

平成23年度 研究業績

笹井宏明 (大阪大学産業科学研究所、A01班 公募班員)

1. 発表論文等 (査読付き論文, 著書, 総説等の発表状況)

- (1) An Enantioselective Organocatalyzed aza-MBH Domino Process: Application to the Facile Synthesis of Tetrahydropyridines
Takizawa, S.; Inoue, N.; Sasai, H.* *Tetrahedron Lett.* **2011**, *52*, 377-380.
- (2) A Bifunctional Spiro-Type Organocatalyst with High Enantiocontrol: Application to the Aza-Morita-Baylis-Hillman Reactions
Takizawa, S.; Kiriya, K.; Ieki, K.; Sasai, H.* *Chem. Commun.* **2011**, *47*, 9227-9229.
- (3) Pd(II)-SPRIX Catalyzed Enantioselective Construction of Pyrrolizines/Pyrroloindoles Employing Molecular Oxygen As the Sole Oxidant
Ramalingam, C.; Takenaka, K.; Sasai, H.* *Tetrahedron* **2011**, *67*, 2889-2894.
- (4) Chlorinative Cyclization of 1,6-Enynes by Enantioselective Palladium(II)/Palladium(IV) Catalysis
Takenaka, K.; Hashimoto, S.; Takizawa, S.; Sasai, H.* *Adv. Synth. Catal.* **2011**, *353*, 1067-1070.
- (5) Enantioselective Cyclization of 4-Alkenoic Acids via an Oxidative Allylic C-H Esterification
Takenaka, K.; Akita, M.; Tanigaki, Y.; Takizawa, S.; Sasai, H.* *Org. Lett.* **2011**, *13*, 3506-3509.
- (6) Synthesis of Spiro Bis(1,2,3-triazolium) Salts as Chiral Ionic Liquids
Yoshida, Y.; Takizawa, S.; Sasai, H.* *Tetrahedron Lett.* **2011**, *52*, 6877-6879.
- (7) Enantioselective Synthesis of α -Alkylidene- γ -Butyrolactones via an Intramolecular Rauhut-Currier Reaction Promoted by Acid-Base Organocatalysts
Takizawa, S.; Nguyen, T.; Grossmann, A.; Enders, D.; Sasai, H.* *Angew. Chem. Int. Ed.* **2012**, *in press*.

以下、査読無しです。

C-C Bond Formation: Enantioselective (aza) Morita-Baylis-Hillman Reaction

Sasai, H.*; Takizawa, S. In *Comprehensive Chirality*; Yamamoto, H.; Carreira, E. M. Eds; Elsevier, Oxford UK, 2012, Chapter 6.9, in press.

Direct C-C bond formation (Henry, Aza-Henry)

Sasai, H.* In *Comprehensive Chirality*; Yamamoto, H.; Carreira, E. M. Eds; Elsevier, Oxford UK, 2012, Chapter 5.11, in press.

酸塩基型有機分子触媒による不斉ドミノ型反応の開発
笹井宏明*, 滝澤忍, 生産と技術, **2011**, 63(3), 70-73.

2. 学会発表等 (国内外の招待講演および国際会議での発表状況)

- (1) Development of Multifunctional Asymmetric Catalysts and Application to Catalytic Asymmetric Synthesis
Sasai, H. Symposium on Molecular Chirality 2011、東京工業大学大岡山キャンパス、2011.5.20-21 (受賞講演) .
- (2) Exploring a New Asymmetric Reaction Using Chiral Spiro Bis-isoxazoline Ligand SPRIX
Sasai, H. International Symposium on Organic and Medicinal Chemistry Frontiers, Nankai University, Tianjin, China, 2011.7.2 (Plenary Lecture)
- (3) Development of Novel Chiral Spiro Ligands Bearing Sulfur Donor
Takatani, S.; Sugimoto, K.; Takenaka, K.; Sasai, H. OMCOS 16, Shanghai, China, 2011.7.24-28 (ポスター発表)
- (4) Development of New Method for an Efficient Synthesis of Spiro Bis(triazole) Derivatives and Their Applications to Asymmetric Catalysis
Yoshida, Y.; Takizawa, S.; Sasai, H. The 2nd International Symposium on Process Chemistry, Kyoto, Japan, 2011.8.10-12 (ポスター発表)
- (5) Enantioselective Carbon-Carbon Bond-Forming Reactions Using Vanadium(V) Complexes
Takizawa, S.; Kodera, J.; Rajesh, D.; Katayama, T.; Sasai, H. Direct Catalytic Activation of Inert Substrates, Aachen, Germany, 2011.9.1-2 (口頭発表)
- (6) Development of Novel Chiral Spiro Ligands Bearing Sulfur Donor
Takatani, S.; Sugimoto, K.; Takenaka, K.; Sasai, H. Direct Catalytic Activation of Inert Substrates, Aachen, Germany, 2011.9.1-2 (口頭発表)
- (7) Catalytic Enantioselective Reactions via Pd(II/IV) Catalysis
Sasai, H. 14th Asian Chemical Congress, Queen Siriki National Convention Center, Bangkok, Thailand, 2011.9.5-8 (招待講演)
- (8) Organocatalyzed Domino Process Based on the aza-Morita-Baylis-Hillman (aza-MBH) Reaction
Takizawa, S.; Inoue, N.; Hirata, S.; Sasai, H. The 7th International Symposium on Integrated Synthesis, Kobe, Japan, 2011.11.9-10 (ポスター発表)
- (9) Intramolecular Enantioselective Rauhut-Currier Reaction
Nguyen, T. M.-N.; Takizawa, S.; Sasai, H. The 7th International Symposium on Integrated Synthesis, Kobe, Japan, 2011.11.9-10 (ポスター発表)

