

平成23年度 研究業績

大嶋孝志 (九州大学大学院薬学研究院、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) Platinum-Catalyzed Direct Amination of Allylic Alcohols with Aqueous Ammonia for Selective Synthesis of Primary Allylamines  
Das, K.; Shibuya, R.; Nakahara, Y.; Germain, N.; Ohshima, T.;\* Mashima, K.\* *Angew. Chem. Int. Ed.* **2012**, *51*, 150–154.
- (2) Transesterification of  $\alpha$ -Amino Esters Catalyzed by a Tetranuclear Zinc Cluster,  $Zn_4(OCOFCF_3)_6O$   
Maegawa, Y.; Agura, K.; Hayashi, Y.; Ohshima, T.;\* Mashima, K.\* *Synlett* **2012**, *23*, 137–141.
- (3) Efficient cyclic carbonate synthesis catalyzed by zinc cluster systems under mild conditions.  
Yang, Y.; Hayashi, Y.; Fujii, Y.; Nagano, T.; Kita, Y.; Ohshima, T.; Okuda, J.; Mashima, K.\* *Catal. Sci. Tech.* **2012**, *2*, 509–513.
- (4) Additive Effect of *N*-Heteroaromatics on Transesterification Catalyzed by Tetranuclear Zinc Cluster  
Maegawa, Y.; Ohshima, T.;\* Hayashi, Y.; Agura, K.; Iwasaki, T.; Mashima, K. *ACS Catal.* **2011**, *1*, 1178–1182.
- (5) Direct substitution of the hydroxy group with highly functionalized nitrogen nucleophiles catalyzed by Au(III).  
Ohshima, T.;\* Nakahara, Y.; Ipposhi, J.; Miyamoto, Y.; Mashima, K.\* *Chem. Commun.* **2011**, *47*, 8322–8324.
- (6)  $C_1$ -Symmetric Rh-Phebox-Catalyzed Asymmetric Alkynylation of  $\alpha$ -Keto Ester.  
Ohshima, T.;\* Kawabata, T.; Takeuchi, Y.; Kakinuma, T.; Iwasaki, T.; Yonezawa, T.; Murakami, H.; Nishiyama, H.; Mashima, K.\* *Angew. Chem. Int. Ed.* **2011**, *50*, 6296–6300.
- (7) Trifluoroacetic Acid Adduct of Trifluoroacetate-Bridged  $\mu_4$ -Oxo-Tetranuclear Zinc Cluster,  $Zn_4(OCOFCF_3)_6O \cdot CF_3CO_2H$ : Synthesis under Mild Conditions and Catalytic Transesterification and Oxazoline Formation.  
Hayashi, Y.; Ohshima, T.;\* Fujii, Y.; Matsushima, Y.; Mashima, K.\* *Catal. Sci. Tech.* **2011**, *1*, 230–233.

[著書]

Esterification

Iwasaki, T.; Maegawa Y.; Ohshima T.; Mashima K. In *Kirk-Othmer Encyclopedia of Chemical Technology*; John Wiley & Sons: 2012.

核金属錯体を用いた環境調和型触媒研究の動向

大嶋孝志 In *触媒年鑑：触媒技術の動向と展望 2011*; 触媒学会出版委員会 年鑑出版実行委員会 編; 触媒学会: 東京, 2011; 第1編4章4節, pp 30-39.

Catalytic Asymmetric 1,2-Alkynylation

Ohshima, T. In *Comprehensive Chirality*; Yamamoto, H., Carreira, E., Eds.; Elsevier: Oxford, 2011; Chapter 4.18.

[和文雑誌]

有機化学者の計算化学への取り組み CONFLEX と Gaussian の利用

大嶋孝志, Wako Infomatic World, in press.

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 New Direct Catalytic Reactions Using Tetranuclear Zinc Clusters

Ohshima, T. 14th Asian Chemical Congress (14 ACC), Bangkok, Thailand, 2011.9.5-8 (招待講演) .

(2)  $C_1$ -Symmetric Rh-Phebox-Catalyzed Asymmetric Alkynylation of  $\alpha$ -Keto Ester

Ohshima, T. The 1st Junior International Conference on Cutting-Edge Organic Chemistry in Asia (1st JACP), Xiamen, China, 2011.12.9-11 (招待講演) .

(3) Direct Amination of Allylic Alcohols by Amines and Ammonia Catalyzed by Platinum Complexes

Mashima, K.; Nakahara, Y.; Das, K.; Ohshima, T. 19th EuCheMS International Conference on Organometallic Chemistry, Toulouse, France, 2011.7.5. (口頭発表)

(4)  $C_1$ -Symmetric Rh/Phebox-Catalyzed Asymmetric Alkynylation of  $\alpha$ -Ketoester

Kawabata, T.; Takeuchi, Y.; Ohshima, T.; Mashima, K. The 2nd SeleCa Minisymposium, RWTH Aachen, Germany, 2011.12.13. (口頭発表)

(5) Zinc and Cobalt Complexes with Chelating Nitrogen Ligands as Catalysts for Transesterification

Hayashi, Y.; Maegawa, Y.; Ohshima, T.; Mashima, K. The 11th Global COE International Symposium: Bio-Environmental Chemistry, Osaka, Japan, 2011.12.20. (口頭発表)

