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1. *ASYMMETRIC NUCLEOPHILIC CATALYSIS*
  2. *NEW CHIRAL LIGANDS FOR TRANSITION METAL-CATALYZED REACTIONS*
  3. *PALLADIUM- AND NICKEL-CATALYZED COUPLING REACTIONS*
  4. *CHEMISTRY OF BORON HETEROCYCLES*
  5. *APPLICATIONS OF ORGANOTIN COMPOUNDS*
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### 1. *ASYMMETRIC NUCLEOPHILIC CATALYSIS*

**Applications of Aza- and Phosphoferrocenes and Related Compounds in Asymmetric Catalysis**  
Submitted.

Marion, N. M.; Fu, G. C.

**Phosphine-Catalyzed Enantioselective Synthesis of Oxygen Heterocycles**

*Angew. Chem. Int. Ed.*, accepted.

Chung, Y. K.; Fu, G. C.

**Catalytic Asymmetric Cycloaddition of Ketenes and Nitroso Compounds: Enantioselective Synthesis of  $\alpha$ -Hydroxycarboxylic Acid Derivatives**

*Angew. Chem. Int. Ed.*, accepted.

Dochnahl, M.; Fu, G. C.

**Enantioselective Nucleophilic Catalysis: The Synthesis of Aza- $\beta$ -Lactams via [2+2] Reactions of Ketenes with Azo Compounds**

*Angew. Chem. Int. Ed.* **2008**, *47*, 7048–7050.

Berlin, J. M.; Fu, G. C.

**Synthesis and Resolution of Planar-Chiral Derivatives of 4-(Dimethylamino)pyridine**

*Adv. Synth. Catal.* **2007**, *349*, 2345–2352.

Wurz, R. P.; Lee, E. C.; Ruble, J. C.; Fu, G. C.

**Enantioselective Synthesis of Protected Amines by the Catalytic Asymmetric Addition of Hydrazoic Acid to Ketenes**

*Angew. Chem., Int. Ed.* **2007**, *46*, 4367–4369.

Dai, X.; Nakai, T.; Romero, J. A. C.; Fu, G. C.

**Catalytic Asymmetric Synthesis of Tertiary Alkyl Chlorides**

*Angew. Chem., Int. Ed.* **2007**, *46*, 977–979.

Lee, E. C.; McCauley, K. M.; Fu, G. C.

**Planar-Chiral Heterocycles as Enantioselective Organocatalysts**

*Asymmetric Synthesis, The Essentials*; Bräse, S., Christmann, M., Eds.; Wiley-VCH: New York; pp 186–190.

Fu, G. C.

**Applications of Planar-Chiral Heterocycles as Ligands in Asymmetric Catalysis**

*Acc. Chem. Res.* **2006**, *39*, 853–860.

Fu, G. C.

**Kinetic Resolutions of Indolines by a Non-Enzymatic Acylation Catalyst**

*J. Am. Chem. Soc.* **2006**, *128*, 14264–14265.

Arp, F. O.; Fu, G. C.

**Asymmetric [3+2] Annulations Catalyzed by a Planar-Chiral Derivative of DMAP**

*Chem. Commun.* **2006**, 2604–2606.

Bappert, E.; Mueller, P.; Fu, G. C.

**Synthesis of Functionalized Cyclopentenes via Catalytic Asymmetric [3+2] Cycloadditions of Allenes with Enones**

*Angew. Chem., Int. Ed.* **2006**, *45*, 1426–1429.

Wilson, J. E.; Fu, G. C.

**Umpolung of Michael Acceptors Catalyzed by *N*-Heterocyclic Carbenes**

*J. Am. Chem. Soc.* **2006**, *128*, 1472–1473.

Fischer, C.; Smith, S. W.; Powell, D. A.; Fu, G. C.

**Catalytic Asymmetric Synthesis of Piperidine Derivatives Through the [4+2] Annulation of Imines with Allenes**

*J. Am. Chem. Soc.* **2005**, *127*, 12234–12235.

Wurz, R. P.; Fu, G. C.

