

## 研究期間全年度 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) Synthesis of 7,8-Dehydropurpurin Dimers and Their Conversion to Conformationally Constrained b-to-b Vinylene-Bridged Porphyrin Dimers  
Fukui, N.; Yorimitsu, H.;\* Lim, J. M.; Kim, D.;\* Osuka, A.\* *Angew. Chem. Int. Ed.* **2014**, *53*, in press, DOI: 10.1002/anie.201400632.
- (2) Control of the Conformational Dynamics of *meso-meso* Vinylene-bridged Zn(II) Porphyrin Dimers through Diamine Coordination  
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- (3) Excited-State Electronic Couplings in a 1,3-Butadiyne-Bridged Zn(II)Porphyrin Dimer and Trimer  
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- (4) Facile Preparation of  $\beta$ -Haloporphyrins as Useful Precursors of  $\beta$ -Substituted Porphyrins  
Fujimoto, K.; Yorimitsu, H.;\* Osuka, A.\* *Org. Lett.* **2014**, *16*, 972–975.
- (5) Synthesis and Catalytic Activities of Porphyrin-based PCP Pincer Complexes  
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- (6) Palladium-Catalyzed Tetraarylation of 5,15-Dialkylporphyrins with Aryl Bromides  
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- (7) Amination of *meso*-Bromoporphyrins and 9-Haloanthracenes with Diarylamines Catalyzed by a Pd-PEPPSI Complex  
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- (8) *meso-meso*-Linked Subporphyrin Dimer  
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- (9) Practical and Scalable Syntheses of Substituted Ketene Dithioacetal Monoxides  
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- (10) Oxidative Fusion Reactions of *meso*-(Diarylamino)porphyrins  
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- (11) Demetalation of Metal Porphyrins via Magnesium Porphyrins by Reaction with Grignard Reagents  
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- (12) TIPS-TTF as a Precursor for Low-Symmetry TTF Derivatives: Steric Protection Strategy in the Regioselective C-H Modification of TTF  
Ueno, R.; Fujino, D.; Yorimitsu, H.;\* Osuka, A.\* *Chem. Eur. J.* **2013**, *19*, 7156–7161.
- (13) Copper-Catalyzed Extended Pummerer Reactions of Ketene Dithioacetal Monoxides with Alkynyl Sulfides and Ynamides with an Accompanying Oxygen Rearrangement  
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- (14) Direct Arylation of Porphyrin with *p*-Extended Aryl Bromides under Ligand-Free Fagnou-Hartwig Conditions  
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- (17) 拡張 Pummerer 型反応を駆使したヘテロ芳香族化合物の合成  
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- (22) Synthesis of a Library of Fluorescent 2-Aryl-3-trifluoromethylnaphthofurans from Naphthols by Using a Sequential Pummerer Annulation/Cross-coupling Strategy and Their Photophysical Properties  
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- (23) Synthesis of 1,2-Disubstituted Cyclopentenes by Palladium-Catalyzed Reaction of Homopropargyl-Substituted Dicarboxyl Compounds with Organic Halides via 5-endo-dig Cyclization  
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- (26) Palladium-Catalyzed Alkynylthiolation of Alkynes with Triisopropylsilylethynyl Sulfide  
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Kobayashi, T.; Yorimitsu, H.;\* Oshima, K.\* *Chem. Asian J.* **2011**, *6*, 669–673.
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Kobatake, T.; Fujino, D.; Yoshida, S.; Yorimitsu, H.;\* Oshima, K.\* *J. Am. Chem. Soc.* **2010**, *132*, 11838–11840.
- (40) Palladium-Catalyzed Intramolecular Carboacetoxylation of 4-Pentenyl-Substituted Malonate Esters with Iodobenzene Diacetate  
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Murakami, K.; Yorimitsu, H.;\* Oshima, K.\* *Chem. Eur. J.* **2010**, *16*, 7688–7691.
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- (2) スミス基礎有機化学 (第三版) 上  
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- (3) The Chemistry of Organomanganese Ate Complexes  
Yorimitsu, H.; Oshima, K. In *The Chemistry of Organomanganese Compounds*; Marek, I., Rappoport, Z., Eds.; PATAI'S Chemistry of Functional Groups; John Wiley & Sons: Chichester, 2011; Chapter 10, pp 585-622.
- (4) Free Radical Reactions  
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Yorimitsu, H. In *Encyclopedia of Radicals in Chemistry, Biology and Materials*; Chatgililoglu, C., Studer, A., Eds.; John Wiley & Sons: Chichester, 2012; Volume 1, Chapter 35, pp 1003-1018.
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## 和文雑誌

