

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) Characterization of the nucleophilic allylindium species generated from allyl bromide and indium(0) in aqueous media
Yasuda, M.; Haga, M.; Nagaoka, Y.; Baba, A.* *Eur. J. Org. Chem.* **2010**, 28, 5359-5363. (10.1002/ejoc.201000956)
- (2) Regioselective carboidation of simple alkenes with indium tribromide and ketene silyl acetals
Nishimoto, Y.; Ueda, H.; Inamoto, Y.; Yasuda, M.; Baba, A.* *Org. Lett.*, **2010**, 12, 3390–3393. (10.1021/ol1012108)
- (3) Synthesis and theoretical studies of gallium complexes back-shielded by a cage-shaped framework of tris(*m*-oxybenzyl)arene
Nakajima, H.; Yasuda, M.; Chiba, K.; Baba, A.* *Chem Commun.* **2010**, 4794–4796. (10.1039/C0CC00253D)
- (4) Indium Triiodide Catalyzed Direct Hydroallylation of Esters
Nishimoto, Y.; Inamoto, Y.; Saito, T.; Yasuda, M.; Baba, A.* *Eur. J. Org. Chem.* **2010**, 3382–3386. (10.1002/ejoc.201000475)
- (5) In Situ Observation of Nonequilibrium Local Heating as an Origin of Special Effect of Microwave on Chemistry
Tsukahara, Y.*; Higashi, A.; Yamauchi, T.; Nakamura, T.; Yasuda, M.; Baba, A.; Wada, Y.* *J. Phys. Chem. C*, **2010**, 114, 8965–8970. (10.1021/jp100509h)
- (6) Cyclopropylmethylation of Benzylic and Allylic Chlorides with Cyclopropylmethylstannane Catalyzed by Gallium or Indium Halide
Kiyokawa, K.; Yasuda, M.; Baba, A.* *Org. Lett.* **2010**, 12, 1520–1523. (10.1021/ol100240b)
- (7) Diastereoselective Reductive Aldol Reaction of Enones to Ketones Catalyzed by Halogenotin Hydride
Shibata, I.; Tsunoi, S.; Sakabe, K.; Miyamoto, S.; Kato, H.; Nakajima, H.; Yasuda, M. Baba, A.* *Chem. Eur. J.* **2010**, 16, 13335–13338. (10.1002/chem.201002108)
- (8) InI₃/Me₃SiI-catalyzed Direct Alkylation of Enol Acetates Using Alkyl Acetates or Alkyl Ethers
Onishi, Y.; Nishimoto, Y.; Yasuda, M.; Baba, A.* *Chem. Lett.*, **2011**, 40, 1223-1225.

- (9) Direct Synthesis of Alkynylstannanes: ZnBr₂ Catalyst for the Reaction of Tributyltin Methoxide and Terminal Alkynes
Kiyokawa, K.; Tachikake, N.; Yasuda, M.; Baba, A.* *Angew. Chem., Int. Ed.*, **2011**, *50*, 10393-10396. (10.1002/anie.201104208)
- (10) Stabilization of Excited State Using Through-Space Interaction between Independent π -Systems Mediated by a *peri*-Substituted Hydroxy Group in 1-Arylnaphthalenes: Unexpected Blue Emission of 1,3,5-Tris(*peri*-hydroxynaphthyl)benzene
Nakajima, H.; Yasuda, M.; Shimizu, K.; Toyoshima, N.; Tsukahara, Y.; Kobayashi, T.; Nakamura, S.; Chiba, K.; Baba, A.* *Bull. Chem. Soc. Jpn.*, **2011**, *84*, 1118-1129. (10.1246/bcsj.20110139)
- (11) Carbogallation of Alkynes Using Gallium Tribromide and Silyl Ketene Acetals and Synthetic Application to Cross-Coupling with Aryl Iodides
Nishimoto, Y.; Ueda, H.; Yasuda, M.; Baba, A.* *Chem. Eur. J.*, **2011**, *17*, 11135-11138. (10.1002/chem.201102255)
- (12) Indium Tribromide Catalyzed Cross-Claisen Condensation between Carboxylic Acids and Ketene Silyl Acetals Using Alkoxyhydrosilanes
Nishimoto, Y.; Okita, A.; Yasuda, M.; Baba, A.* *Angew. Chem., Int. Ed.*, **2011**, *50*, 8623-8625. (10.1002/anie.201104140)
- (13) InCl₃/Me₃SiBr-Catalyzed Direct Coupling between Silyl Ethers and Enol Acetates
Onishi, Y.; Nishimoto, Y.; Yasuda, M.; Baba, A.* *Org. Lett.*, **2011**, *13*, 2762-2765. (10.1021/ol200875m)
- (14) Substituted Butenylindium Generated by Transmetalation of Cyclopropylmethylstannane with Indium Iodide: Synthesis and Characterization of Monobutenylindium
Kiyokawa, K.; Yasuda, M.; Baba, A.* *Organometallics*, **2011**, *30*, 2039-2043. (10.1021/om200094m)
- (15) Synthesis of Cyclopropane-Containing Phosphorus Compounds by Radical Coupling of Butenylindium with Iodo Phosphorus Compounds
Kiyokawa, K.; Suzuki, I.; Yasuda, M.; Baba, A.* *Eur. J. Org. Chem.*, **2011**, 2163-2171. (10.1002/ejoc.201001471)
- (16) Synthesis of a Wide Range of Thioethers by Indium Triiodide Catalyzed Direct Coupling between Alkyl Acetates and Thiosilanes
Nishimoto, Y.; Okita, A.; Yasuda, M.; Baba, A.* *Org. Lett.* **2012**, *14*, 1846-1849. (10.1021/ol300450j)
- (17) Recognition of Aromatic Compounds by π Pocket within a Cage-Shaped Borate Catalyst
Nakajima, H.; Yasuda, M.; Takeda, R. Baba, A.* *Angew. Chem., Int. Ed.*, 3867-3870.

