



Dr. Maki Kawai
President of the CSJ



Chemical Society of Japan (CSJ):

- Founded in 1878 by twenty scholars as Chemical Society
- Renamed The Tokyo Chemical Society and eventually given the present name
- In 1948, after the WWII, it merged with the Society of Chemical Industry, founded in 1898.
- 140 years of history with a current membership exceeding 27000.



Dr. Teruaki Mukaiyama
Founder



Dr. Mitsuhiro Shionoya
Editor-in-Chief

Journal founded in 1972 by **Teruaki Mukaiyama**. **Monthly** specific journal for the publication of **Highlight reviews** and **Letters** (2-3 pages). The objective of the Journal is to publish original research **very rapidly**. Some information about the journal:

- Multidisciplinary journal including analytical, organic, coordination chemistry, among others.
- More than 26000 articles published, including reviews.
- Impact factor of 1.625 (JCR 2017)
- Top 3 authors in publications:
 - Teruaki Mukaiyama (University of Tokio, 616 publications)
 - Ken-ichi Tanaka (Hokkaido University, 220 publications)
 - Hideki Sakurai (University of Tokio, 200 publications)
- Top 3 Universities in publications:
 - University of Tokio, 2230 publications
 - Osaka University, 1887 publications
 - Kyoto University, 1547 publications



Leo Messi
GOAT

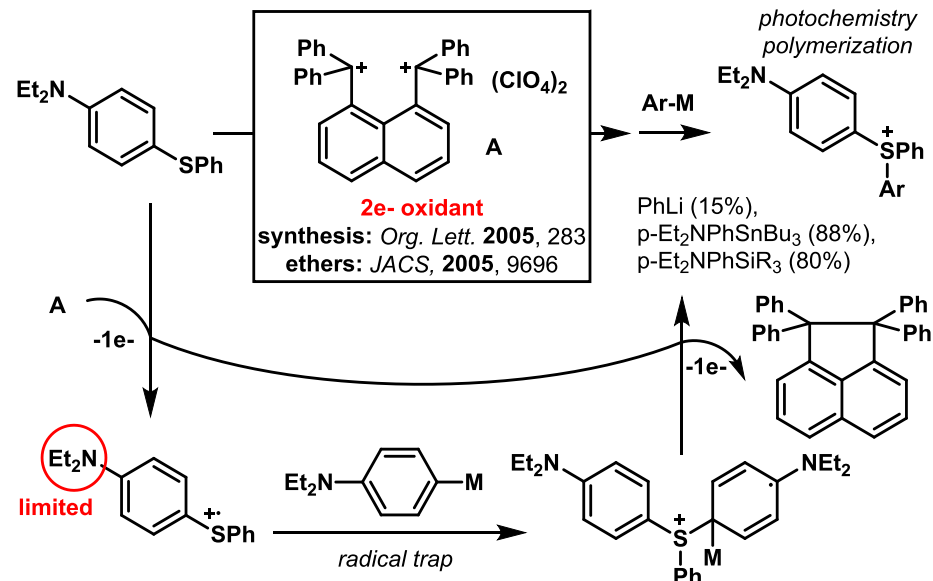
Nobel prize in chemistry (2010)
to Heck, Suzuki and Negishi

FCBarcelona wins the Champions League (2011)
playing the best football ever seen

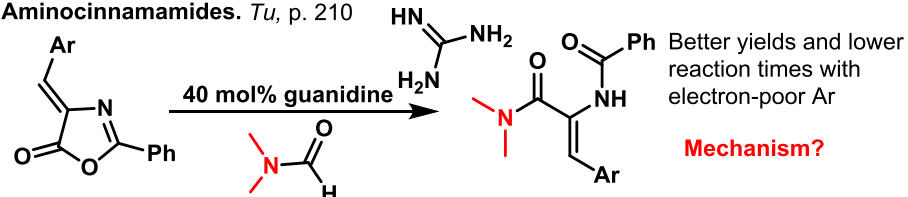


2010

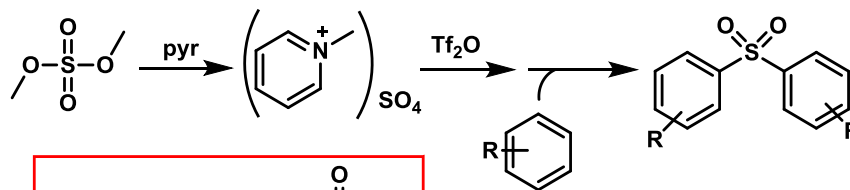
Oxidative Arylation Mediated by Naphthalene-1,8-diylbis(diphenylmethylium): Synthetic Route to Triarylsulfonium Salts. *Ichikawa, p. 56.*



An unexpected guanidine-catalyzed Amination Reaction Leading to (Z)- α -Aminocinnamamides. *Tu, p. 210*



Synthesis of Symmetric Diaryl Sulfones with Dimethyl Sulfate. *Khodaei, p. 390*



Key intermediate: TfO-SO₂-OTf

Friedel-Crafts-type Sulfonation of arenes
Reaction limited to electron-rich arenes

Photochemical Formal Alkadiene Insertion into an Aromatic C-CN Bond Using Cyanide Ion as Catalyst. Mizuno, p. 462

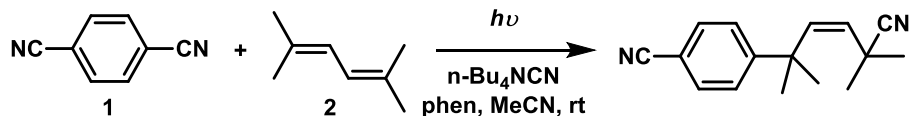
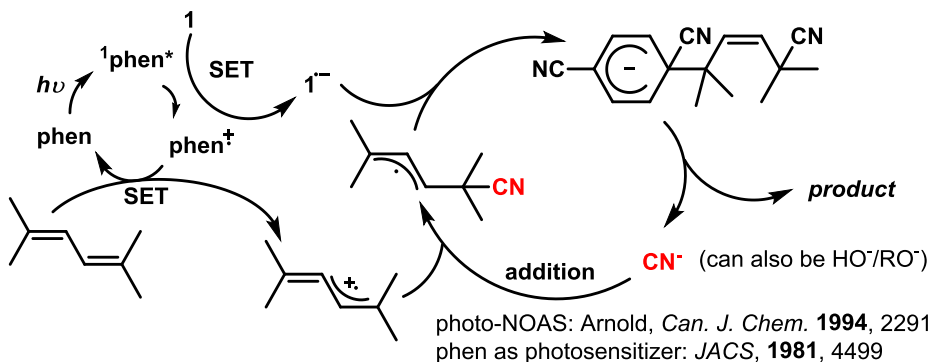
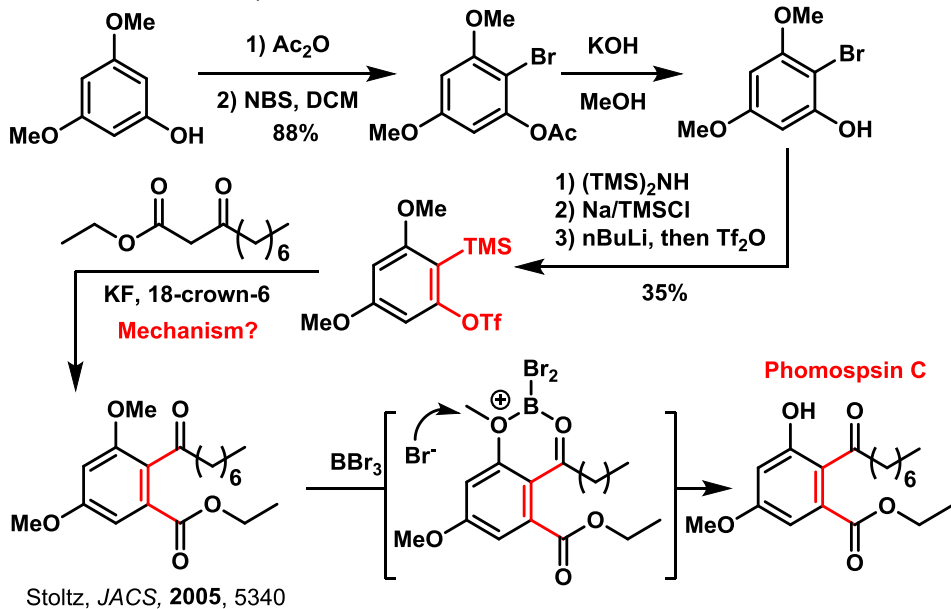


