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Youji Huaxue

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综述与进展

研究通讯

研究论文

* 通讯联系人.

研究简报

Chinese Journal of Organic Chemistry

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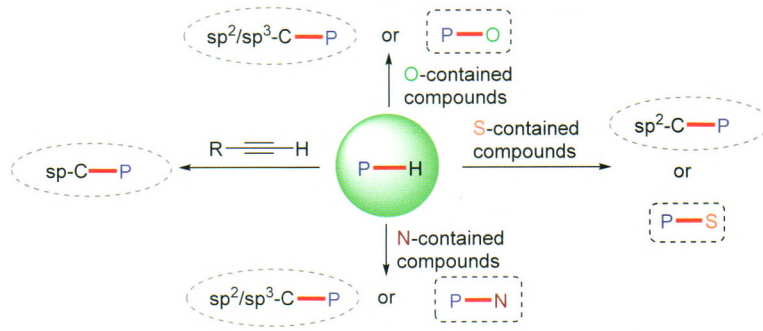
On the Cover

The first rhodium-catalyzed stereospecific intermolecular [3+2] cycloaddition reaction of vinylaziridines and ynamides was realized by Zhu, Feng and Zhang on page 1165. The reaction provides an efficient and atom-economic route to valuable 2-amino pyrroline derivatives in an enantioselective manner by a chirality-transfer strategy. Of note, just as the ECNU's Liwa bridge has a significant effect on the ECNU's teachers and students, the $[Rh(NBD)_2]BF_4$ catalyst plays a central role on the current reaction.

REVIEWS

Recent Advances in the Synthesis of Organophosphorus Compounds via Cross Coupling between Readily Available Materials and P—H Compounds

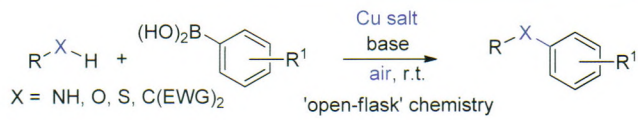


This mini-review focuses on the recent advances in the synthesis of organophosphorus compounds via cross coupling of P—H compounds with readily available starting materials, mainly including the reactions of terminal alkynes and heteroatom compounds (oxygen, sulfur or nitrogen-contained compounds) with P—H compounds forming sp-C—P, sp^2-C—P, sp^3-C—P, and P—Z bonds. Related reaction mechanisms are also discussed.

Yang, Jia; Xiao, Jing; Zhou, Yongbo*; Chen, Tieqiao*; Yin, Shuangfeng; Han, Libiao*

Chin. J. Org. Chem. **2017**, *37*(5), 1055

Recent Advances in Chan-Evans-Lam Coupling Reaction

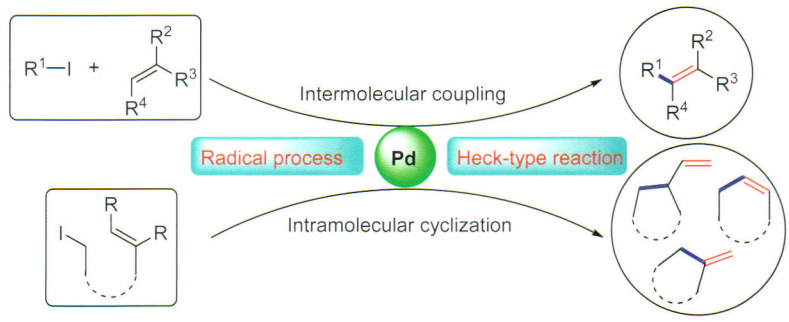


In this paper, the development of Chan-Evans-Lam reaction in the construction of carbon-heteroatom and carbon-carbon bonds as well as its application in total synthesis in recent five years are reviewed.

Ma, Xiaopan; Liu, Fengping; Mo, Dongliang*

Chin. J. Org. Chem. **2017**, *37*(5), 1069

Recent Advances on Alkyl-Heck Reaction



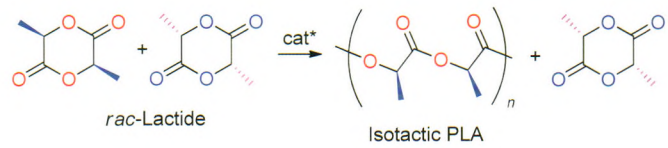
The recent progress in the palladium radical involved Heck-type reaction is reviewed. For most of these transformations, the plausible mechanisms are demonstrated in details. Clarification of these issues is the key point for understanding this field and developing new high performance methodologies.