- (10.1002/anie.201200346)
- (18) Direct Use of Esters in the Mukaiyama Aldol Reaction: A Powerful and Convenient Alternative to Aldehydes
Inamoto, Y.; Nishimoto, Y.; Yasuda, M.; Baba, A.* *Org. Lett.*, **2012**, *14*, 1168-1171.
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- (19) Regio- and Stereoselective Carbobismuthination of Alkynes
Nishimoto, Y.; Takeuchi, M.; Yasuda, M.; Baba, A.* *Angew. Chem., Int. Ed.*, **2012**, *51*, 1051-1054. (10.1002/anie.201107127)
- (20) Lithium Phenolates with A Hexagonal-prismatic Li₆O₆ Core Isolated via A Cage-shaped Tripodal Ligands System: Crystal Structures and Their Behavior in Solution
Nakajima, H.; Yasuda, M.; Baba, A. * *Dalton Trans.* **2012**, *41*, 6602-6606.
(10.1039/C2DT30266G)
- (21) Dependence of Catalytic Properties of Indium-implanted SiO₂ Thin Films on The Energy and Dose of Incident Indium Ions
Yoshimura, S.; Kiuchi, M.; Nishimoto, Y.; Yasuda, M.; Baba, A. *; Hamaguchi, S. *Thin Solid Films* **2012**, *520*, 4894–4897. (10.1016/j.tsf.2012.03.028)
- (22) Low Energy Metal Ion Beam Production with a Modified Freeman-Type Ion Source for Development of Novel Catalysts
Yoshimura, S.; Kiuchi, M.; Nishimoto, Y.; Yasuda, M.; Baba, A. *; Hamaguchi, S. *e-J. Surf. Sci. Nanotech.* **2012**, *10*, 139-144. (10.1380/ejssnt.2012.139)
- (23) Gallium Tribromide Catalyzed Coupling Reaction of Alkenyl Ethers with Ketene Silyl Acetals
Nishimoto, Y.; Ueda, H.; Yasuda, M.; Baba, A. * *Angew. Chem. Int. Ed.* **2012**, *51*, 8073-8076. (10.1002/anie.201203778)
- (24) InCl₃/Me₃SiCl-Catalyzed Direct Michael Addition of Enol Acetates to α,β -Unsaturated Ketones
Onishi, Y.; Yoneda, Y.; Nishimoto, Y.; Yasuda, M.; Baba, A. * *Org. Lett.* **2012**, *14*, 5788-5791. (10.1021/ol302888k)
- (25) Synthesis of Alkylbismuths by Regiodivergent Carbobismuthination of Simple Alkenes
Nishimoto, Y.; Takeuchi, M.; Yasuda, M.; Baba, A. *Chem. Eur. J.* **2013**, *19*, 14411-14415.
(10.1002/chem.201302194)
- (26) Zn(II) Chloride-Catalyzed Direct Coupling of Various Alkynes with Acetals: Facile and Inexpensive Access to Functionalized Propargyl Ethers
Suzuki, I.; Yasuda, M.; Baba, A. *Chem. Commun.* **2013**, *49*, 11620-11622.
(10.1039/C3CC46570E)

- (27) Indium(III) Halide-Catalyzed UV-Irradiated Radical Coupling of Iodomethylphosphorus Compounds with Various Organostannanes
Suzuki, I.; Kiyokawa, K.; Yasuda, M.; Baba, A. *Org. Lett.* **2013**, *15*, 1728-1731. (10.1021/ol4005257)
- (28) Indium Triiodide Catalyzed Reductive Functionalization of Amides via the Single-Stage Treatment of Hydrosilanes and Organosilicon Nucleophiles
Inamoto, Y.; Kaga, Y.; Nishimoto, Y.; Yasuda, M.; Baba, A. *Org. Lett.* **2013**, *15*, 3452-3455. (10.1021/ol4015317)
- (29) Syntheses of Aldol Products and Cyanohydrins from Carboxylic Acids Using Hydrosilanes, Organosilicon Reagents, and Indium Triiodide Catalyst
Inamoto, Y.; Nishimoto, Y.; Yasuda, M.; Baba, A. *Chem. Lett.* **2013**, *42*, 1551-1553. (10.1246/cl.130790)
- (30) Indium Chloride Catalyzed Alkylative Rearrangement of Propargylic Acetates Using Alkyl Chlorides, Alcohols, and Acetates: Facile Synthesis of α -Alkyl- α,β -Unsaturated Carbonyl Compounds
Onishi, Y.; Yoneda, Y.; Nishimoto, Y.; Yasuda, M.; Baba, A. * *Org. Lett.* **2014**, *16*, 1176-1179. (DOI:10.1021/ol500046e)