photo-NOAS (photochemical Nucleophile-Olefin Combination, Aromatic Substitution)

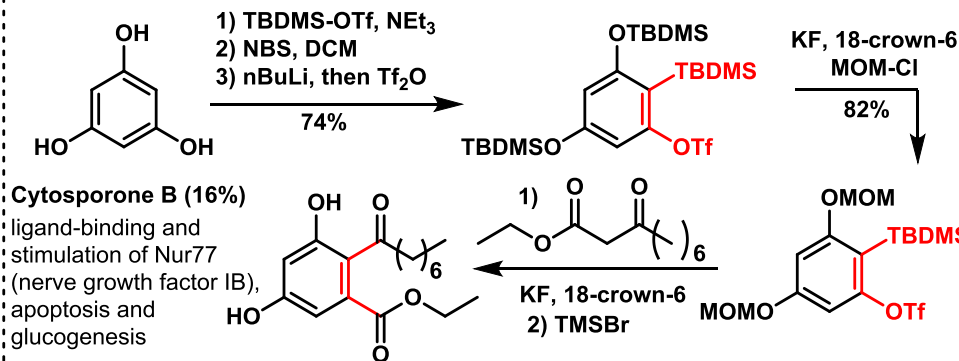


An Aryne Route to Cytosporone B and Phomopsin C. Yoshida, p. 508

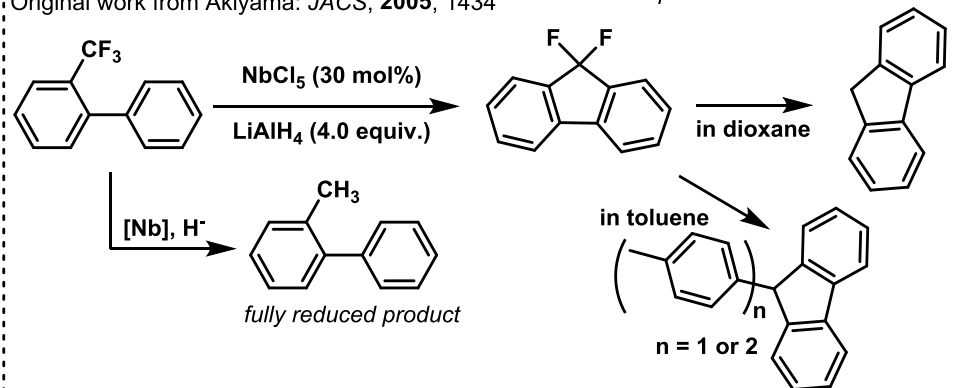
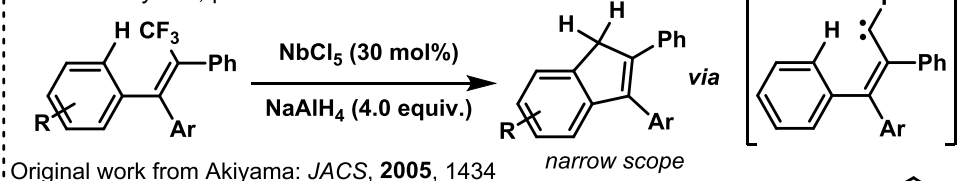
Route 1: unsuccessful deprotection leads to Phomopsin C



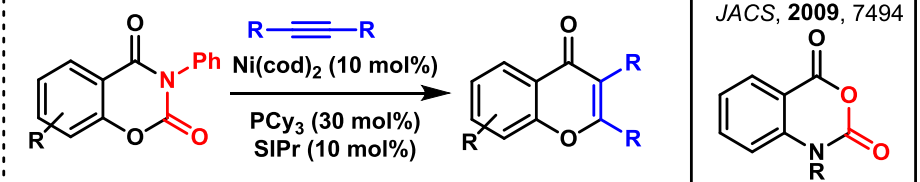
Route 2: deprotection of MOM to realize the synthesis of Cytosporone B



Niobium-catalyzed Activation of CF₃ group on Alkene: Synthesis of Substituted Indenes. Akiyama, p. 867

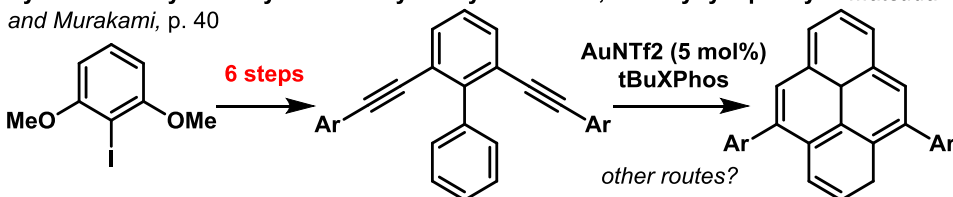


Nickel-catalyzed [4+2] Cycloaddition of Alkynes to Carbonylsalicylamides via Elimination of Isocyanates. Matsubara and Kurahashi, p. 896



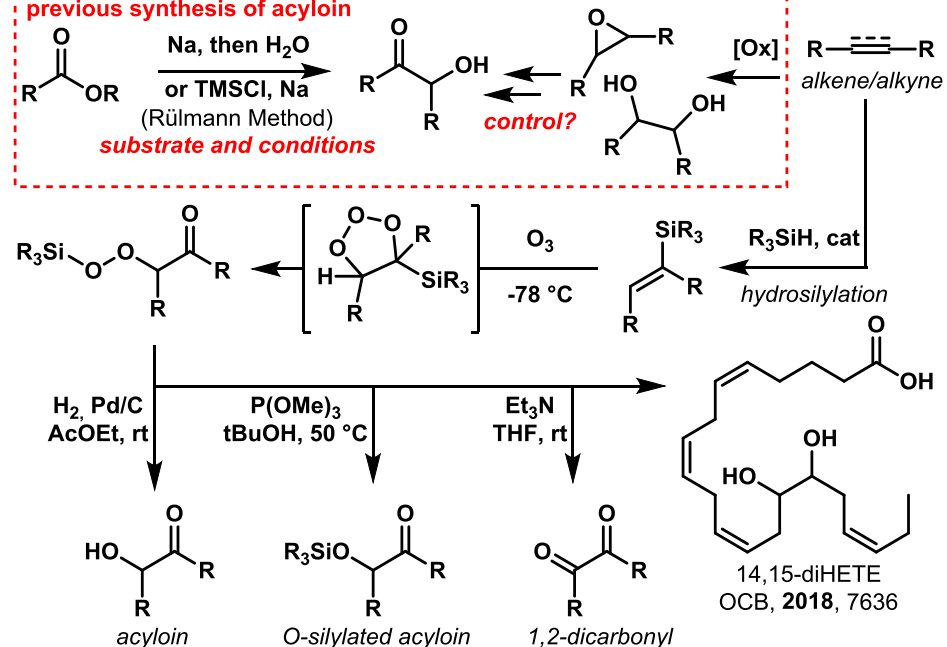
2011 Special Issue for the 2010 Nobel Prize in Chemistry (Heck, Suzuki, Negishi)