- (1) 白浜温泉での国際会議  
依光英樹, *化学と工業* **2012**, 65, 337.
- (2) HTS で幸運をたくり寄せる?  
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## 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) ポルフィリン多量体の化学  
依光英樹 第1回光科学異分野横断セミナー, 堺, 2014.2.13 (招待講演).
- (2) ポルフィリンオリゴマーの時空間集積型一挙合成  
依光英樹 新学術領域研究「反応集積化の合成化学」平成25年度第2回成果報告会, 東京, 2014.1.25 (依頼講演).
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- (5) Oxidative Fusions of *meso*-(Diarylamino)porphyrins  
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- (7) Synthesis of New Porphyrin-Based  $\pi$  Systems by Radical Reactions  
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- (19) Efficient Synthesis of Low-Symmetrical Tetrathiafulvalenes Using a Silyl Protecting Group  
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- (28) Efficient Access to Multiarylated Tetrathiafulvalenes by Palladium-Catalyzed C–H Direct Arylation and Their Photophysical and Electrochemical Properties  
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Yamamoto, Y.; Tanaka, T.; Yorimitsu, H.; Osuka, A. 7th International Conference on Porphyrins and Phthalocyanines, Jeju, Korea, 2012.7.1-6 (ポスター発表).

- (37) Copper-Catalyzed Reaction of Ketene Dithioacetal Monoxide with Alkynyl Sulfide  
Murakami, K.; Imoto, J.; Matsubara, H.; Yoshida, S.; Yorimitsu, H.; Oshima, K. 10th International Conference on Heteroatom Chemistry, Uji, 2012.5.20-25 (ポスター発表).
- (38)パラジウム触媒による小員環の構築  
依光英樹 金沢大学薬学シンポジウム 2011—有機合成の最前線—, 金沢, 2012.2.10 (招待講演).
- (39) 機能性  $\pi$  共役系分子周辺部の時空間集積型アリール化  
依光英樹 新学術領域研究「反応集積化の合成化学」平成 23 年度第 2 回成果報告会, 大阪, 2012.1.28-29 (依頼講演).
- (40) Palladium-Catalyzed Direct Arylation of Functional Aromatics  
Yorimitsu, H. 2012 Taiwan-Japan Symposium of Frontier Research on Design and Applications of Fine Chemicals, Taipei, Taiwan, 2012.1.6 (招待講演).
- (41) 機能性  $\pi$  共役系分子周辺部の直接的多重アリール化  
依光英樹 グローバル COE 第八回有機元素化学セミナー, 京都, 2011.11.21-22 (招待講演).
- (42) Palladium-Catalyzed Direct Arylation of Porphyrins  
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- (43) パラジウム触媒による複数結合の一挙構築を基盤とする新分子創製  
依光英樹 第 38 回有機反応懇談会, 大阪, 2011.8.3 (招待講演).
- (44)  $\pi$  共役系分子の創出を指向した反応開発  
依光英樹 愛媛大学工学部応用化学科セミナー第 167 回ミニシンポジウム, 松山, 2011.7.29 (招待講演).
- (45) Rhodium-Catalyzed Arylzincation of Terminal Allenes Providing Allylzinc Reagents and Its Application to Versatile Three-Component Coupling Reaction  
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- (46) Synthesis of Methylenecyclopropanes by Palladium-Catalyzed Reaction of Propargyl-Substituted Malonate Esters with Aryl Halides by Anti-Carbopalladation Pathway  
Fujino, D.; Yorimitsu, H.; Oshima, K. 5th ChemComm International Symposium, Kyoto, 2011.5.16 (ポスター発表).
- (47) Palladium(II)-Triggered Rearrangement of Heptaphyrins to N-Confused Porphyrins  
Yoneda, T.; Saito, S.; Yorimitsu, H.; Osuka, A. 5th ChemComm International Symposium, Kyoto, 2011.5.16 (ポスター発表).