Dong, Xu; Hou, Yongzheng; Meng, Fanwei; Liu, Hongbo; Liu, Hui*

Chin. J. Org. Chem. **2017**, *37*(5), 1088

CONTENT

Progress in Ring Opening Polymerization of Lactides Catalyzed by Chiral Organometallic Complexes

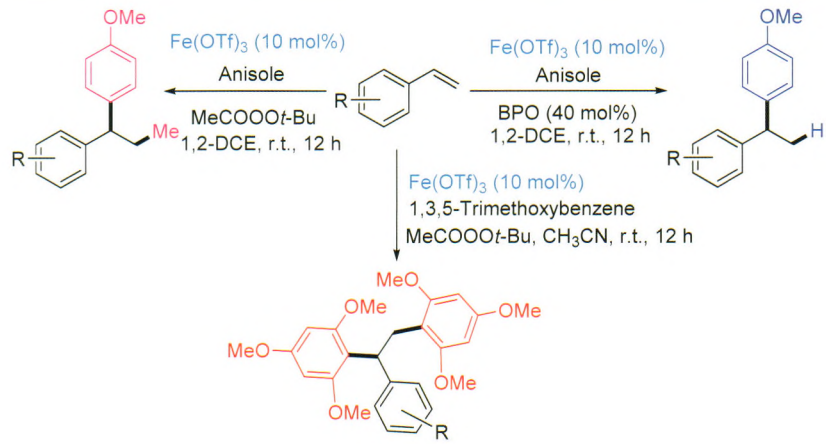


Zhao, Ning*
Chin. J. Org. Chem. **2017**, *37*(5), 1139

The ring opening polymerization (ROP) of lactides in stereoselective manner catalyzed by chiral organometallic complexes has received widespread attention because of the polylactides attractive physical and mechanical properties. In this paper, the progress in the ROP of lactides catalyzed by chiral organometallic complexes is reviewed.

COMMUNICATION

Iron Catalyzed Oxidative Hydroarylation, Methylarylation, and Diarylation of Vinylarenes to Generate Unsymmetrical 1,1-Diarylalkanes

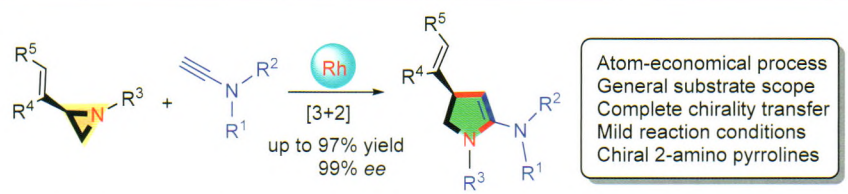


Babu, Kaki Raveendra; Chen, Shaowei; Li, Yajun; Bao, Hongli*
Chin. J. Org. Chem. **2017**, *37*(5), 1160

A novel iron catalyzed hydroarylation, methylarylation and diarylation of styrenes to form unsymmetrical 1,1-diarylalkanes with electron rich anisole and 1,3,5-trimethoxybenzene under mild conditions have been developed. Benzoyl peroxide is used as an oxidant for hydroarylation, whereas in the case of methylarylation and diarylation the oxidant *tert*-butyl peracetate is used.

ARTICLES

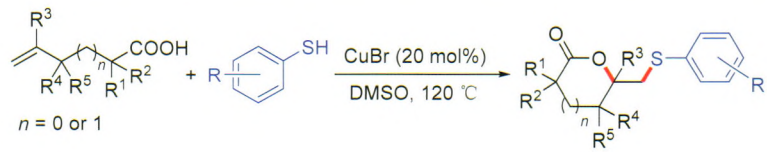
Rhodium(I)-Catalyzed Stereospecific [3+2] Cycloadditions of Vinylaziridines and Ynamides



Zhu, Chaoze; Feng, Jianjun*; Zhang, Junliang*
Chin. J. Org. Chem. **2017**, *37*(5), 1165

The first rhodium-catalyzed stereospecific intermolecular [3+2] cycloaddition reaction of vinylaziridines with ynamides for the synthesis of valuable 2-amino pyrroline derivatives was realized. Use of readily available starting materials, a broad substrate scope, high selectivity and yield, as well as mild reaction conditions make this approach very practical and attractive.

Copper-Catalyzed Oxysulfenylation of Alkenoic Acids with Benzenethiols: A Strategy to Construct Sulfenylated Lactones

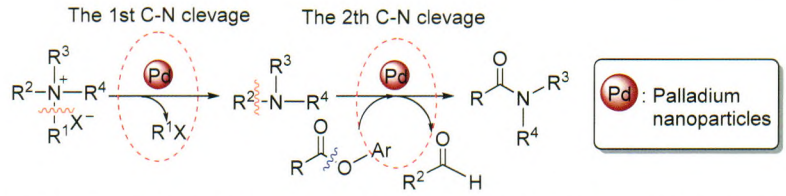


Chen, Manman; Wang, Lijing*; Li, Wei*
Chin. J. Org. Chem. **2017**, *37*(5), 1173

An efficient copper-catalyzed oxysulfenylation of alkenoic acids with benzenethiols via radical pathway was developed. The reactions are easy to conduct, occur under mild conditions, and form a broad range of sulfenylated lactones in good yields.