Synthesis of Pyrenes by Twofold Hydroarylation of 2,6-Dialkynylbiphenyls. Matsuda and Murakami, p. 40

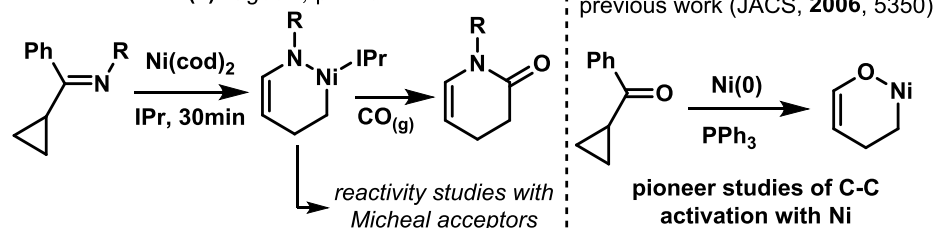


Addition-type Oxidation of Silylalkene Using Ozone: An efficient Approach for Acyloin and Its Derivatives. Tomooka, p. 233

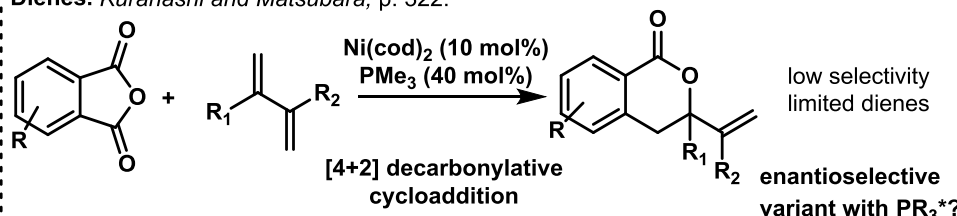
previous synthesis of acyloin



Formation of Six-membered Aza-nickelacycles by Oxidative Addition of Cyclopropyl Imines to Nickel(0). Ogoshi, p. 248.

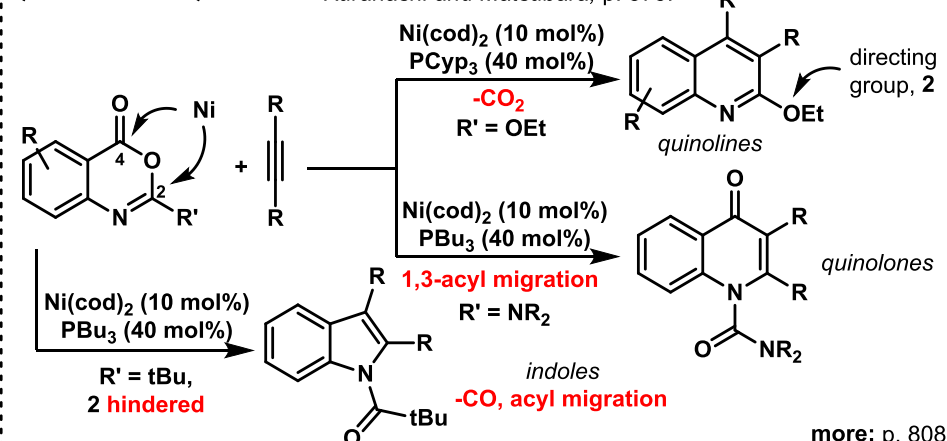


Nickel-catalyzed Decarbonylative Cycloaddition of Phthalic Anhydrides with 1,3-Dienes. Kurahashi and Matsubara, p. 322.

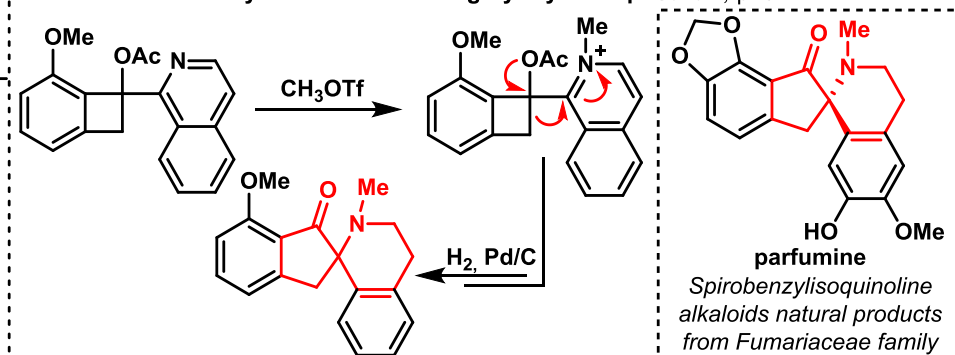


Alkynes: JACS, 2008, 17226; Phthalimides and Alkynes: JACS, 2013, 13636; Thiophthalic Anhydrides and Alkynes: OL, 2011, 1912; Allenes: OL, 2011, 1374; Phthalimides and dienes: OL, 2010, 4548; Anthranilic Acids with Alkynes: OL, 2011, 1206.

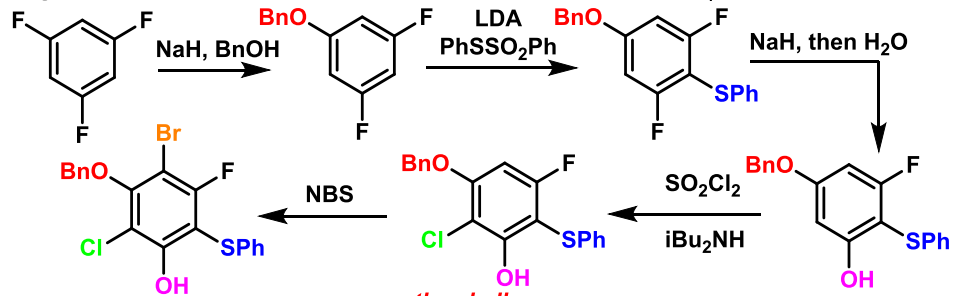
Nickel-catalyzed Cycloadditions of Benzoxazinones with Alkynes: Synthesis of Quinolines and Quinolones. Kurahashi and Matsubara, p. 375.



Ring expansion Approach to Azaspiro[4.5]decane Skeletons via Electrophilic Activation of Benzocyclobutenols Bearing Pyridyl Group. Suzuki, p. 612.