- (48) Cobalt-Catalyzed Benzylzincation of Alkynes  
Murakami, K.; Yorimitsu, H.; Oshima, K. 16th IUPAC International Symposium on Organometallic Chemistry Directed Towards Organic Synthesis, Shanghai, China, 2011.7.24-28 (ポスター発表).
- (49) Synthesis of Methylenecyclopropanes by Palladium-Catalyzed Reaction of Propargyl-Substituted Malonate Esters with Aryl Halides by Anti-Carbopalladation Pathway  
Fujino, D.; Yorimitsu, H.; Oshima, K. 16th IUPAC International Symposium on Organometallic Chemistry Directed Towards Organic Synthesis, Shanghai, China, 2011.7.24-28 (ポスター発表).
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Yoneda, T.; Saito, S.; Yorimitsu, H.; Osuka, A. 14th International Symposium on Novel Aromatic Compounds, Eugene, Oregon, USA, 2011.7.24-29 (ポスター発表).
- (51) Synthesis of Porphyrin Dimers via Pinacol Coupling–Rearrangement  
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- (52) Silver-Catalyzed Benzylolation and Allylation of Tertiary Alkyl Bromides with Organozinc Reagents  
Mitamura, Y.; Asada, Y.; Murakami, K.; Someya, H.; Yorimitsu, H.; Oshima, K. 5th Pacific Symposium on Radical Chemistry, Shirahama, 2011.9.25-28 (ポスター発表).
- (53) Intramolecular Reductive Addition to 2-(2,2,2-Trifluoroethylidene)-1,3-dithiane 1-Oxide: Experimental and Theoretical Studies  
Nakayama, R.; Mastubara, H.; Fujino, D.; Kobatake, T.; Yoshida, S.; Yorimitsu, H.; Oshima, K. 5th Pacific Symposium on Radical Chemistry, Shirahama, 2011.9.25-28 (ポスター発表).
- (54) Synthesis of Porphyrins Dimers by Sequential SmI<sub>2</sub>-Promoted Pinacol Coupling and Acid-Mediated Rearrangement  
Tokuji, S.; Maeda, C.; Yorimitsu, H.; Osuka, A. 5th Pacific Symposium on Radical Chemistry, Shirahama, 2011.9.25-28 (ポスター発表).
- (55) Palladium-Catalyzed Direct Arylation of Porphyrins  
Kawamata, Y.; Tokuji, S.; Yorimitsu, H.; Osuka, A. 7th International Symposium on Integrated Synthesis, Kobe, Japan, 2011.10.9-10 (ポスター発表).
- (56) Synthesis of Porphyrin Dimers via Pinacol Coupling–Rearrangement  
Tokuji, S.; Maeda, C.; Yorimitsu, H.; Osuka, A. Yonsei International Symposium on Nano-Bio Molecular Assembly, Seoul, Korea, 2011.10.27-29 (口頭発表).

- (57) Palladium(II)-Triggered Rearrangement of Heptaphyrins to N-Confused Porphyrins  
Yoneda, T.; Saito, S.; Yorimitsu, H.; Osuka, A. Yonsei International Symposium on Nano-Bio Molecular Assembly, Seoul, Korea, 2011.10.27-29 (口頭発表).
- (58) Synthesis of Methylenecyclopropanes by Palladium-Catalyzed Reaction of Propargyl-Substituted Malonate Esters with Aryl Halides by Anti-Carbopalladation Pathway  
Fujino, D.; Yorimitsu, H.; Oshima, K. Yonsei International Symposium on Nano-Bio Molecular Assembly, Seoul, Korea, 2011.10.27-29 (口頭発表).
- (59) Rhodium-Catalyzed Arylzincation of Terminal Allenes Providing Allylzinc Reagents and Its Application to Versatile Three-Component Coupling Reaction  
Murakami, K.; Yoshida, Y.; Yorimitsu, H.; Oshima, K. Yonsei International Symposium on Nano-Bio Molecular Assembly, Seoul, Korea, 2011.10.27-29 (口頭発表).
- (60) Unsaturated Alcohols as Surrogates of Organometallic Reagents in Palladium-Catalyzed C-C Bond Formation  
Yorimitsu, H. The Fifth Mitsui Chemicals International Symposium on Catalysis Science (MICS 2011), Kisarazu, Japan, 2011.3.9-10 (三井化学触媒科学奨励賞受賞講演) .
- (61) Unsaturated Alcohols as Surrogates of Organometallic Reagents in Palladium-Catalyzed C-C Bond Formation  
Yorimitsu, H. 2011 KAIST-Kyoto University Chemistry Symposium, Kyoto, Japan, 2011.2.17-18 (招待講演) .
- (62) Catalytic Allylation of Alkyl Halides with Allylic Metals Creating Quaternary Carbons  
Yorimitsu, H.; Oshima, K. The 2010 International Chemical Congress of Pacific Basin Societies (Pacifichem 2010), Honolulu, Hawaii, USA, 2010.12.15-20 (招待講演) .
- (63) Pd-Catalyzed Selective Reactions Utilizing Tertiary Unsaturated Alcohols  
Yorimitsu, H. 1st International Collaborative and Cooperative Chemistry Symposium, Singapore, 2010.11.15-16 (招待講演) .
- (64) Carbometalation of C-C Multiple Bonds under Cobalt, Chromium, or Rhodium Catalysis  
Yorimitsu, H. 9th International Symposium on Carbanion Chemistry (ISCC-9), Florence, Italy, 2010.7.20-24 (基調講演) .
- (65) Synthesis of Organophosphorus and Organosulfur Compounds via Radical Processes  
Yorimitsu, H. EUCHEM Conference on Organic Free Radicals, Bologna, Italy, 2010.6.28-7.2 (招待講演) .
- (66) Palladium-Catalyzed Allylation of Aryl Halides with Homoallyl Alcohols Bearing a Trisubstituted Double Bond: Application to Chirality Transfer from Hydroxylated Carbon to Benzylic One