**Catalytic Asymmetric Staudinger Reactions to Form  $\beta$ -Lactams: An Unanticipated Dependence of Diastereoselectivity on the Choice of Nitrogen Substituent**

*J. Am. Chem. Soc.* **2005**, *127*, 11586–11587.

Lee, E. C.; Hodous, B. L.; Bergin, E.; Shih, C.; Fu, G. C.

**Catalytic Asymmetric Couplings of Ketenes with Aldehydes to Generate Enol Esters**

*Angew. Chem., Int. Ed.* **2005**, *44*, 4606–4608.

Schaefer, C.; Fu, G. C.

**Catalytic Asymmetric Synthesis of Esters from Ketenes**

*J. Am. Chem. Soc.* **2005**, *127*, 6176–6177.

Wiskur, S. L.; Fu, G. C.

**Catalytic Enantioselective Construction of All-Carbon Quaternary Stereocenters: Synthetic and Mechanistic Studies of the C-Acylation of Silyl Ketene Acetals**

*J. Am. Chem. Soc.* **2005**, *127*, 5604–5607.

Mermerian, A. H.; Fu, G. C.

**Nucleophile-Catalyzed Asymmetric Acylations of Silyl Ketene Imines: Application to the Enantioselective Synthesis of Verpamil**

*Angew. Chem., Int. Ed.* **2005**, *44*, 949-952.

Mermerian, A. H.; Fu, G. C.

**Asymmetric Synthesis of  $\beta$ -Lactones by Nucleophilic-Catalyzed [2+2] Cycloadditions of Disubstituted Ketenes and Aldehydes**

*Angew. Chem., Int. Ed.* **2004**, *43*, 6358-6360.

Wilson, J. E.; Fu, G. C.

**Asymmetric Catalysis with "Planar-Chiral" Derivatives of 4-(Dimethylamino)pyridine**

*Acc. Chem. Res.* **2004**, *37*, 542-547.

Fu, G. C.

**Catalytic Enantioselective Synthesis of Oxindoles and Benzofuranones that Bear a Quaternary Stereocenter**

*Angew. Chem. Int. Ed.* **2003**, *42*, 3921-3924.

Hills, I. D.; Fu, G. C.

**Catalytic Enantioselective Synthesis of Quaternary Stereocenters via Intermolecular CAcylation of Silyl Ketene Acetals: Dual Activation of the Electrophile and the Nucleophile**

*J. Am. Chem. Soc.* **2003**, *125*, 4050-4051.

Mermerian, A. H.; Fu, G. C.

**Enantioselective Addition of Amines to Ketenes Catalyzed by a Planar-Chiral Derivative of PPY: Possible Intervention of Chiral Brønsted-Acid Catalysis**

*J. Am. Chem. Soc.* **2002**, *124*, 10006-10007.

Hodous, B. L.; Fu, G. C.

**Enantioselective Staudinger Synthesis of  $\beta$ -Lactams Catalyzed by a Planar-Chiral Nucleophile**

*J. Am. Chem. Soc.* **2002**, *124*, 1578-1579.

Hodous, B. L.; Fu, G. C.

**Applications of "Planar-Chiral" Heterocycles in Asymmetric Catalysis**

*Pure Appl. Chem.* **2001**, *73*, 1113-1116.

Fu, G. C.

**Asymmetric Catalysis with "Planar-Chiral" Heterocycles**

*Pure Appl. Chem.* **2001**, *73*, 347-349.

Fu, G. C.

**Planar-Chiral Pyridine N-Oxides, a New Family of Asymmetric Catalysts: Exploiting an  $\eta^5$ -C<sub>5</sub>Ar<sub>5</sub> Ligand to Achieve High Enantioselectivity**

*J. Am. Chem. Soc.* **2001**, *123*, 353-354.

Tao, B.; Lo, M. M.-C.; Fu, G. C.

**Kinetic Resolution of Amines by a Non-Enzymatic Acylation Catalyst**

*Angew. Chem. Int. Ed.* **2001**, *40*, 234-236.

Arai, S.; Bellemin-Laponnaz, S.; Fu, G. C.