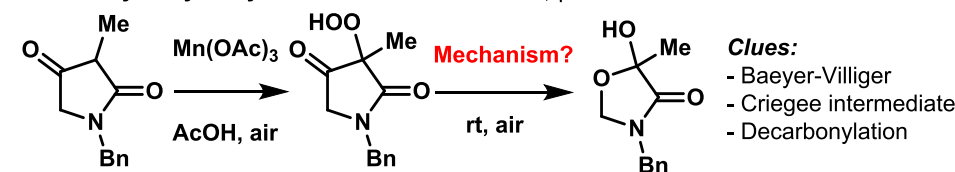


Regioselective Approach to Multisubstituted Benzenes. Suzuki, p.744.

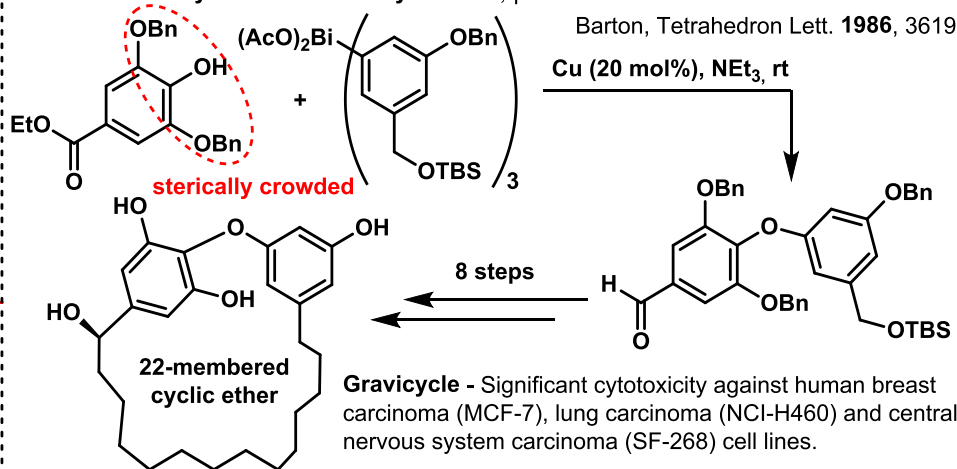


-the challenge-

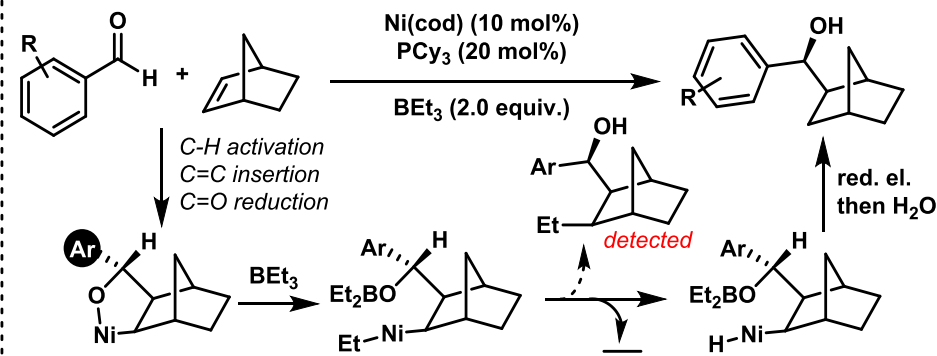
Spontaneous Conversion of 3-Alkyl-substituted 3-Hydroperoxy-pyrrolidine-2,4-diones into 5-Alkyl-5-hydroxyoxazolidin-4-ones. Nishino, p.1349.



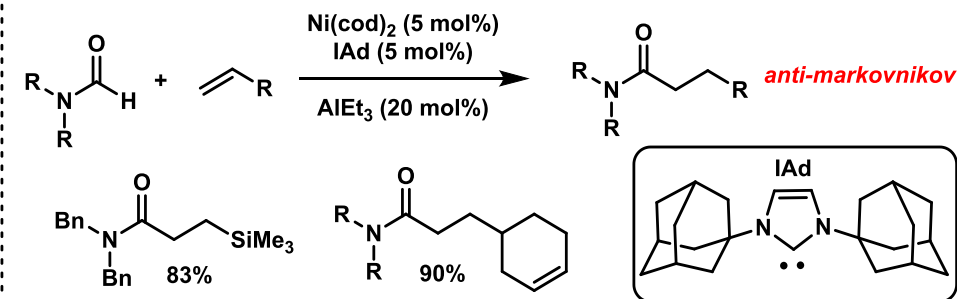
The First Total Synthesis of Gravicycle. Sato, p. 87.



Nickel-catalyzed Diastereoselective Reductive Coupling Reaction of Norbornene with Aldehydes in the Presence of Triethylborane. Ogata and Fukuzawa, p.157.

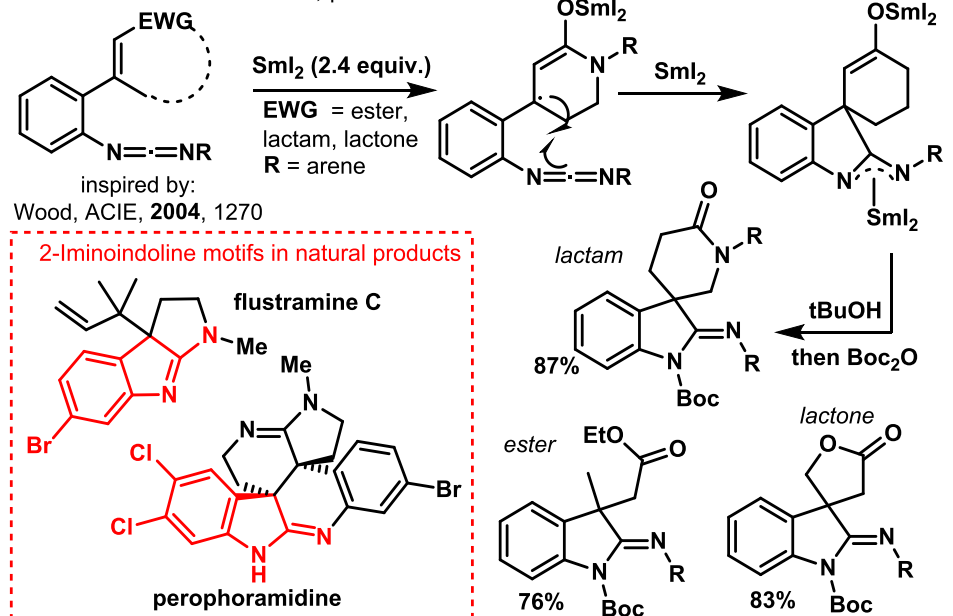


Regioselective Hydrocarbamylation of 1-Alkenes. Nakao and Hiyama, p. 298.