- Wakabayashi, R.; Fujino, D.; Hayashi, S.; Yorimitsu, H.; Oshima, K. The 6th International Symposium on Integrated Synthesis (ISIS-6), Maiko Villa Kobe, Kobe, Japan, 2010.10.23-24 (ポスター発表).
- (67) Rhodium-Catalyzed Arylzincation of Terminal Allenes Providing Allylzinc Reagents and Its Application to Versatile Three-Component Coupling Reaction  
Yoshida, Y.; Murakami, K.; Yorimitsu, H.; Oshima, K. The 6th International Symposium on Integrated Synthesis (ISIS-6), Maiko Villa Kobe, Kobe, Japan, 2010.10.23-24 (ポスター発表).
- (68) Palladium-Catalyzed Addition of Silyl-Substituted Chloroalkynes to Terminal Alkynes  
Wada, T.; Iwasaki, M.; Kondoh, A.; Yorimitsu, H.; Oshima, K. The 6th International Symposium on Integrated Synthesis (ISIS-6), Maiko Villa Kobe, Kobe, Japan, 2010.10.23-24 (ポスター発表).
- (69) Silver-Catalyzed Benzoylation and Allylation of Tertiary Alkyl Bromides with Organozinc Reagents  
Mitamura, Y.; Asada, Y.; Murakami, K.; Someya, H.; Yorimitsu, H.; Oshima, K. 9th International Symposium on Carbanion Chemistry (ISCC-9), Florence, Italy, 2010.7.20-24 (ポスター発表).
- (70) Palladium-Catalyzed Intramolecular Carboacetoxylation of 4-Pentenyl-Substituted Malonate Esters  
Fujino, D.; Yorimitsu, H.; Oshima, K. 9th International Symposium on Carbanion Chemistry (ISCC-9), Florence, Italy, 2010.7.20-24 (ポスター発表).
- (71) Synthesis of Arenes Bearing a Multisubstituted Allyl Group from Aryl Halides and Homoallyl Alcohols via Palladium-Catalyzed Retro-Allylation  
Iwasaki, M.; Yorimitsu, H.; Oshima, K. 9th International Symposium on Carbanion Chemistry (ISCC-9), Florence, Italy, 2010.7.20-24 (ポスター発表).
- (72) BF<sub>3</sub>-Mediated Reaction of (1-Alkynyl)dicarbonylcyclopentadienylirons with Imines: Exploring New Possibility of Organoiron Complexes in Organic Synthesis  
Nakaya, R.; Yasuda, S.; Yorimitsu, H.; Oshima, K. 9th International Symposium on Carbanion Chemistry (ISCC-9), Florence, Italy, 2010.7.20-24 (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

- (1) 10<sup>th</sup> International Symposium on Carbanion Chemistry, Kyoto, 2013.9.23–26, 依光英樹, Secretary General
- (2) ICPP 7 Satellite Symposium at Kyoto: Functions and Structures of Porphyrins and Related Molecules, Kyoto, 2012.6.29, 依光英樹, Organizing Committee Member
- (3) 5th Pacific Symposium on Radical Chemistry, Shirahama, 2011.9.25-28, 依光英樹, Secretary General

