, Tatsuhiko Yoshino, Ken Sakata, Shigeki Matsunaga, and Motomu Kanai *

Pyrrroloindolone Synthesis via a Cp*Co^{III}-Catalyzed Redox-Neutral Directed C-H Alkenylation/Annulation Sequence

J. Am. Chem. Soc. **136**, 5424-5431 (2014). DOI: 10.1021/ja5008432

115. Shohei Yamamoto, Shigeki Matsunaga and Motomu Kanai*

COBALT-CATALYZED C5-SELECTIVE C-H FUNCTIONALIZATION OF 4-Me-QUINOLINES WITH STYRENES: AN APPROACH TO 5,6-DIHYDRO-4H-BENZO[de]QUINOLINES

Heterocycles **90**, 89-96 (2015)

116. Yingjie Xu, Keiichi Kaneko, Motomu Kanai, Masakatsu Shibasaki, and Shigeki Matsunaga*

Regiodivergent Kinetic Resolution of Terminal and Internal *rac*-Aziridines with Malonates under Dinuclear Schiff Base Catalysis

J. Am. Chem. Soc. **136**, 9190-9194 (2014). DOI: 10.1021/ja5039165

*117. Suzuki, Y.; Sun, B.; Yoshino, T.; Kanai, M.; Matsunaga, S.

Cp*Co(III)-catalyzed oxidative C-H alkenylation of benzamides with ethyl acrylate
Tetrahedron **2015**, *in press*. doi:[10.1016/j.tet.2015.02.032](https://doi.org/10.1016/j.tet.2015.02.032)

*118. Sun, B.; Yoshino, T.; Matsunaga, S.; Kanai, M.

Cp*CoI₂-dimer as a precursor for cationic Co(III)-catalysis: application to C-H phosphoramidation of indoles

Chem. Commun. **2015**, *51*, 4649. DOI: [10.1039/C4CC10284C](https://doi.org/10.1039/C4CC10284C)