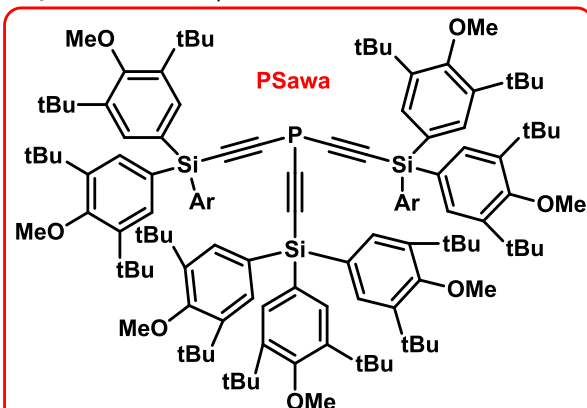
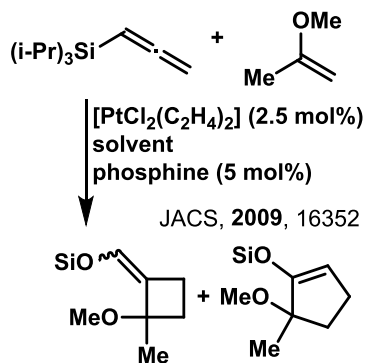


2012

Synthesis of 2-Iminoindolines via Samarium Diodide Mediated Reductive Cyclization of Carbodiimides. Takemoto, p.1349.

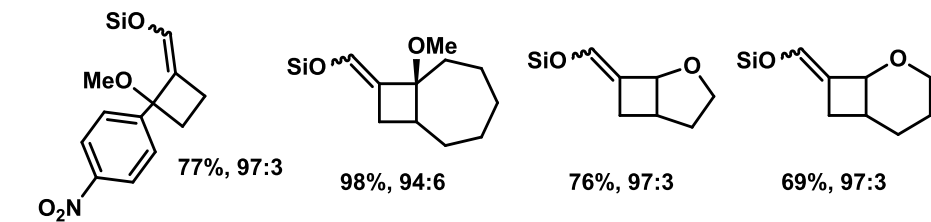


Selective Intermolecular [2+2] Cycloaddition Reaction Using Platinum(II) Catalyst with Hollow-Shaped Triethynylphosphine. *Iwasawa*, p. 786.

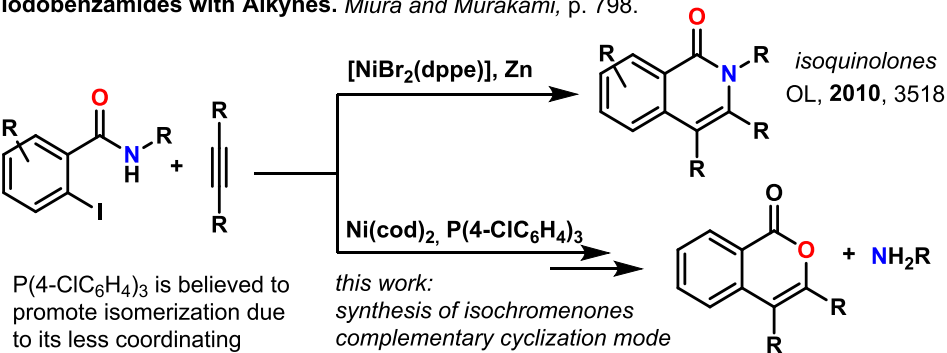


Sawamura's phosphine (JACS, 2006, 16486)
Rigid tripodal framework with minimum steric demand around the phosphorus center. *t*Bu protect the alkynes enabling the use of this class of compounds as phosphorus ligands. More applications: OL, 2008, 5051; OL, 2010, 4380; etc.

PPh ₃	62	38
P(OEt) ₃	59	41
P(CCSiMe ₃) ₃	64	36
PSawa	95	5

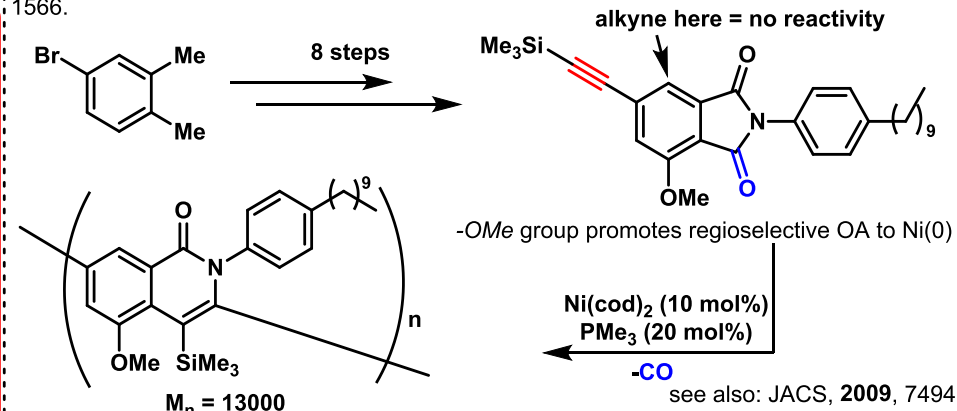


Synthesis of (1*H*)-Isochromen-1-imines by Nickel-catalyzed reaction of 2-iodobenzamides with Alkynes. *Miura and Murakami*, p. 798.

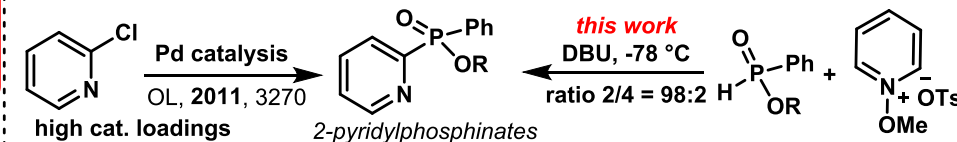


P(4-ClC₆H₄)₃ is believed to promote isomerization due to its less coordinating character

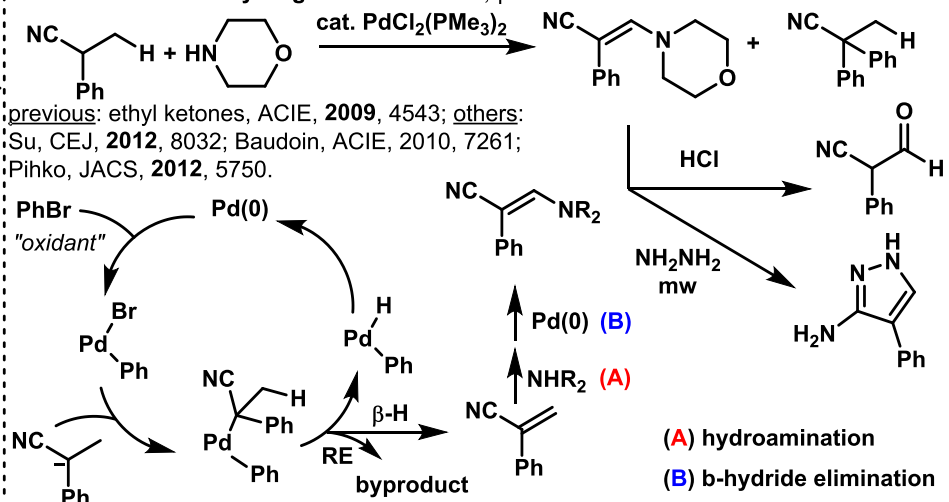
Nickel-catalyzed Decarbonylative Polymerization of 5-Alkynylphthalimides: A New Methodology for the Preparation of Polyheterocycles. *Kurahashi and Matsubara*, p. 1566.