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) Synthesis and Application of Alkenylindium by Carboindation Using Indium Tribromide, Alkynes, and Ketene Silyl Acetals
Nishimoto, Y.; Yasuda, M.; Baba, A. The 2010 International Chemical Congress of Pacific Basin Societies (Pacifichem 2010), Honolulu, Hawaii, USA, 2010.12.15-20（ポスター発表）.
- (2) Selective Synthesis of Homoallylic Alcohol or Homoallylic Ether by Indium Triiodide Catalyzed Direct Hydroallylation of Ester
Inamoto, Y.; Nishimoto, Y.; Yasuda, M.; Baba, A. The 2010 International Chemical Congress of Pacific Basin Societies (Pacifichem 2010), Honolulu, Hawaii, USA, 2010.12.15-20（ポスター発表）.
- (3) Evaluation of Back-Shielded Gallium Complexes by Theoretical Calculation and Their Application for A Catalytic Reaction
Nakajima, H.; Yasuda, M.; Baba, A. The 2010 International Chemical Congress of Pacific Basin Societies (Pacifichem 2010), Honolulu, Hawaii, USA, 2010.12.15-20（ポスター発表）.

(4) Coupling Reaction of Benzylic and Allylic Chlorides with Butenylgallium or -indium Species

Kiyokawa, K.; Yasuda, M.; Baba, A. The 2010 International Chemical Congress of Pacific Basin Societies (Pacifichem 2010), Honolulu, Hawaii, USA, 2010.12.15-20 (ポスター発表) .

(5) Indium Trichloride/Trimethylsilyl Bromide-Catalyzed α -Alkylation of Carbonyl Compounds by the Direct Use of Alcohol Derivatives and Vinyl Esters

Onishi, Y.; Nishimoto, Y.; Yasuda, M.; Baba, A. The 2010 International Chemical Congress of Pacific Basin Societies (Pacifichem 2010), Honolulu, Hawaii, USA, 2010.12.15-20 (ポスター発表)

(6) Cage-Shaped Borate Esters with Multiple Tuning Factors: Geometric and Substituent Effects on their Lewis Acid Properties

Yasuda, M.; Nakajima, H.; Nakaoka, K.; Baba, A. The 6th International Conference on Cutting-Edge Organic Chemistry in Asia (ICCEOCA-6) and The 2nd New Phase International Conference on Cutting-Edge Organic Chemistry in Asia (NICCEOCA-2), Hong Kong, 2011.12.11-15 (ポスター発表) .

(7) Direct Coupling between Enol Acetates and Alkyl Acetates or Alkyl Ethers Catalyzed by Combined Lewis Acid of InI_3 and Me_3SiI

Onishi, Y.; Nishimoto, Y.; Yasuda, M.; Baba, A. The Seventh International Symposium on Integrated Synthesis (ISIS-7), Kobe, Japan, 2011.10.9-10 (ポスター発表)

(8) Alkylindium Species for Coupling Reaction with Organic Halides in a Radical Manner

Yasuda M.; Kiyokawa K.; Baba A. The 5th Pacific Symposium on Radical Chemistry (PSRC-5), Shirahama, Japan, 2011.9.25-28 (口頭発表)

(9) Radical Allylation of Iodo Phosphonates Using Organostannanes or Organoindiums

Suzuki I.; Kiyokawa K.; Yasuda M.; Baba A. The 5th Pacific Symposium on Radical Chemistry (PSRC-5), Shirahama, Japan, 2011.9.25-28 (ポスター発表)

(10) Synthesis of Alkylbismuths by Carbobismuthination of Alkenes and Its Application to Reaction Integration

Nishimoto, Y.; Takeuchi, M.; Yasuda, M.; Baba, A. The Eighth International Symposium on Integrated Synthesis (ISIS-8), Nara, Japan, 2013.11.29-12.1 (ポスター発表)

5. 受賞等

(1) 清川謙介 (博士2年)

ポスター賞 第57回有機金属化学討論会、2010.9.9-11

(2) 中島秀人 (博士2年)

ポスター賞 第21回基礎有機化学討論会、2010.9.9

(3) 中島秀人 (博士2年)

学生講演賞 日本化学会第91春季年会、2010.3.29-29

(4) 稲本 佳寛 (博士3年)

ポスター賞 第60回有機金属化学討論会、2013.9.12-14

(5) 鈴木 至 (博士2年)

優秀研究発表賞 第33回有機合成若手セミナー「明日の有機合成を担う人のために」、2013.8.2

(6) 馬場 章夫

第55回有機合成化学協会賞、2013