

平成22年度 研究業績

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1. 発表論文等 (査読付き論文, 著書, 総説等の発表状況)

- (1) Chlorinative Cyclization of 1,6-Enynes by Enantioselective Palladium(II)/Palladium(IV) Catalysis
Takenaka, K.; Hashimoto, S.; Takizawa, S.; Sasai, H.* *Adv. Synth. Catal.* in press.
- (2) Pd(II)-SPRIX Catalyzed Enantioselective Construction of Pyrrolizines/Pyrroloindoles Employing Molecular Oxygen As the Sole Oxidant
Ramalingan, C.; Takenaka, K.; Sasai, H.* *Tetrahedron* in press.
- (3) 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.
- (4) Pd-Catalyzed 5-Endo-Trig-Type Cyclization of β,γ -Unsaturated Carbonyl Compounds: an Efficient Ring Closing Reaction to Give γ -Butenolides and 3-Pyrrolin-2-ones
Bajracharya, G. B.; Koranne, P. S.; Nadaf, R. N.; Gabr, R. K. M.; Takenaka, K.; Takizawa, S.; Sasai, H.* *Chem. Commun.* **2010**, *46*, 9064-9066.
- (5) Enantioselective Synthesis of Isoindolines: Organocatalyzed Domino Process Based on the aza-Morita-Baylis-Hillman (aza-MBH) Reaction
Takizawa, S.; Inoue, N.; Hirata, S.; Sasai, H.* *Angew. Chem. Int. Ed.* **2010**, *49*, 9725-9729.
- (6) Formal Total Synthesis of Ottelione Using Iridium-Catalyzed Oxidative Desymmetrization
Suzuki, T.; Ghazati, K.; Zhou, D.-Y.; Kato, T.; Sasai, H.* *Tetrahedron* **2010**, *66*, 7562-7568.
- (7) Enantioselective Wacker-Type Cyclization of 2-Alkenyl-1,3-Diketones Promoted by Pd-SPRIX Catalyst
Takenaka, K.; Mohanta, S. C.; Patil, M. L.; Rao, C. V. L.; Takizawa, S.; Suzuki, T.; Sasai, H.* *Org. Lett.* **2010**, *12*, 3480-3483.
- (8) Acid-Base Organocatalysts for the Aza-Morita-Baylis-Hillman Reaction of Nitroalkenes
Takizawa, S.; Horii, A.; Sasai, H.* *Tetrahedron: Asymmetry* **2010**, *21*, 891-894.
- (9) Enantioselective 6-Endo-Trig Wacker-type Cyclization of 2-Geranylphenols: Application to Facile Synthesis of (-)-Cordiachromene
Takenaka, K.; Tanigaki, Y.; Patil, M. L.; Rao, C. V. L.; Takizawa, S.; Suzuki, T.; Sasai, H.* *Tetrahedron: Asymmetry* **2010**, *21*, 767-770.

- (10) Asymmetric Synthesis of Chiral Spiro Bis(isoxazoline) and Spiro (Isoxazole-isoxazoline) Ligands
Takenaka, K.; Nagano, T.; Takizawa, S.; Sasai, H.* *Tetrahedron: Asymmetry* **2010**, *21*, 379-381.

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) Enantioselective Organocatalyzed aza-MBH Domino Process: Application to the Facile Synthesis of Tetrahydropyridines and Isoindolines
Takizawa, S.; Inoue, N.; Hirata, S.; Sasai, H. 241st ACS National Meeting, Anaheim, USA, 2011.3.27-31（口頭発表）.
- (2) Novel Oxidative Asymmetric Cyclizations Promoted by Pd-SPRIX Catalyst
Sasai, H. The 2010 International Chemical Congress of Pacific Basin Societies (Pacifichem 2010), Honolulu, Hawaii, USA, 2010.12.15-20（招待講演）.
- (3) Development of Chiral Bifunctional Organocatalysts
Sasai, H. The 2010 International Chemical Congress of Pacific Basin Societies (Pacifichem 2010), Honolulu, Hawaii, USA, 2010.12.15-20（招待講演）.
- (4) Enantioselective Oxidative Coupling of 2-Naphthols Using Dinuclear Vanadium Complex
Takizawa, S.; Katayama, T.; Doss, R.; Sasai, H. The 2010 International Chemical Congress of Pacific Basin Societies (Pacifichem 2010), Honolulu, Hawaii, USA, 2010.12.15-20（口頭発表）.
- (5) Oxidative Desymmetrization of Diols by Iridium Catalyst
Suzuki, T.; Ghazati, K.; Takatani, S.; Katoh, T.; Sasai, H. The 2010 International Chemical Congress of Pacific Basin Societies (Pacifichem 2010), Honolulu, Hawaii, USA, 2010.12.15-20（口頭発表）.
- (6) Enantioselective Synthesis of γ -Lactones via Intramolecular Wacker-type Cyclization Catalyzed by Pd-SPRIX
Akita, M.; Tanigaki, Y.; Takenaka, K.; Takizawa, S.; Sasai, H. The 2010 International Chemical Congress of Pacific Basin Societies (Pacifichem 2010), Honolulu, Hawaii, USA, 2010.12.15-20（ポスター発表）.