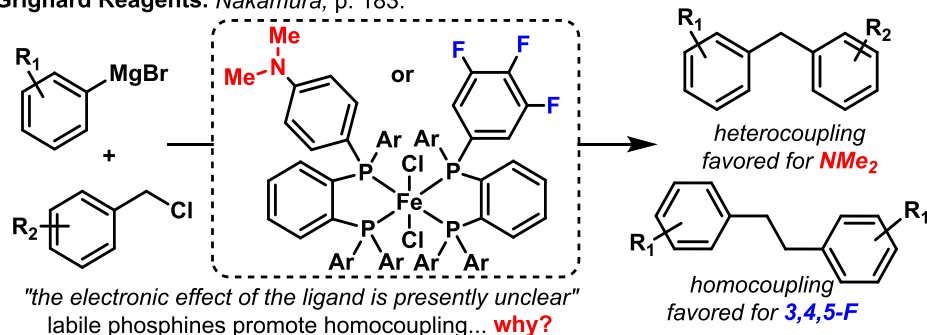


Synthesis of 2-Pyridylphosphinate and Thiophosphinate Derivatives by Nucleophilic Aromatic Substitution of *N*-Methoxypyridinium Tosylates. *Oka*, p. 1630.

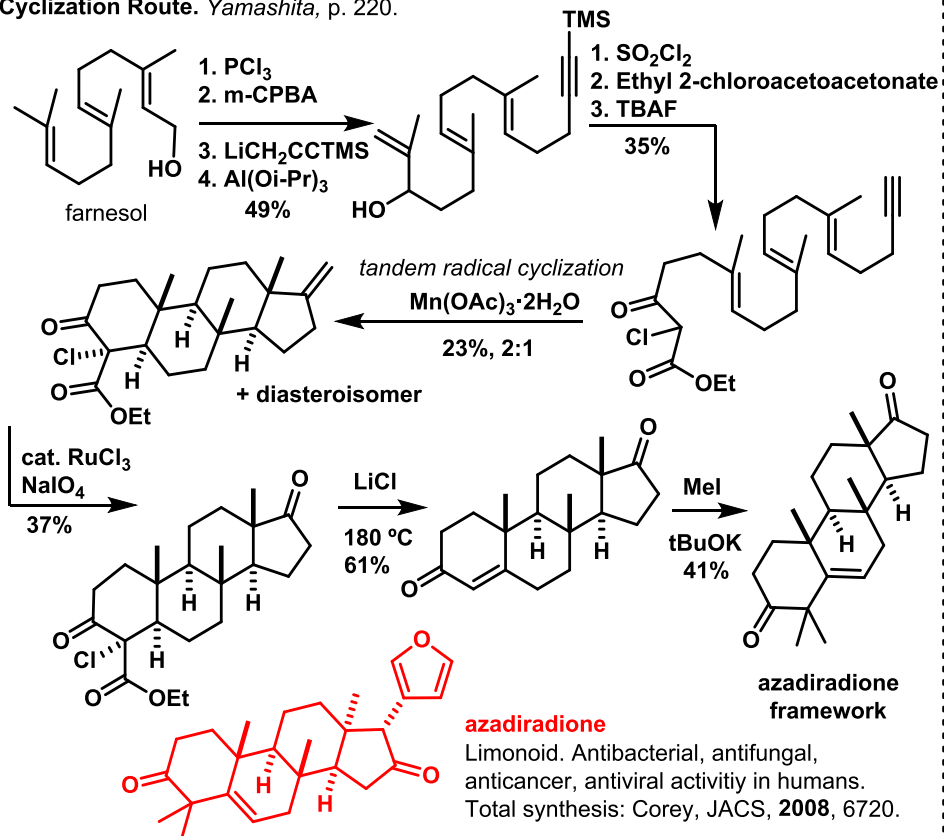
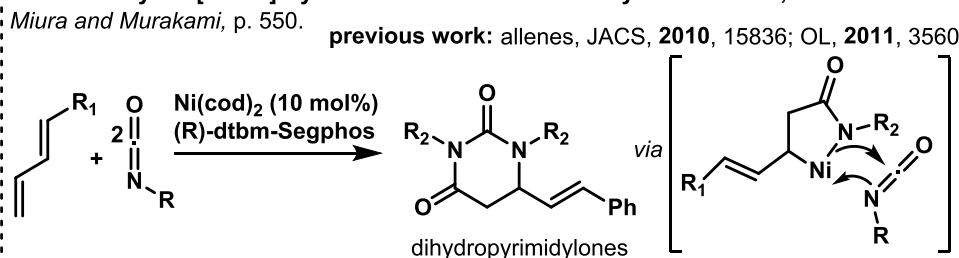
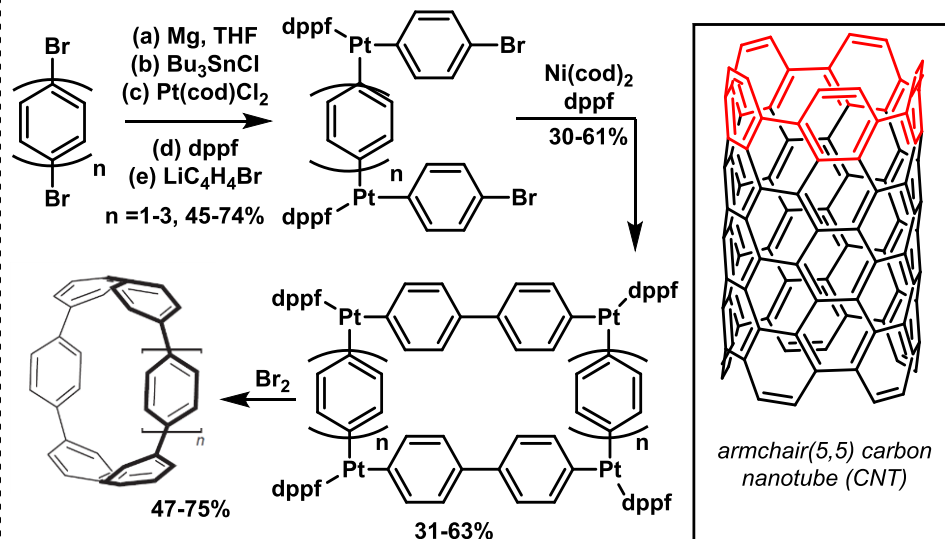


2013
 β -Amination of Saturated Nitriles through Palladium-catalyzed Dehydrogenation, 1,4-Addition and Re-dehydrogenation. *Kuwano*, p. 40.



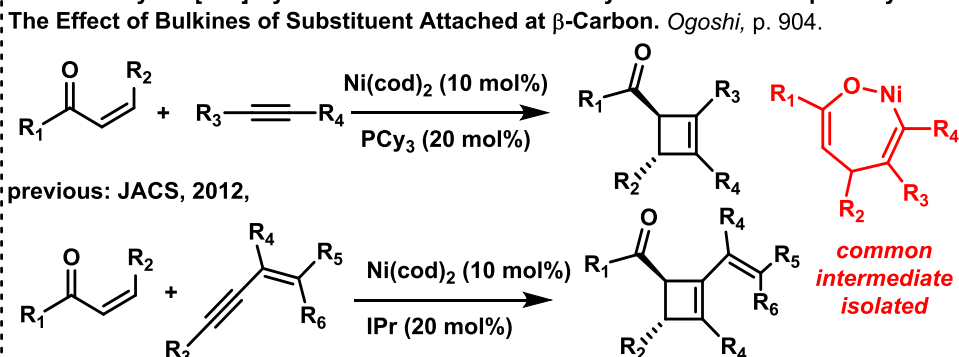
Ligand-controlled Iron-catalyzed Cross Coupling of Benzylic Chlorides with Aryl Grignard Reagents. *Nakamura*, p. 183.

