

Curriculum Vitae

As of August 20, 2005

Name: Shinichi SAITO

Nationality: Japan

Associate Professor

(P. I., Department of Chemistry, Faculty of Science,
Tokyo University of Science, Japan)



Education

Tokyo University, Tokyo, Japan (supervisor, Professor Koichi Shudo)

Ph. D. in Pharmaceutical Sciences, March, 1995

M. S. in Pharmaceutical Sciences, March, 1992

B. S. in Pharmaceutical Sciences, March, 1990

Nagai Foundation Fellow (from June, 1994 to October, 1994, supervisor, Professor Peter J. Stang, the University of Utah).

Ph. D. Thesis

Friedel-Crafts-type Reactions of Carbonyl Compounds with Benzene. The Involvement of Dications as the Reactive Intermediates

Experience

- | | |
|--------------|--|
| 2005-present | Associate Professor
(P. I., Tokyo University of Science, Japan) |
| 2002-2005 | Lecturer
(P. I., Tokyo University of Science, Japan) |
| 2001-2002 | Special Postdoctoral Researcher
(The Institute of Physical and Chemical Research, Japan) |
| 1998-2001 | Research Associate
(Institute of Chemical Reaction Science, Tohoku University, Japan) |
| 1996-1998 | Research Associate
(Toyama Medical & Pharmaceutical University, Japan) |
| 1995 | Postdoctoral Fellow
(JSPS Fellow, Department of Chemistry, Tohoku University, Prof. Yoshinori Yamamoto) |

Awards

- 2005 OMCOS-13 Poster Award (13th IUPAC international symposium on organometallic chemistry directed towards organic synthesis)
- 2005 The Pharmaceutical Society of Japan Award for Young Scientists
- 2004 Lectureship for the Young Scientists, 84th Annual Meeting, The Chemical Society of Japan

Professional Interests

Synthetic Organometallic Chemistry

(Ni, Pd, Pt. C-C Bond Formation between Unsaturated Hydrocarbons in the Presence of Transition Metal Catalysts)

Professional Societies

American Chemical Society

Chemical Society of Japan

Pharmaceutical Society of Japan

Synthetic Organic Chemistry, Japan

Japanese Bioindustry Association

1. Original Papers

(1)

S. Saito and Y. Koizumi, "Copper-catalyzed coupling of aryl halides and nitrite salts: a mild Ullmann-type synthesis of aromatic nitro compounds"

Tetrahedron Lett. **2005**, *46*, 4715-4717.

(2)

S. Saito, K. Takeuchi, T. Mise, and Y. Wakatsuki, "Ruthenium-catalyzed cycloisomerization of 1,1,2,2-tetramethyl-1,2-divinylsilane. Selective formation of a five-membered silacycle"

J. Organomet. Chem. **2005**, *690*, 3451-3455.

(3)

S. Saito, N. Dobashi, and Y. Wakatsuki, "Ruthenium-Catalyzed Hydrative Dimerization of Allenes"

Chem. Lett. **2005**, *34*, 504-505.

(4)

S. Saito, M. Masuda, and S. Komagawa, "Nickel-catalyzed Intermolecular [3+2+2] Cocyclization of Ethyl Cyclopropylideneacetate and Alkynes"

J. Am. Chem. Soc. **2004**, *126*, 10540-10541.

(5)

B-H. Oh, I. Nakamura, S. Saito and Y. Yamamoto, "Synthesis of 3-methylenepyrrolidines by palladium-catalyzed [3+2] cycloaddition of alkylidenecyclopropanes with imines."

Heterocycles **2003**, *61*, 247-257.