#### 5 . 受賞等

- (1) 藤野大士 (博士 3 年)  
優秀ポスター賞 第 60 回有機金属討論会, 2013.9.12 -14.
- (2) 村上慧 (博士研究員)  
2012 Reaxys PhD Prize Finalist Elsevier, 2012.5.30
- (3) 村上慧 (博士研究員)  
学生講演賞 日本化学会第 92 春季年会, 2012.4.23
- (4) 藤野大士 (博士 2 年)  
学生講演賞 日本化学会第 92 春季年会, 2012.4.23
- (5) 依光英樹 (A03 班, 公募班員)  
平成 23 年度科学技術分野の文部科学大臣表彰若手科学者賞 文部科学省、2011.4.20
- (6) 岩崎真之 (現岡山大学大学院自然科学研究科助教)  
2011 Reaxys PhD Prize Finalist Elsevier, 2011.5.26 [受賞対象の博士論文の共著者]
- (7) 村上慧 (博士 3 年)  
Best ChemCommun Poster Prize 5th ChemComm International Symposium, 2011.5.16
- (8) 藤野大士 (博士 1 年)  
IUPAC Best Poster Award 16th IUPAC International Symposium on Organometallic Chemistry Directed Towards Organic Synthesis, 2011.7.24-28
- (9) 依光英樹 (A03 班, 公募班員)  
三井化学触媒科学奨励賞, 三井化学, 2011.3.9

#### 6 . 新聞報道等

- (1) Asian J. Org. Chem.誌の Frontispiece としてハイライト  
Organometallic Approaches for Direct Modification of Peripheral C-H Bonds in Porphyrin Cores. Yorimitsu, H.;\* Osuka, A.\* *Asian J. Org. Chem.* **2013**, 2, 356–373.

- (2) Asian J. Org. Chem.誌の Cover としてハイライト  
Direct Arylation of Porphyrin with p-Extended Aryl Bromides under Ligand-Free Fagnou-Hartwig Conditions. Yamamoto, Y.; Tokuji, S.; Tanaka, T.; Yorimitsu, H.;\* Osuka, A.\* *Asian J. Org. Chem.* **2013**, 2, 320–324.
- (3) Chem. Eur. J.誌の Cover としてハイライト  
Demetalation of Metal Porphyrins via Magnesium Porphyrins by Reaction with Grignard Reagents. Murakami, K.; Yamamoto, Y.; Yorimitsu, H.;\* Osuka, A.\* *Chem. Eur. J.* **2013**, 19, 9123–9126.
- (4) Asian J. Org. Chem.誌の Cover としてハイライト  
Amination of *meso*-Bromoporphyrins and 9-Haloanthracenes with Diarylamines Catalyzed by a Pd-PEPSI Complex. Suzuki, Y.; Fukui, N.; Murakami, K.; Yorimitsu, H.;\* Osuka, A.\* *Asian J. Org. Chem.* **2013**, 2, 1066–1071.
- (5) 低温物質科学研究センター誌の表紙としてハイライト  
機能性  $\pi$  共役系分子の直接的多重アリール化 依光英樹,\* 大須賀篤弘,\* 京都大学低温物質科学研究センター誌, **2012**, 20, 9–17.
- (6) Angew. Chem. Int. Ed.誌の Inside Cover としてハイライト  
Preferential Formation of Cyclic Trimers by Palladium-Catalyzed Oxidative Coupling of 2,18-Diethynylporphyrins. Tokuji, S.; Yorimitsu, H.;\* Osuka, A.\* *Angew. Chem. Int. Ed.* **2012**, 51, 12357–12361.
- (7) Chem. Eur. J.誌の Frontispiece としてハイライト  
Direct Arylation of *meso*-Formyl Porphyrin. Tokuji, S.; Awane, H.; Yorimitsu, H.;\* Osuka, A.\* *Chem. Eur. J.* **2013**, 19, 64–68.
- (8) 化学ウェブサイト ChemStation でのインタビュー「心に残る反応・分子を見つけたい」  
<http://www.chem-station.com/interviews/2013/03/19.html>
- (9) Most-published principal authors in Chemistry—An Asian Journal since the first issue in 2006.  
Hideki Yorimitsu , *Chem. Asian J.* **2011**, 6, 4–7 , 2010.12.22
- (10) **Highlighted as a Hot Paper in Angew. Chem. Int. Ed.**  
Allyl-, Allenyl-, and Propargyl-Transfer Reactions through Cleavage of C–C Bonds Catalyzed by an N-Heterocyclic Carbene/Copper Complex: Synthesis of Multisubstituted Pyrroles. Sai, M.; Yorimitsu, H.; Oshima, K. *Angew. Chem. Int. Ed.* **2011**, 50, in press.