- (6)  $C_1$ -Symmetric Rh-Phebox-Catalyzed Asymmetric Alkynylation of Keto Ester  
Ohshima, T.; Kawabata, T.; Takeuchi, Y.; Nishiyama, H.; Mashima, K. Gordon Research Conferences, Organic Reactions & Processes, RI, USA, 2011.7.17-22. (ポスター発表)
- (7)  $C_1$ -Symmetric Rh-Phebox Complexes Catalyzed Asymmetric Alkynylation of  $\alpha$ -Ketoester  
Kawabata, T.; Takeuchi, Y.; Ohshima, T.; Mashima, K. 16th IUPAC International Symposium on Organometallic Chemistry Directed Towards Organic Synthesis (OMCOS 16), Shanghai, China, 2011.7.25. (ポスター発表)
- (8) Mechanistic Studies on Transesterification Catalyzed by Tetranuclear Zinc Cluster  
Hayashi, Y.; Maegawa, Y.; Agura, K.; Iwasaki, T.; Ohshima, T.; Mashima, K. 16th IUPAC International Symposium on Organometallic Chemistry Directed Towards Organic Synthesis (OMCOS 16), Shanghai, China, 2011.7.25. (ポスター発表)
- (9) Effects of Additives on Tetranuclear Zinc Cluster Catalyzed Reaction  
Maegawa, Y.; Agura, K.; Hayashi, Y.; Iwasaki, T.; Ohshima, T.; Mashima, K. The 2nd International Symposium on Process Chemistry (ISPC2011), Kyoto, Japan, 2011.8.10-12. (ポスター発表)
- (10) Radiolabeled  $\gamma$ -polyglutamic acid complex for the detection of sentinel lymph node  
Sano, K.; Iwamiya, Y.; Kurosaki, T.; Ogawa, M.; Magata, Y.; Sasaki, H.; Ohshima, T.; Maeda, M.; Mukaia1, T. The 2011 World Molecular Imaging Congress, San Diego, CA, USA, 2011.8.10-12. (ポスター発表)
- (11) Platinum-Catalyzed Direct Substitution of Allylic Alcohols under Mild Conditions  
Ohshima, T.; Das, K.; Nakahara, Y.; Shibuya, R.; Mashima, K. The Seventh International Symposium on Integrated Synthesis (ISIS-7), Kobe, Japan, 2011.10.9-10. (ポスター発表)
- (12) Transesterification Catalyzed by Zinc and Cobalt Complexes with Chelating Nitrogen Ligands  
Hayashi, Y.; Maegawa, Y.; Ohshima, T.; Mashima, K. International Symposium on Organometallic Chemistry (ISOMC 2011), Osaka, Japan, 2011.11.11. (ポスター発表)
- (13) Efficient Cyclic Carbonate Synthesis Catalyzed by Zinc Cluster Systems under Mild Conditions  
Yang, Y.; Hayashi, Y.; Fujii, Y.; Nagano, T.; Kita, Y.; Okuda, J.; Ohshima, T.; Mashima, K. International Symposium on Organometallic Chemistry (ISOMC 2011), Osaka, Japan, 2011.11.11. (ポスター発表)
- (14) Drastic Additive Effect of N-Heteroaromatics on Tetranuclear Zinc Cluster-Catalyzed Reactions  
Ohshima, T.; Maegawa, Y.; Hayashi, Y.; Agura, K.; Mashima, K. 8th AFMC

International Medicinal Chemistry Symposium (AIMECS11), Tokyo, Japan, 2011.11.29-12.2. (ポスター発表)

(15)  $C_1$ -Symmetric Rh-Phebox-Catalyzed Asymmetric Alkynylation of  $\alpha$ -Keto Ester

Ohshima, T.; Kawabata, T.; Takeuchi, Y.; Morimoto, H.; Nishiyama, H.; Mashima, K. The 6th International Conference on Cutting-Edge Organic Chemistry in Asia (ICCEOCA-6), Hong Kong, China, 2011.12.11-15. (ポスター発表)

(16)  $C_1$ -Symmetric Rh-Phebox Complexes Catalyzed Asymmetric Alkynylation of  $\alpha$ -Ketoester

Kawabata, T.; Takeuchi, Y.; Ohshima, T.; Mashima, K. The 11th Global COE International Symposium: Bio-Environmental Chemistry, Osaka, Japan, 2011.12.20. (ポスター発表)

### 3. 特許

(1) 脱 CO 方法

国立大学法人九州大学, 大嶋孝志、森本浩之、清水悠平  
特開 2012-046588, 2012.3.2.

(2) G2/M 期停止及び細胞死を誘導するベンゾヒドラジド誘導体

国立大学法人九州大学, 藤田雅俊、大嶋孝志、森本浩之  
特開 2011-234309, 2011.10.25.

### 4. 学会・シンポジウム等の開催状況

(1) 万有福岡シンポジウム, 九州大学, 2011.5.21 (大嶋孝志, Co-Organizer).

### 5. 受賞等

(1) 森本浩之 (助教)

第 28 回井上研究奨励賞、2011.12.16

(2) 森本浩之 (助教)

2011 年度有機合成化学協会高砂香料工業研究企画賞、2011.12.6

### 6. 新聞報道等

特になし

### 7. 国民との科学・技術対話

特になし

## 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：理化学研究所，魚住研究室（A01 班，公募班員）

派遣人員（派遣）：大嶋孝志（教授），澁谷亮三（修士1年）

派遣期間（派遣）：2011.11.14-16

共同研究内容：高分子白金触媒膜導入型マイクロデバイスを用いたアリルアルコールの直接アミノ化反応

共同研究成果：継続中