(6)

T. Kawasaki, S. Saito and Y. Yamamoto, "Nickel(0)-Catalyzed Dimerization of Ethyl Cyclopropylideneacetates"

J. Org. Chem. **2002**, *67*, 4911-4915.

(7)

I. Nakamura, A. I. Siriwardana, S. Saito and Y. Yamamoto, "Addition of Heteroaromatics to Alkylidenecyclopropanes Catalyzed by Palladium"

J. Org. Chem. **2002**, *67*, 3445-3449.

(8)

T. Kawasaki, S. Saito and Y. Yamamoto, "Synthesis of Phthalides and 3,4-Dihydroisocoumarins Using the Palladium-Catalyzed Intramolecular Benzannulation Strategy"

J. Org. Chem. **2002**, *67*, 2653-2658.

(9)

D. H. Camacho, I. Nakamura, B. H. Oh, S. Saito and Y. Yamamoto, "Palladium-catalyzed addition of ketones to alkylidenecyclopropanes"

Tetrahedron Lett. **2002**, *43*, 2903-2907.

(10)

D. H. Camacho, S. Saito and Y. Yamamoto, "Synthesis of (E)-1,2-Divinyl-1,2-diethynylethene (DVDEE) via the Palladium-Catalyzed Reaction of Conjugated Diynes. A New Building Block for Molecular Scaffolding"

J. Am. Chem. Soc. **2002**, *124*, 924-925.

(11)

D. H. Camacho, S. Saito and Y. Yamamoto, "Anti-Wacker'-type Hydroalkoxylation of Diynes Catalyzed by Palladium(0)"

Tetrahedron Lett. **2002**, *43*, 1085-1088.

(12)

B. H. Oh, I. Nakamura, S. Saito and Y. Yamamoto, "Palladium-catalyzed [3+2] Cycloaddition of Alkylidenecyclopropanes with Imines"

Tetrahedron Lett. **2001**, *42*, 6203-6205.

(13)

I. Nakamura, B. H. Oh, S. Saito and Y. Yamamoto, "Novel [3+2] Cycloaddition of Alkylidenecyclopropanes with Aldehydes Catalyzed by Palladium"

Angew. Chem., Int. Ed. **2001**, *40*(7), 1298-1300.

(14)

S. Saito, Y. Chounan, T. Nogami, O. Ohmori and Y. Yamamoto, "Palladium-Catalyzed Benzannulation of Conjugated Enynes in Fluorous Biphasic System"

Chem. Lett. **2001**, 444-445.

(15)

S. Saito, T. Kawasaki, N. Tsuboya and Y. Yamamoto, "Highly Regioselective Cyclotrimerization of 1-Perfluoroalkylenyne Catalyzed by Nickel"

J. Org. Chem. **2001**, *66*, 796-802.

(16)

D. H. Camacho, I. Nakamura, S. Saito and Y. Yamamoto, "Palladium Catalyzed Addition of Alcohol Pronucleophiles to Alkylidenecyclopropanes"

J. Org. Chem. **2001**, *66*, 270-275.

(17)

J. Zhang, S. Saito and T. Koizumi, "First Diastereoselective Synthesis of Enantiomerically Pure Selenoxonium Salts by Reaction of Chiral Haloselenuranes with Grignard Reagents"

Synthetic Commun. **2001**, *31(16)*, 2441 –2446.

(18)

S. Saito, O. Ohmori and Y. Yamamoto, "Palladium(0)-Catalyzed *Cross*-Benzannulation between Conjugated Enynes. Reactivity-Controlled Synthesis of Multifunctionalized Benzenes"

Org. Lett. **2000**, *2*, 3853-3855.

(19)

S. Saito, K. Hirayama, C. Kabuto and Y. Yamamoto, "Nickel(0)-Catalyzed [2+2] Annulation of Electron-Deficient Allenes. Highly Regioselective Synthesis of Cyclobutanes"

J. Am. Chem. Soc. **2000**, *122*, 10776-10780.

(20)

S. Saito, Y. Chounan, T. Nogami, T. Fukushi, N. Tsuboya, Y. Yamada, H. Kitahara and Y. Yamamoto, "Enhanced Reactivity of Electron-Deficient Enynes in the Palladium-Catalyzed *Homo*-Benzannulation of Conjugated Enynes"

J. Org. Chem. **2000**, *65*, 5350-5354.

(21)

S. Saito, K. Tando, C. Kabuto and Y. Yamamoto, "Platinum(0)-Enyne Complexes. The Platinum Analog of Possible Intermediate in the Palladium(0)-Catalyzed Benzannulation of Conjugated Enynes"

Organometallics **2000**, *19*, 3740-3743.