(7) DFT Study on 5-Endo-Trig Type Cyclization of β,γ -Unsaturated Carboxylic Acids Using Pd-SPRIX Catalyst

Gabr, R. K. M.; Bajracharya, G. B.; Lin, X.; Takenaka, K.; Takizawa, S.; Okada, Y.; Hatakeyama, T.; Nakamura, M.; Sasai, H. The 2010 International Chemical Congress of Pacific Basin Societies (Pacifichem 2010), Honolulu, Hawaii, USA, 2010.12.15-20 (ポスター発表).

(8) Enantioselective Aza-Morita-Baylis-Hillman (Aza-MBH) Domino Reactions Promoted by Acid-Base Organocatalyst

Inoue, N.; Takizawa, S.; Hirata, S.; Nguyen, T. M.-N.; Sasai, H. The 2010 International Chemical Congress of Pacific Basin Societies (Pacifichem 2010), Honolulu, Hawaii, USA, 2010.12.15-20 (ポスター発表).

(9) Bifunctional Organocatalyst Bearing (*S*)-1,1'-Spirobiindane As Chiral Backbone

Kiriyama, K.; Takizawa, S.; Sasai, H. The 2010 International Chemical Congress of Pacific Basin Societies (Pacifichem 2010), Honolulu, Hawaii, USA, 2010.12.15-20 (ポスター発表).

(10) Development of Bifunctional Organocatalysts for Enantioselective Morita-Baylis-Hillman Reaction

Murakami, S.; Takizawa, S.; Sasai, H. The 2010 International Chemical Congress of Pacific Basin Societies (Pacifichem 2010), Honolulu, Hawaii, USA, 2010.12.15-20 (ポスター発表).

(11) One-Pot Preparation of Chiral Dinuclear Vanadium(V) Complex

Takizawa, S.; Rajesh, D.; Katayama, T.; Sasai, H. 7th International Symposium on Chemistry and Biological Chemistry of Vanadium, Toyama, Japan, 2010.10.6-9 (招待講演).

(12) Novel Catalytic Enantioselective Reactions Promoted by a Pd-SPRIX Complex

Sasai, H. Japan-Korea Symposium on Organometallic Chemistry, Nara, Japan, 2010.10.1-3 (口頭発表).

(13) Novel Asymmetric Domino Reactions Promoted by Acid-Base Organocatalysts

Sasai, H. 3rd Aachen-Osaka Joint Symposium, Aachen, Germany, 2010.9.6-7 (口頭発表).

(14) Enantioselective Pd(II)/Pd(IV) Catalysis Using Spiro Bis(isoxazoline) Ligand

Takenaka, K.; Tsujihara, T.; Onitsuka, K.; Hatanaka, M.; Sasai, H. The 6th Tokyo Conference on Advanced Catalytic Science and Technology & The 5th Asia Pacific Congress on Catalysis (TOCAT6/APCAT5), Sapporo, JAPAN, 2010.7.18-23 (口頭発表).

(15) 二重活性化型不斉触媒による炭素-炭素結合生成反応

笹井宏明, 日本プロセス化学会 2010 サマーシンポジウム, タワーホール船堀, 東京, 2010.7.15-16 (招待講演).

(16) Enantioselective Domino Reactions Promoted by Acid-Base Organocatalysts

Takizawa, S.; Inoue, N.; Hirata, S.; Sasai, H. 22nd International Symposium on Chirality (ISCD-22), Sapporo, JAPAN, 2010.7.12-15 (口頭発表).

3. 特許

(1) キラルスピロトリアゾール化合物, その製造方法及びその用途

国立大学法人大阪大学, 笹井宏明, 滝澤忍, 吉田泰志
特願 2011-053422, 2011.3.10

4. 学会・シンポジウム等の開催状況

(1) Pacificchem2010 Symposium “Metal Catalysis for Asymmetric Synthesis” Honolulu, 2010.12.15-17 (笹井宏明, オーガナイザー).

(2) Japan-Korea Symposium on Organometallic Chemistry (sponsored by JSPS Asian Core Program), Nara, Japan, 2010.10.1-3 (笹井宏明, オーガナイザー).

(3) 7th International Symposium on the Chemistry and Biological Chemistry of Vanadium, Toyama, Japan, 2010.10.6-9 (笹井宏明, 組織委員).

(4) Symposium on Molecular Chirality, Sapporo, Japan, 2010.7.11-12 (笹井宏明, 組織委員).

5. 受賞等

該当なし

6. 新聞報道等

該当なし

7. 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 3 年)

派遣期間：2010.4.1–2011.3.31

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：学会発表：DFT study on 5-endo-trig type cyclization of β,γ -unsaturated carboxylic acids using Pd-SPRIX catalyst

Gabr, R. K. M.; Bajracharya, G. B.; Lin, X.; Takenaka, K.; Takizawa, S.; Okada, Y.;

Hatakeyama, T.; Nakamura, M.; Sasai, H. The 2010 International Chemical Congress of Pacific Basin Societies (Pacifichem 2010), Honolulu, Hawaii, USA, 2010.12.15-20 (ポスター発表).

8. その他特記事項

(1) Asian Core Program Lectureship Award による講演を台湾にて行った.

2010.10.13-19, Academia Sinica (Taipei), National Tsing Hua University (Hsinchu), National Sun Yat-sen University (Kaohsiung)

(2) Molecular Chirality Award 2011 に内定. 授賞式および受賞講演は，東工大での Symposium on Molecular Chirality (2011.5.20-21) の予定.