Fe(I) species are usually invoked, see: *JACS*, 2009, 6078; *JACS*, 2012, 10333.

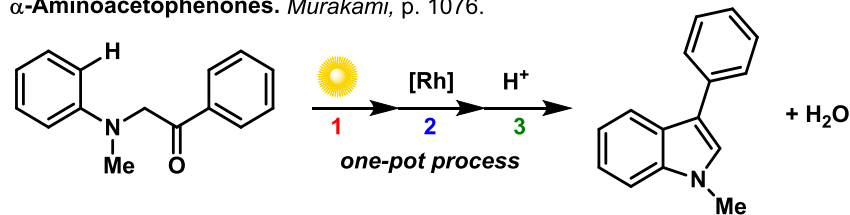
Concise Synthesis of the Tetracyclic Framework of Azadiradione: Tandem Radical Cyclization Route. *Yamashita*, p. 220.Nickel-catalyzed [2+2] Cycloaddition Reaction of Isocyanates with 1,3-dienes. *Miura and Murakami*, p. 550.Selective Synthesis of [6]-, [8]- and [10]Cycloparaphenylenes. *Yamago*, p. 621.

applications: electronic, seed...

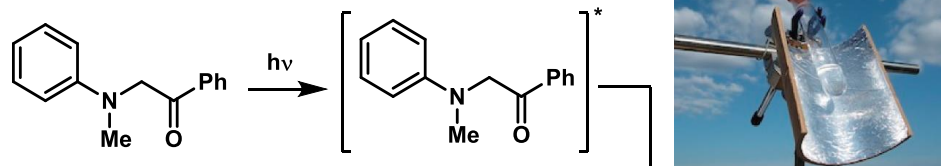
Previous methods: Bertozzi, *JACS*, 2008, 17646

Nickel-catalyzed [2+2] Cycloaddition Reaction of IBulky Enones with Simple Alkynes. The Effect of Bulky Substituent Attached at β-Carbon. *Ogoshi*, p. 904.

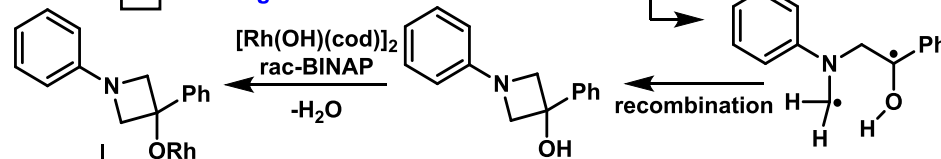
Construction of Indole Skeletons by Sequential Actions of Sunlight and Rhodium on α -Aminoacetophenones. Murakami, p. 1076.



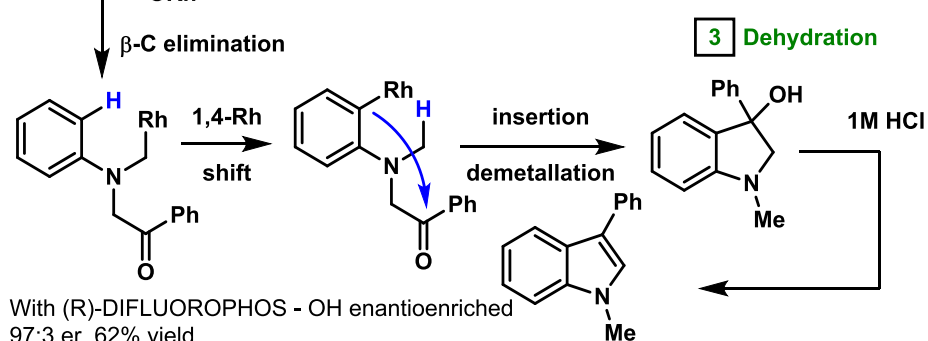
1 Photocyclization



2 Rearrangement

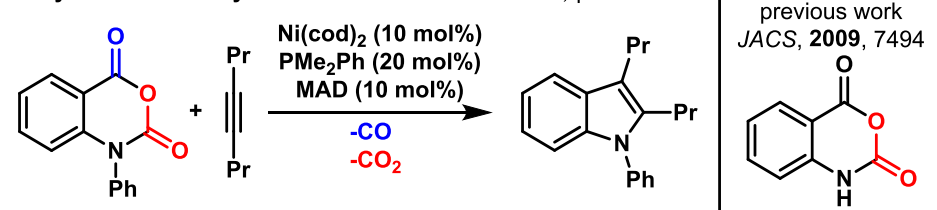


3 Dehydration



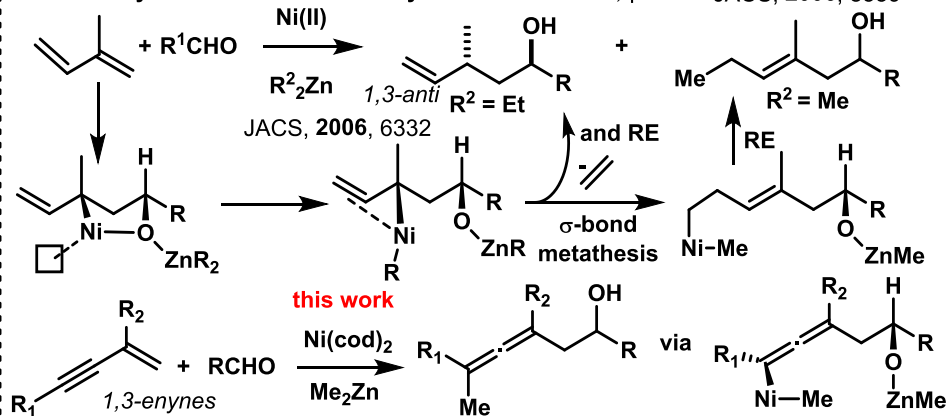
With (R)-DIFLUOROPHOS - OH enantioenriched
97:3 er, 62% yield

Nickel-catalyzed Decarbonylative and Decarboxylative Cycloaddition of Isatonic Anhydrides with Alkynes. Kurahashi and Matsubara, p. 1238.