(22)

S. Saito, M. Homma, V. Gevorgyan and Y. Yamamoto, "HI-Mediated Cyclization of *Ortho*-Alkynylstyrenes"

Chem. Lett. **2000**, 722-723.

(23)

S. Saito, N. Uchiyama, V. Gevorgyan and Y. Yamamoto, "Palladium-Catalyzed Cross-Benzannulation of Aminoenynes with Diynes. Highly Regioselective Synthesis of Polysubstituted Anilines"

J. Org. Chem. **2000**, *65*, 4338-4341.

(24)

J. X. Liu, S. Saito and Y. Yamamoto, "Preparation of Functionalized Metacyclophanes by Intramolecular Benzannulation of Bisenynes"

Tetrahedron Lett. **2000**, *41*, 4201-4204.

(25)

I. Nakamura, S. Saito and Y. Yamamoto, "Hydrofurylation of Alkylidenecyclopropanes Catalyzed by Palladium"

J. Am. Chem. Soc. **2000**, *122*, 2661-2662.

(26)

S. Saito, T. Tanaka, T. Koizumi, N. Tsuboya, H. Itagaki, T. Kawasaki, S. Endo and Y. Yamamoto, "Nickel(0)-Catalyzed Unprecedented Zipper Annulation of Certain Conjugated Enynes"

J. Am. Chem. Soc. **2000**, *122*, 1810-1811.

(27)

D. Camacho, I. Nakamura, S. Saito and Y. Yamamoto, "Palladium-Catalyzed Hydroalkoxylation of Methylenecyclopropanes"

Angew. Chem., Int. Ed. **1999**, *38*, 3365-3367.

(28)

S. Saito, N. Tsuboya, Y. Chounan, T. Nogami and Y. Yamamoto, "Palladium-Catalyzed Benzannulation of Conjugated Enynes. Enhanced Reactivity of Alkoxy carbonyl- and Cyanoenynes"

Tetrahedron Lett. **1999**, *40*, 7529-7532.

(29)

S. Saito, S. Nakagawa, T. Koizumi, K. Hirayama and Y. Yamamoto, "Nickel-Mediated Chemo- and Regioselective Carboxylation of Alkynes in the Presence of Carbon Dioxide"

J. Org. Chem. **1999**, *64*, 3975-3978.

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S. Saito, J. Zhang, K. Tanida, S. Takahashi and T. Koizumi, "A Systematic ^{125}Te NMR Study of Organotellurium Compounds: The Effect of Oxidation States and Substituents"

Tetrahedron **1999**, 28, 2545-2552.

(31)

J. Zhang, S. Saito and T. Koizumi, "Stereochemical Research on the Hydrolysis of Optically Pure Spirosulfuranes: Efficient Synthesis of Chiral Sulfoxides with Completely Opposite Stereochemistry"

J. Org. Chem. **1998**, 63, 9375-9384.

(32)

J. Zhang, S. Takahashi, S. Saito and T. Koizumi, "First Synthesis and Stereochemistry of Enantiometrically Pure Spiroselenurane and Spirotellurane Using the 2-*exo*-Hydroxy-10-bornyl Group as a Chiral Ligand"

Tetrahedron: Asymmetry **1998**, 9, 3303-3317.