**Enantioselective Nucleophilic Catalysis with "Planar-Chiral" Heterocycles**

*Acc. Chem. Res.* **2000**, *33*, 412-420.

Fu, G. C.

**The Kinetic Resolution of Allylic Alcohols by a Non-Enzymatic Acylation Catalyst; Application to Natural Product Synthesis**

*Chem. Commun.* **2000**, 1009-1010.

Bellemin-Laponnaz, S.; Tweddell, J.; Ruble, J. C.; Breitling, F. M.; Fu, G. C.

**The First Synthesis and Resolution of a Planar-Chiral Tetrahydroindolyl Complex of Iron: Electronic Tuning of Reactivity and Enantioselective Nucleophilic Catalysis**

*Chirality* (Spec. Issue) **2000**, *12*, 318-324.

Suginome, M.; Fu, G. C.

**From Planarity to Chirality**

*Chem. Innovation* **2000**, *30*, 3-5.

Fu, G. C.

**A New Benchmark for the Non-Enzymatic Enantioselective Acylation of Amines. Use of a Planar-Chiral Derivative of 4-Pyrrolidinopyridine as the Acylating Agent**

*Chem. Commun.* **2000**, 119-120.

Ie, Y.; Fu, G. C.

**Non-Enzymatic Kinetic Resolution of Propargylic Alcohols by a Planar-Chiral DMAP Derivative; Crystallographic Characterization of the Acylated Catalyst**

*J. Am. Chem. Soc.* **1999**, *121*, 5091-5092.

Tao, B.; Ruble, J. C.; Hoic, D. A.; Fu, G. C.

**Enantioselective Addition of Alcohols to Ketenes Catalyzed by a Planar-Chiral Azaferrocene: Catalytic Asymmetric Synthesis of Arylpropionic Acids**

*J. Am. Chem. Soc.* **1999**, *121*, 2637-2638.

Hodous, B. L.; Ruble, J. C.; Fu, G. C.

**Enantioselective Construction of Quaternary Stereocenters: Rearrangements of O-Acylated Azlactones Catalyzed by a Planar-Chiral Derivative of 4-(Pyrrolidino)pyridine**

*J. Am. Chem. Soc.* **1998**, *120*, 11532-11533.

Ruble, J. C.; Fu, G. C.

**Nucleophilic Catalysis with  $\pi$ -Bound Nitrogen Heterocycles: Synthesis of the First Ruthenium Catalysts and Comparison of the Reactivity and the Enantioselectivity of Ruthenium and Iron Complexes**

*J. Am. Chem. Soc.* **1998**, *120*, 7479-7483.

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**Dynamic Kinetic Resolutions Catalyzed by a Planar-Chiral Derivative of DMAP:  
Enantioselective Synthesis of Protected  $\alpha$ -Amino Acids from Racemic Azlactones**

*J. Org. Chem.* **1998**, *63*, 3154-3155.

Liang, J.; Ruble, J. C.; Fu, G. C.

**Kinetic Resolution of Aryl Alkyl Carbinols Catalyzed by a Planar-Chiral Derivative of DMAP:  
A New Benchmark for Non-Enzymatic Acylation**

*J. Org. Chem.* **1998**, *63*, 2794-2795.

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**$\pi$ -Bound Phosphorus Heterocycles as Catalysts: Ring Opening of Epoxides with TMSCl in the  
Presence of a Phosphaferrocene**

*J. Org. Chem.* **1997**, *62*, 4534-4535.

Garrett, C. E.; Fu, G. C.

**Effective Kinetic Resolution of Secondary Alcohols with a Planar-Chiral Analogue of DMAP.  
Use of the Fe(C<sub>5</sub>Ph<sub>5</sub>) Group in Asymmetric Catalysis**

*J. Am. Chem. Soc.* **1997**, *119*, 1492-1493.

Ruble, J. C.; Latham, H. A.; Fu, G. C.

**Chiral  $\pi$ -Complexes of Heterocycles with Transition Metals: A Versatile New Family of  
Nucleophilic Catalysts**

*J. Org. Chem.* **1996**, *61*, 7230-7231.