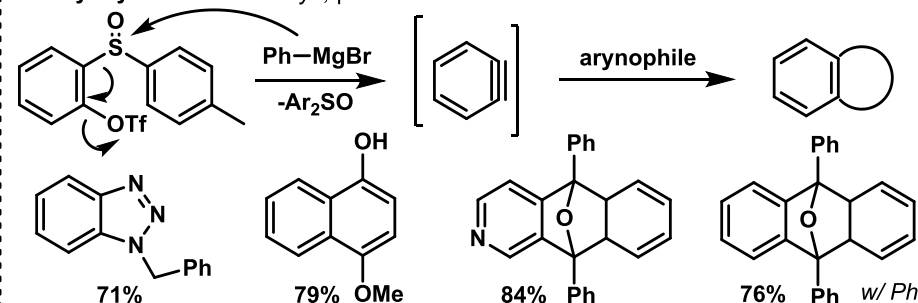


2014

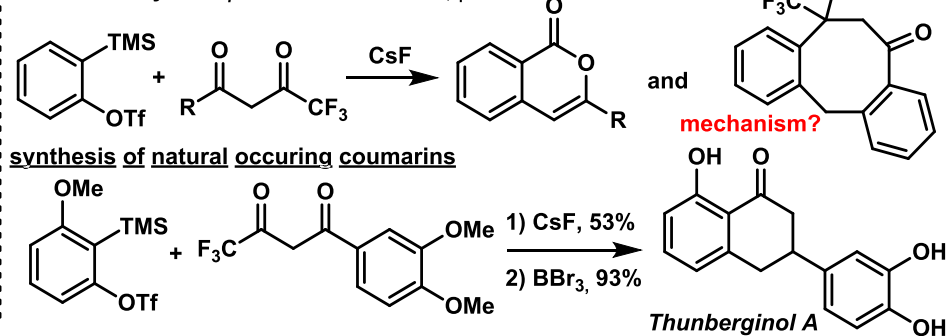
Ni-catalyzed Three-component Coupling Reaction of Conjugated Enyne, Carbonyls and Dimethylzinc to Construct Allenyl Alcohols. Kimura, p. 97. JACS, 2006, 8559



Generation of Arynes Triggered by Sulfoxide-Metal Exchange Reaction of ortho-Sulfinylaryl Triflates. Hosoya, p. 116.

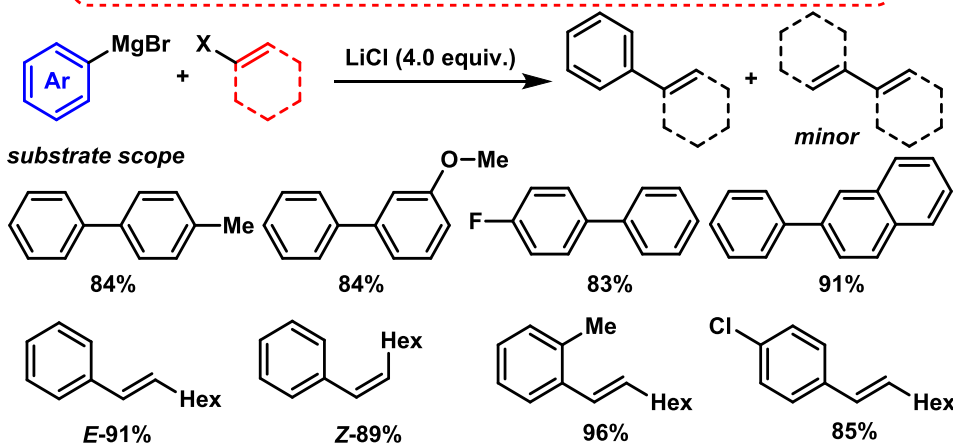
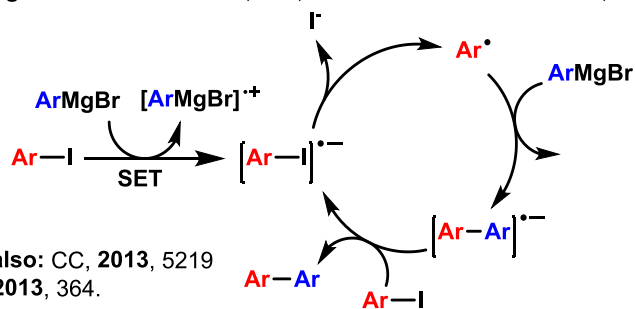


Novel One-pot Synthesis of Polysubstituted Isocoumarins from Arynes and Trifluoroacetylated β -Diketones. Okuma, p. 492

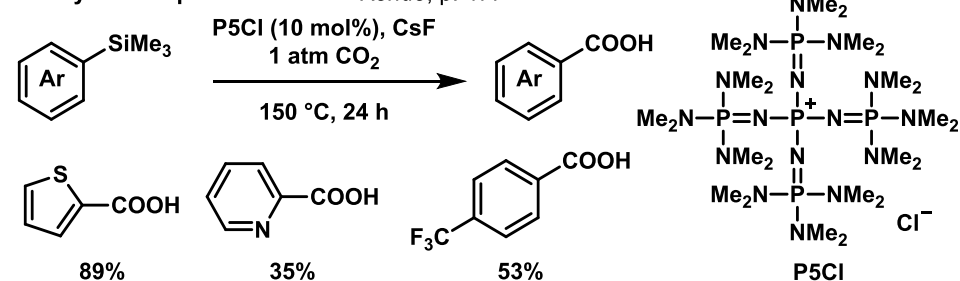


Improved Procedure for Single-electron-transfer-induced Grignard Cross-Coupling Reaction. *Shirakawa*, p. 922

Original work: *ACIE* 2012, 218; limitations = solvent removal, Ar-I



Desilylative Carboxylation of Aryltrimethylsilanes Using CO₂ in the Presence of Catalytic Phosphazanium Salt. *Kondo*, p. 477



Phosphazanium cation is considered to play an important role in acceleration of the desilylation step as well as the addition of carbon dioxide previous methodologies: transition metals, Friedel-Crafts, high CO₂ pressure

↑ **TOP Highlight Reviews in Chem. Lett. (most cited/relevant)**

Overview of the Mechanistic Work on the Concerted Metallation-Deprotonation Pathway. *Fagnou*, *Chem. Lett.* 2010, 1118.

"I have chosen to review the different mechanisms that metals may cleave aromatic C-H bonds with a focus on those leading to successful catalysis. My hope is that this will be a very timely review and may inspire others in the catalysis field." K. Fagnou passed away November 2009, the review was finished by one of his co-authors.

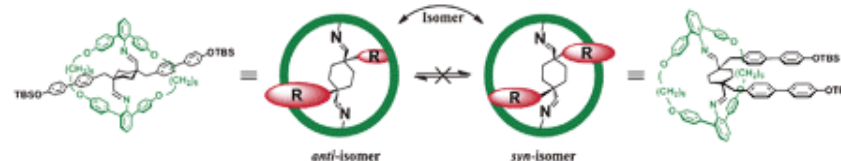
Nickel Catalysts/*N,N'*-Bidentate Directing Groups: An Excellent Partnership in Directed C-H Activation Reactions. *Chatani*, *Chem. Lett.* 2015, 410.

Catalytic Direct Arylation of Heteroaromatic Compounds. *Sato* and *Miura*, *Chem. Lett.* 2007, 200.

Advances in Iron Catalyzed Cross Coupling Reactions. *Fürstner*, *Chem. Lett.* 2005, 624.

Topics **not covered** in this 5-years review of Chemistry Letters

Molecular Gyroscope with a trans-Cyclohexane-1,4-diimine Rotor Unit: Isolation and Characterization of a Geometric Isomer as a Formal Intermediate of Hindered Rotation. *Suzuki* and *Kawai*, *Chem. Lett.* 2012, 12.



A Facile Chromatographic Method for Purification of Pinacol Boronic Esters. *Isobe*, *Chem. Lett.* 2012, 972.

Impregnation of silica gel with boric acid was effective both for thin layer chromatography (TLC) and for flash column chromatography. Purification of a series of pinacol boronic esters was successful by suppressing loss of the compounds due to over-adsorption.



How Does Methanol Assist the Hydrogen Transfer in Pd-catalyzed Cyclocarbonylation of Allylic Alcohols? Insights from a DFT Study. *Lei*, *Chem. Lett.* 2012, 693.