- (10) Oxidative Desymmetrization of Diols by Iridium Catalysts
Suzuki, T.; Ghozati, K.; Takatani, S.; Zhou, D.; Asano, K.; Katoh, T.; Sasai, H. 8th AFMC International Medicinal Chemistry Symposium, Tokyo, Japan, 2011.11.29-12.2 (ポスター発表)
- (11) Enantioselective Cyclization/Diacetoxylation of Alkynyl Cyclohexadienones Catalyzed by Palladium-Spiro Bis(isoxazoline) Complex
Mohanta, S. C.; Takenaka, K.; Takizawa, S.; Suzuki, T.; Sasai, H. 8th AFMC International Medicinal Chemistry Symposium, Tokyo, Japan, 2011.11.29-12.2 (ポスター発表)
- (12) Organocatalyzed Domino Process Based on the aza-Morita-Baylis-Hillman (aza-MBH) Reaction
Hirata, S.; Takizawa, S.; Inoue, N.; Sasai, H. The 1st Junior International Conference on Cutting-Edge Organic Chemistry in Asia, Xiamen, China, 2011.12.9-10 (口頭発表)
- (13) Organocatalyzed Domino Process Based on the aza-Morita-Baylis-Hillman (aza-MBH) Reaction
Takizawa, S.; Hirata, S.; Inoue, N.; Sasai, H. The 6th International Conference on Cutting-Edge Organic Chemistry in Asia (ICCEOCA-6) – Asian Core Program, The Chinese University of Hong Kong, China, 2011.12.11-15 (ポスター発表)
- (14) Enantioselective Cyclization of 4-Alkenoic Acids via an Oxidative Allylic C-H Esterification
Akita, M.; Tanigaki, Y.; Takenaka, K.; Takizawa, S.; Sasai, H. Aachen-Osaka Mini-Symposium, Aachen, Germany, 2011.12.13 (口頭発表)
- (15) 新規エナンチオ選択的触媒反応系の開拓
笹井宏明、北海道大学 GCOE, 第 17 回精密合成化学セミナージョイントシンポジウム「分子変換と機能開発の新機軸」、北海道大学札幌キャンパス、2011.12.19 (招待講演)
- (16) Catalytic Enantioselective Coupling of Phenanthrols
Kodera, J.; Takizawa, S.; Sasai, H. The 15th SANKEN International Symposium and The 10th SANKEN Nanotechnology Symposium, Osaka, Japan, 2012.1.12-13 (ポスター発表)
- (17) Intramolecular Enantioselective Rauhut-Currier Reaction
Nguyen, T. M.-N.; Takizawa, S.; Grossmann, A.; Enders, D.; Sasai, H. Aachen-Osaka Mini-Symposium, Osaka, Japan, 2012.3.12 (口頭発表)
- (18) Enantioselective C-C bond-forming reactions using vanadium(V) complexes
Takizawa, S.; Kodera, J.; Rajesh, D.; Katayama, T.; Sasai, H. 243rd ACS National Meeting, San Diego, USA, 2011.3.25-29 (ポスター発表)

3. 特許

該当無し

4. 学会・シンポジウム等の開催状況

該当無し

5. 受賞等

(1) 笹井宏明

Molecular Chirality Award 2011 Molecular Chirality Research Organization、2011.5.20

(2) 家喜健太 (修士2年)

Symposium on Molecular Chirality 2011 Poster Presentation Award Molecular Chirality Research Organization、2011.5.21

6. 新聞報道等

該当無し

7. 国民との科学・技術対話

大阪大学いちょう祭 (2012年5月2-3日) の一環として施設公開と「分子の世界で遊んでみよう」と題して実習。

8. 領域内の共同研究の準備・実施状況とその成果

(1) 共同研究先：京都大学化学研究所，中村・畠山研究室 (A01班，公募班員)

派遣人員：Gabr, R. K. M. (博士研究員)

派遣期間：2011.4.1-2011.12.31

共同研究内容：密度汎関数計算による反応機構解析

共同研究成果：DFT Study on 5-Endo-Trig-Type Cyclization of 3-Alkenoic Acids Using Pd-SPRIX Catalyst, Gabr, R. K.; Hatakeyama, T.; Takenaka, K.; Takizawa, S.; Okada, Y.; Nakamura, M.; Sasai, H. (論文投稿中)