Ruble, J. C.; Fu, G. C.

## 2. NEW CHIRAL LIGANDS FOR TRANSITION METAL-CATALYZED REACTIONS

### **Copper-Catalyzed Asymmetric N-H Insertion Reactions: Couplings of Diazo Compounds with Carbamates to Generate $\alpha$ -Amino Acids**

*J. Am. Chem. Soc.* **2007**, *129*, 12066–12067.

Lee, E. C.; Fu, G. C.

### **Copper-Catalyzed Asymmetric [4+1] Cycloadditions of Enones with Diazo Compounds to Form Dihydrofurans**

*J. Am. Chem. Soc.* **2007**, *129*, 1046–1047.

Son, S.; Fu, G. C.

### **Catalytic Enantioselective O-H Insertion Reactions**

*J. Am. Chem. Soc.* **2006**, *128*, 4594–4595.

Maier, T. C.; Fu, G. C.

### **Kinetic Resolutions of Azomethine Imines via Copper-Catalyzed [3+2] Cycloadditions**

*J. Am. Chem. Soc.* **2005**, *127*, 11244–11245.

Suárez, A.; Downey, C. W.; Fu, G. C.

### **Catalytic Asymmetric Synthesis of Piperidine Derivatives Through the [4+2] Annulation of Imines with Allenes**

*J. Am. Chem. Soc.* **2005**, *127*, 11586–11587.

Wurz, R. P.; Fu, G. C.

### **A New Copper-Catalyzed [3+2] Cycloaddition: Enantioselective Coupling of Terminal Alkynes with Azomethine Imines to Generate Five-Membered Nitrogen Heterocycles**

*J. Am. Chem. Soc.* **2003**, *125*, 10778–10779.

Shintani, R.; Fu, G. C.

### **Catalytic Enantioselective Synthesis of $\beta$ -Lactams: Intramolecular Kinugasa Reactions and Interception of an Intermediate in the Reaction Cascade**

*Angew. Chem. Int. Ed.* **2003**, *42*, 4082–4085.

Shintani, R.; Fu, G. C.

### **Copper-Catalyzed Enantioselective Conjugate Addition of Diethylzinc to Acyclic Enones in the Presence of Planar-Chiral Phosphaferrocene-Oxazoline Ligands**

*Org. Lett.* **2002**, *4*, 3699–3702.

Shintani, R.; Fu, G. C.

### **Application of a New Family of P,N-Ligands to the Highly Enantioselective Hydrosilylation of Aryl Alkyl and Dialkyl Ketones**

*Angew. Chem. Int. Ed.* **2002**, *41*, 3892–3894.

Tao, B.; Fu, G. C.

**Cu(I)/Bis(azaferrocene)-Catalyzed Enantioselective Synthesis of  $\beta$ -Lactams via Couplings of Alkynes with Nitrones**

*J. Am. Chem. Soc.* **2002**, *124*, 4572-4573.

Lo, M. M.-C.; Fu, G. C.

**A Versatile New Catalyst for the Enantioselective Isomerization of Allylic Alcohols to Aldehydes: Scope and Mechanistic Studies**

*J. Org. Chem.* **2001**, *66*, 8177-8186.

Tanaka, K.; Fu, G. C.

**Synthesis, Structure, and Reactivity of  $C_2$ -Symmetric Bis(phospholy)zirconium and Bis(phospholy)hafnium Complexes**

*Organometallics* **2001**, *20*, 3453-3458.

Bellemin-Laponnaz, S.; Lo, M. M.-C.; Peterson, T. H.; Allen, J. M.; Fu, G. C.

**Applications of Planar-Chiral Heterocycles in Enantioselective Catalysis:**

**Cu(I)/Bisazaferrocene-Catalyzed Asymmetric Ring Expansion of Oxetanes to Tetrahydrofurans**

*Tetrahedron* (Spec. Issue) **2001**, *57*, 2621-2634.

Lo, M. M.-C.; Fu, G. C.

**Synthesis and Application of Planar-Chiral Phosphaferrocene-Oxazolines, a New Class of P,N-Ligands**

*Org. Lett.* **2000**, *2*, 3695-3697.