(33)

S. Saito, J. Zhang and T. Koizumi, "Synthesis and Structure of Novel Haloselenurane-Lewis acid Complexes"

J. Org. Chem. **1998**, 63, 6029-6030.

(34)

J. Zhang, S. Saito and T. Koizumi, "Diastereoselective Synthesis and Stereochemical Research of Optically Pure Telluronium Salts"

J. Org. Chem. **1998**, 63, 5423-5429.

(35)

J. Zhang, S. Saito and T. Koizumi, "Isolation and Stereochemical Studies of a Cyclic Alkoxysulfonium Salt: An Important Intermediate in the Nucleophilic Reaction of Chlorooxasulfuranes"

J. Org. Chem. **1998**, 63, 5265-5267.

(36)

J. Zhang, S. Saito and T. Koizumi, "Acidic and Basic Hydrolysis of an Optically Pure Spiro- λ^4 -sulfurane: Completely Opposite Stereochemical Outcome"

J. Am. Chem. Soc. **1998**, 120, 1631-1632.

(37)

S. Takahashi, J. Zhang, S. Saito and T. Koizumi, "Halogen Exchange Reaction of Optically Pure Halotelluranes"

Heterocycles **1997**, *46*, 373-384.

(38)

J. Zhang, S. Saito and T. Koizumi, "First Stereoselective Synthesis of Enantiometrically Pure Telluronium Salts by the Reaction of Chiral Halloxtelluranes with Grignard Reagents"

Tetrahedron: Asymmetry **1997**, *8*, 3357-3361.

(39)

S. Saito, N. Tsuboya and Y. Yamamoto, "First Synthesis of Exomethylene Paracyclophanes and Their Structural Properties"

J. Org. Chem. **1997**, *62*, 5042-5047.

(40)

V. Gevorgyan, C. Kadowaki, M. M. Salter, I. Kadota, S. Saito and Y. Yamamoto, "Palladium Catalyzed Addition of Carbon Pronucleophiles to Conjugated Enynes"

Tetrahedron **1997**, *27*, 9097-9106.

(41)

J. Zhang, S. Saito, T. Takahashi and T. Koizumi, "Synthesis of Cyclic Halooxtelluranes via Dehalogenation of α -Halo Carbonyl Compounds with Tellurides Containing Hydroxy Group on the Side Chain"

Heterocycles **1997**, *45*(3), 575-584.

(42)

A. Yokoyama, T. Ohwada, S. Saito and K. Shudo, "Nitration of Quinoline 1-Oxide: Mechanism of Regioselectivity"

Chem. Pharm. Bull. **1997**, *45*(2), 279-283.

(43)

S. Saito, T. Ohwada and K. Shudo, "Superacid-Catalyzed Reaction of Substituted Benzaldehydes with Benzene"

J. Org. Chem. **1996**, *61*, 8089-8093.

(44)

T. Ohwada, T. Yamazaki, T. Suzuki, S. Saito and K. Shudo, "Structures and Reactivities of Ethylene Dication Electrophiles"

J. Am. Chem. Soc. **1996**, *118*, 6220-6224.

(45)

S. Saito, M. M. Salter, V. Gevorgyan, N. Tsuboya, K. Tando and Y. Yamamoto, "A New Pd-Catalyzed Benzannulation of Conjugated Enynes"

J. Am. Chem. Soc. **1996**, *118*, 3970-3971.

(46)

M. M. Salter, V. Gevorgyan, S. Saito and Y. Yamamoto, "Synthesis of Allenes via Palladium Catalyzed Addition of Certain Activated Methynes to Conjugated Enynes"

J. Chem. Soc., Chem. Commun. **1996**, 17-18.

(47)

S. Saito, T. Ohwada and K. Shudo, "Friedel-Crafts-type Reaction of Benzaldehyde with Benzene. Diprotonated Benzaldehyde as the Reactive Intermediate"

J. Am. Chem. Soc. **1995**, *117*, 11081-11084.

(48)

T. Yamazaki, S. Saito, T. Ohwada and K. Shudo, "Acid-catalyzed Reactions of 1,2-dicarbonylethanes with Benzene. Ethylene Dication Electrophiles"

Tetrahedron Lett. **1995**, *36*, 5749-5752.