- (11) **Selected by the Editorial Board of Synfacts** (*Synfacts* **2010**, 1225.)  
Synthesis of 3-Trifluoromethylbenzo[*b*]furans from Phenols via Direct *Ortho* Functionalization by Extended Pummerer Reaction. Kobatake, T.; Fujino, D.; Yoshida, S.; Yorimitsu, H.; Oshima, K. *J. Am. Chem. Soc.* **2010**, *132*, 11838–11840.
- (12) **Selected as Highlight in Org. Proc. Res. Dev.** (*Org. Proc. Res. Dev.* **2011**, *15*, 2–9.)  
Synthesis of 3-Trifluoromethylbenzo[*b*]furans from Phenols via Direct *Ortho* Functionalization by Extended Pummerer Reaction. Kobatake, T.; Fujino, D.; Yoshida, S.; Yorimitsu, H.; Oshima, K. *J. Am. Chem. Soc.* **2010**, *132*, 11838–11840.
- (13) **Selected by the Editorial Board of Synfacts** (*Synfacts* **2010**, 1037.)  
Cobalt-Catalyzed Benzylzincation of Alkynes. Murakami, K.; Yorimitsu, H.; Oshima, K. *Chem. Eur. J.* **2010**, *16*, 7688–7691.
- (14) **Highlighted as Synfact of the Month by the Editorial Board of Synfacts** (*Synfacts* **2010**, 1171.)  
Rhodium-Catalyzed Arylzincation of Terminal Allenes Providing Allylzinc Reagents and Its Application to Versatile Three-component Coupling Reaction. Yoshida, Y.; Murakami, K.; Yorimitsu, H.; Oshima, K. *J. Am. Chem. Soc.* **2010**, *132*, 8878–8879.
- (15) **Highlighted as a Featured Article by the Associate Editor of J. Org. Chem.**  
Palladium-Catalyzed Allylation of Aryl Halides with Homoallyl Alcohols Bearing a Trisubstituted Double Bond: Application to Chirality Transfer from Hydroxylated Carbon to Benzylic One. Wakabayashi, R.; Fujino, D.; Hayashi, S.; Yorimitsu, H.; Oshima, K. *J. Org. Chem.* **2010**, *75*, 4337–4343.
- (16) **Selected as Highlight in Org. Proc. Res. Dev.** (*Org. Proc. Res. Dev.* **2010**, *14*, 1276–1286.)  
Palladium-Catalyzed Allylation of Aryl Halides with Homoallyl Alcohols Bearing a Trisubstituted Double Bond: Application to Chirality Transfer from Hydroxylated Carbon to Benzylic One. Wakabayashi, R.; Fujino, D.; Hayashi, S.; Yorimitsu, H.; Oshima, K. *J. Org. Chem.* **2010**, *75*, 4337–4343.
- (17) **Selected by the Editorial Board of Synfacts** (*Synfacts* **2010**, 927.)  
Nickel-Catalyzed Arylative Ring-Opening of 3-Methylenecycloalkane-1,1-dicarboxylates. Sumida, Y.; Yorimitsu, H.; Oshima, K. *Org. Lett.* **2010**, *12*, 2254–2257.



## 7. 国民との科学・技術対話

### (1) 金光学園中学高等学校夏季研修

実験実習「ヨウ素時計反応」

模擬授業「ナノの世界から原子をつないで機能を創る」

参加者 中学2年~高校3年 40名(男20名、女20名) . 2013.8.19. 京都大学.

アンケート実施無 .

### (2) サイエンス・カフェ高槻

「ナノの世界から原子をつないで機能を創る」

参加者 一般20名(男15名女5名) . 2013.5.18. 高槻.

評価についてはHP <http://www.eonet.ne.jp/~sciencetakatsuki/diary1.html> 参照

### (3) 金光学園高等学校サイエンスチャレンジ強化合宿

実験実習「鉄の酸化と触媒作用」

模擬授業「クロスカップリング反応～現代社会を支える有機金属化学～」

参加者高校1年生5名(男5名) . 2012.10.6. 京都大学. アンケート実施無 .

### (4) プレオープンキャンパス土佐高等学校 京都大学理学部化学科訪問

模擬授業「クロスカップリング反応～現代社会を支える有機金属化学～」

参加者高校1年生35名(男21名女14名) . 2012.8.8. 京都大学.

アンケート実施有り . 全員が「面白かった」と回答 . 「化学を好きになった」

「化学がこんなに世の中の役に立っているとは知らなかった」などの高評価多数 .

## 8. 領域内の共同研究の準備・実施状況とその成果

該当なし