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**Enantioselective Isomerization of Allylic Alcohols Catalyzed by a Rhodium/Phosphaferrocene Complex**

*J. Am. Chem. Soc.* **2000**, *122*, 9870-9871.

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**Synthesis, Resolution, and Crystallographic Characterization of a New,  $C_2$ -Symmetric, Planar-Chiral Bipyridine Ligand. Application to the Catalytic Enantioselective Cyclopropanation of Olefins**

*Chem. Commun.* **2000**, 377-378.

Rios, R.; Liang, J.; Lo, M. M.-C.; Fu, G. C.

**A New Class of Planar-Chiral Ligands: The Synthesis of a  $C_2$ -Symmetric Bisazaferrocene and its Application in the Enantioselective Cu(I)-Catalyzed Cyclopropanation of Olefins**

*J. Am. Chem. Soc.* **1998**, *120*, 10270-10271.

Lo, M. M.-C.; Fu, G. C.

**The First Application of a Planar-Chiral Phosphorus Heterocycle in Asymmetric Catalysis: Enantioselective Hydrogenation of Dehydroamino Acids**

*J. Org. Chem.* **1998**, *63*, 4168-4169.

Qiao, S.; Fu, G. C.

**Synthesis, Resolution, and Crystallographic Characterization of a C<sub>2</sub>-Symmetric  
Diphosphaferrocene**

*Organometallics* **1998**, *17*, 773-774.

Qiao, S.; Hoic, D. A.; Fu, G. C.

**Planar-Chiral Heterocycles as Ligands in Metal-Catalyzed Processes: Enantioselective Addition  
of Organozinc Reagents to Aldehydes**

*J. Org. Chem.* **1997**, *62*, 444-445.

Dosa, P. I.; Ruble, J. C.; Fu, G. C.

### 3. PALLADIUM- AND NICKEL-CATALYZED COUPLING REACTIONS

#### **Catalytic Asymmetric Cross-Couplings of Racemic $\alpha$ -Bromoketones with Arylzinc Reagents**

*Angew. Chem. Int. Ed.*, accepted.

Lundin, P. M.; Esquivias, J.; Fu, G. C.

#### **Development of Versatile Methods for Palladium-Catalyzed Coupling Reactions of Aryl Electrophiles Through the Use of P(*t*-Bu)<sub>3</sub> and PCy<sub>3</sub> as Ligands**

*Acc. Chem. Res.* **2008**, *41*, 1555–1564.

Fu, G. C.

#### **Nickel-Catalyzed Negishi Cross-Couplings of Secondary Nucleophiles with Secondary Propargylic Electrophiles at Room Temperature**

*Angew. Chem. Int. Ed.* **2008**, *47*, 9334–9336.

Smith, S. W.; Fu, G. C.

#### **Nickel-Catalyzed Asymmetric Cross-Couplings of Racemic Propargylic Halides with Arylzinc Reagents**

*J. Am. Chem. Soc.* **2008**, *130*, 12645–12647.

Smith, S. W.; Fu, G. C.

#### **Enantioselective Alkyl–Alkyl Suzuki Cross-Couplings of Unactivated Homobenzylic Halides**

*J. Am. Chem. Soc.* **2008**, *130*, 6694–6695.

Saito, B.; Fu, G. C.

#### **Catalytic Asymmetric Hiyama Cross-Couplings of Racemic $\alpha$ -Bromo Esters**

*J. Am. Chem. Soc.* **2008**, *130*, 3302–3303.

Dai, X.; Strotman, N. A.; Fu, G. C.

#### **Nickel-Catalyzed Asymmetric Negishi Cross-Couplings of Secondary Allylic Chlorides with Alkylzincs**

*J. Am. Chem. Soc.* **2008**, *130*, 2756–2757.

Son, S.; Fu, G. C.

#### **Intramolecular Heck Reactions of Unactivated Alkyl Halides**

*J. Am. Chem. Soc.* **2007**, *129*, 11340–11341.

Firmansjah, L.; Fu, G. C.