(49)

P. J. Stang, D. H. Cao, S. Saito and A. M. Arif, "Self-Assembly of Cationic, Tetranuclear, Pt(II) and Pd(II) Macrocyclic Squares. X-ray Crystal Structure of $[\text{Pt}^{2+}(\text{dppp})(4,4'\text{-bipyridyl})\cdot 2\text{OSO}_2\text{CF}_3]_4^+$ "

J. Am. Chem. Soc. **1995**, *117*, 6273-6283.

(50)

Y. Sato, M. Yato, T. Ohwada, S. Saito and K. Shudo, "Involvement of Dicationic Species as the Reactive Intermediates in Gattermann, Houben-Hoesch, and Friedel-Crafts Reactions of Nonactivated Benzenes"

J. Am. Chem. Soc. **1995**, *117*, 3037-3043.

(51)

S. Saito, Y. Sato, T. Ohwada and K. Shudo, "Friedel-Crafts-Type Cyclodehydration of 1,3-Diphenyl-1-propanones. Kinetic Evidence for the Involvement of Dication"

J. Am. Chem. Soc. **1994**, *116*, 2312-2317.

(52)

Sho. Saito, Shi. Saito, T. Ohwada and K. Shudo, "The Hammett Acidity Function H_0 of Trifluoromethanesulfonic Acid-Trifluoroacetic Acid and Related Acid Systems. A

Versatile Nonaqueous Acid System”

Chem. Pharm. Bull. **1991**, *39(10)*, 2718-2720.

2. Reviews, Books and Accounts

(1)

S. Saito, "Development of Novel Nickel- and Palladium-catalyzed Cycloaddition Reactions which Proceed with High Atom Economy" (in Japanese)

Yakugaku Zasshi **2005**, accepted for publication.

(2)

S. Saito, "Development of New Cycloaddition Reactions Based on the Unique Reactivity of Unsaturated Hydrocarbons"

Chem. Pharm. Bull. **2005**, accepted for publication.

(3)

S. Saito, "Cyclooligomerization and Cycloisomerization of Alkenes and Alkynes"

Tamaru Y. Ed.; *Modern Organonickel Chemistry*, Wiley-VCH, New York, 2005; pp 171-204.

(4)

S. Saito and Y. Yamamoto, "Palladium-Catalyzed Benzannulation Reactions of Enynes and Diynes"

Negishi, E-i. Ed.; *Handbook of Organopalladium Chemistry for Organic Synthesis*, Wiley, New York, 2002; pp 1635-1646.

(5)

S. Saito and Y. Yamamoto, "New Benzannulation Reactions of Conjugated Enynes"

Journal of Synthetic Organic Chemistry, Japan (in Japanese), **2001**, 59(4), 346-354.

(6)

S. Saito, "Construction of Carbocycles from Unsaturated Hydrocarbons -Development of New Transition Metal-Catalyzed Reactions-"

Kagaku to Kougyou (in Japanese), **2001**, 54(2), 176-178.

(7)

S. Saito and Y. Yamamoto, "Recent Advances in the Transition Metal-Catalyzed Regioselective Approaches to Polysubstituted Benzene Derivatives"

Chem. Rev. **2000**, 100, 2901-2916.

(8)

J. Zhang, N. Kurose, S. Saito, T. Takahashi and T. Koizumi, "Optically Pure Chalcogenuranes: Synthesis and Stereochemistry of Their Reactions"

Journal of Synthetic Organic Chemistry, Japan (in Japanese), **1999**, 57(7), 587-597.

(9)

S. Saito

“An Efficient Synthesis-Screening System for the Discovery of New Drugs”

Farmacia (in Japanese) **1998**, 34(1), 52-53.

(10)

S. Saito and Y. Yamamoto, “A Ru Catalyzed Addition of Alkenes to Alkynes. A Transition-Metal-Catalyzed Formal Alder ene Reaction”

CHEMTRACTS-Organic Chemistry **1995**, 8, 300-304.