#### **Alkyl–Alkyl Suzuki Cross-Couplings of Unactivated Secondary Alkyl Halides at Room Temperature**

*J. Am. Chem. Soc.* **2007**, *129*, 9602–9603.

Saito, B.; Fu, G. C.

#### **Hiyama Reactions of Activated and Unactivated Secondary Alkyl Halides Catalyzed by Nickel/Norephedrine**

*Angew. Chem., Int. Ed.* **2007**, *46*, 3556–3558.

Strotman, N. A.; Sommer, S.; Fu, G. C.

**Aminoalcohols as Ligands for Nickel-Catalyzed Suzuki Reactions of Unactivated Alkyl Halides, Including Secondary Alkyl Chlorides, with Arylboronic Acids**

*J. Am. Chem. Soc.* **2006**, *128*, 5360-5361.

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**A Versatile Method for Suzuki Cross-Coupling Reactions of Nitrogen Heterocycles**

*Angew. Chem., Int. Ed.* **2006**, *45*, 1282-1284.

Kudo, N.; Perseghini, M.; Fu, G. C.

**Catalytic Enantioselective Negishi Reactions of Racemic Secondary Benzylic Halides**

*J. Am. Chem. Soc.* **2005**, *127*, 10482-10483.

Arp, F. O.; Fu, G. C.

**Palladium-Catalyzed Cross-Coupling Reactions of Unactivated Alkyl Electrophiles with Organometallic Compounds**

*Topics in Organometallic Chemistry: Palladium in Organic Synthesis*; Tsuji, J., Ed.; Springer: New York, 2005; pp 85-108.

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**Asymmetric Nickel-Catalyzed Negishi Cross-Couplings of Secondary  $\alpha$ -Bromo Amides with Organozinc Reagents**

*J. Am. Chem. Soc.* **2005**, *127*, 4594-4595.

Fischer, C.; Fu, G. C.

**Stille Cross-Couplings of Unactivated Secondary Halides using *Monoorganotin* Reagents**

*J. Am. Chem. Soc.* **2005**, *127*, 510-511.

Powell, D. A.; Maki, T.; Fu, G. C.

**Nickel-Catalyzed Cross-Couplings of Unactivated Alkyl Halides and Pseudohalides with Organometallic Compounds**

*Adv. Syn. Cat.* **2004**, *346*, 1525-1532.

Netherton, M. R.; Fu, G. C.

**Elucidating Reactivity Differences in Palladium-Catalyzed Coupling Processes: The Chemistry of Palladium Hydrides**

*J. Am. Chem. Soc.* **2004**, *126*, 13178-13179.

Hills, I. D.; Fu, G. C.

**Nickel-Catalyzed Cross-Couplings of Organosilicon Reagents with Unactivated Secondary Alkyl Bromides**

*J. Am. Chem. Soc.* **2004**, *126*, 7788-7789.

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**From the Design of a Chiral Lewis Acid Catalyst to Metal-Catalyzed Coupling Reactions**

*J. Org. Chem.* **2004**, *69*, 3245-3249.

Fu, G. C.

**Suzuki Cross-Couplings of Unactivated Secondary Alkyl Bromides and Iodides**

*J. Am. Chem. Soc.* **2004**, *126*, 1340-1341.

Zhou, J.-R.; Fu, G. C.

**Cross-Couplings of Alkyl Electrophiles Under "Ligandless" Conditions: Negishi Reactions of Organozirconium Reagents**

*J. Am. Chem. Soc.* **2004**, *126*, 82-83.

Wiskur, S. L.; Korte, A.; Fu, G. C.

**Cross-Couplings of Unactivated Secondary Alkyl Halides: Room-Temperature Nickel-Catalyzed Negishi Reactions of Alkyl Bromides and Iodides**

*J. Am. Chem. Soc.* **2003**, *125*, 14726-14727.

Zhou, J.-R.; Fu, G. C.

**Toward an Improved Understanding of the Unusual Reactivity of Pd(0)/Trialkylphosphine Catalysts in Cross-Couplings of Alkyl Electrophiles: Quantifying the Factors that Determine the Rate of Oxidative Addition**

*Angew. Chem. Int. Ed.* **2003**, *42*, 5749-5752.

Hills, I. D.; Netherton, M. R.; Fu, G. C.

**The First Applications of Carbene Ligands in Cross-Couplings of Alkyl Electrophiles: Sonogashira Reactions of Unactivated Alkyl Bromides and Iodides**

*J. Am. Chem. Soc.* **2003**, *125*, 13642-13643.

Eckhardt, M.; Fu, G. C.

**Ligands for Palladium-Catalyzed Cross-Couplings of Alkyl Halides: Use of an Alkyldiaminophosphine Expands the Scope of the Stille Reaction**

*Angew. Chem. Int. Ed.* **2003**, *42*, 5079-5082.

Tang, H.; Menzel, K.; Fu, G. C.

**Palladium-Catalyzed Negishi Cross-Coupling Reactions of Unactivated Alkyl Iodides, Bromides, Chlorides, and Tosylates**

*J. Am. Chem. Soc.* **2003**, *125*, 12527-12530.

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**Room-Temperature Hiyama Cross-Couplings of Arylsilanes with Alkyl Bromides and Iodides**

*J. Am. Chem. Soc.* **2003**, *125*, 5616-5617.

Lee, J.-Y.; Fu, G. C.

**Room-Temperature Stille Cross-Couplings of Alkenylltin Reagents and Functionalized Alkyl Bromides that Possess  $\beta$  Hydrogens**

*J. Am. Chem. Soc.* **2003**, *125*, 3718-3719.

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**Boronic Acids: New Coupling Partners in Room-Temperature Suzuki Reactions of Alkyl Bromides. Crystallographic Characterization of an Oxidative-Addition Adduct Generated Under Remarkably Mild Conditions**

*J. Am. Chem. Soc.* **2002**, *124*, 13662-13663.

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**Palladium-Catalyzed Coupling Reactions of Aryl Chlorides**

*Angew. Chem. Int. Ed.* **2002**, *41*, 4176-4211.

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**Suzuki Cross-Couplings of Alkyl Tosylates that Possess  $\beta$  Hydrogens: Synthetic and Mechanistic Studies**

*Angew. Chem. Int. Ed.* **2002**, *41*, 3910-3912.

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**The First Method for Achieving Palladium-Catalyzed Cross-Couplings of Simple Alkyl Chlorides: Suzuki Reactions Catalyzed by Pd<sub>2</sub>(dba)<sub>3</sub>/PCy<sub>3</sub>**

*Angew. Chem. Int. Ed.* **2002**, *41*, 1945-1947.

Kirchhoff, J. H.; Dai, C.; Fu, G. C.

**Pd/P(*t*-Bu)<sub>3</sub>: A Mild and General Catalyst for Stille Reactions of Aryl Chlorides and Aryl Bromides**

*J. Am. Chem. Soc.* **2002**, *124*, 6343-6348.

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**Air-Stable Trialkylphosphonium Salts: Simple, Practical, and Versatile Replacements for Air-Sensitive Trialkylphosphines. Applications in Stoichiometric and Catalytic Processes**

*Org. Lett.* **2001**, *3*, 4295-4298.

Netherton, M. R.; Fu, G. C.

**A Surprisingly Mild and Versatile Method for Palladium-Catalyzed Suzuki Cross-Couplings of Aryl Chlorides in the Presence of a Triarylphosphine**

*Chem. Commun.* **2001**, 2408-2409.

Liu, S.-Y.; Choi, M. J.; Fu, G. C.

**Room-Temperature Alkyl-Alkyl Suzuki Cross-Coupling of Alkyl Bromides that Possess  $\beta$  Hydrogens**

*J. Am. Chem. Soc.* **2001**, *123*, 10099-10100.

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**A Versatile New Catalyst for Heck Reactions of Aryl Chlorides and Aryl Bromides Under Mild Conditions**

*J. Am. Chem. Soc.* **2001**, *123*, 6989-7000.

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*J. Am. Chem. Soc.* **2001**, *123*, 2719-2724.

Dai, C.; Fu, G. C.

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