CONTENT

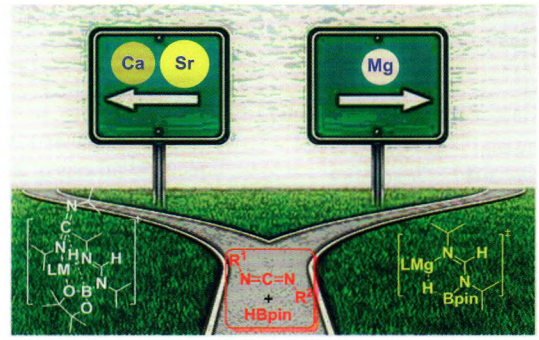
Aminolysis of Esters Using Quaternary Ammonium Salts as Amine Sources via Twice C—N bond Activations



Catalyzed by supported palladium nanoparticles, an aminolysis reaction between various aryl esters and quaternary ammonium salts via twice C—N bond activations has been developed for selectively synthesis of amides. The Pd/γ-Al_2O_3 catalyst exhibited an excellent catalytic activity and reusability of at least five recycles in air for the reaction.

Wang, Lili; Li, Pengshuai; Jia, Meilin; Bao, Yongsheng*
Chin. J. Org. Chem. **2017**, *37*(5), 1220

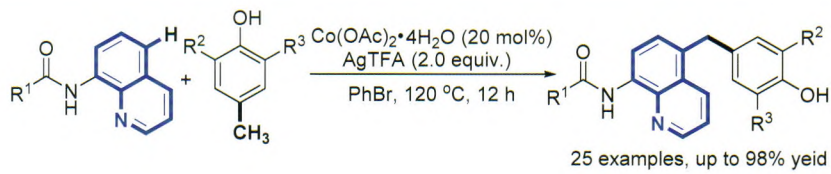
Mechanism of Alkaline Earth Metal Catalyzed Hydroboration of Carbodiimides: A Theoretical Study



Density functional theory (DFT) calculations are employed to study the mechanism of alkaline earth metal catalyzed hydroboration of carbodiimides. The active catalytic species is a hydridemagnesium complex when magnesium is used as catalyst. Alternatively, DFT calculations showed that the active catalytic species is amide-metal complex, and the corresponding reactions undergo through different pathways. These differences could be attributed to the larger radius and steric effect of calcium and strontium.

Xu, Dongdong; Shan, Chunhui; Bai, Ruopeng*; Lan, Yu*
Chin. J. Org. Chem. **2017**, *37*(5), 1231

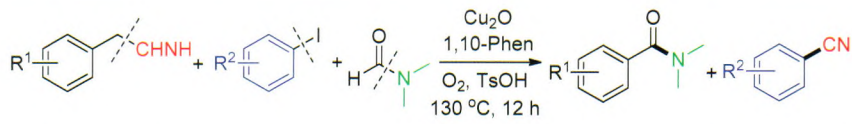
Cobalt-Catalyzed C—H Benzylation of 8-Aminoquinolines on C(5) Position



The cobalt-catalyzed benzylation of aminoquinolines through $C(sp^2)$—$H/C(sp^3)$—H cross-couplings is developed, affording desired products in moderate to good yields.

Zhang, Jiaheng; Hao, Xinqi; Wang, Zhenglong; Ren, Changjiu; Niu, Junlong*; Song, Maoping*
Chin. J. Org. Chem. **2017**, *37*(5), 1237

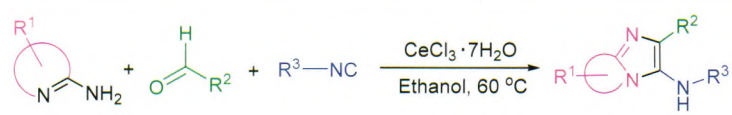
Synthesis of *N*,*N*-Dimethyl Benzamide and Benzonitriles through Copper-Catalyzed One-Pot Reaction



Copper-catalyzed amidation of benzyl cyanide and cyanation of aryl iodides by using *N*,*N*-dimethyl formamide (DMF) as amide source by "one pot" reaction is reported, generating the corresponding products *N*,*N*-dimethylbenzamide and benzonitrile in yields up to 85% with good regioselectivity and atomic economy.

Zhang, Wei; Hu, Chenxu; Zhou, Xiangge*
Chin. J. Org. Chem. **2017**, *37*(5), 1246

Convenient Synthesis of Imidazo-Fused Heterocycles via $CeCl_3$•$7H_2O$ Catalyzed Groebke-Blackburn-Bienayme Reaction



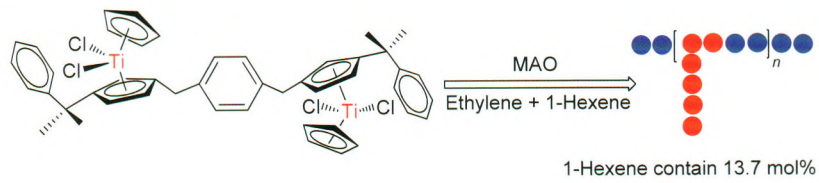
A simple, efficient and eco-friendly "one-pot" method for the convenient synthesis of imidazo-fused heterocycles via Groebke-Blackburn-Bienayme reaction has been developed, in which, the reaction was catalyzed by $CeCl_3$•$7H_2O$ and started from aldehydes, aminoazines and isocyanides in ethanol under 60 ℃.

Zhang, Zhaorui; Xu, Liang; Tang, Hanqin; Wu, Boxin; Feng, Di; Guo, Changbin*
Chin. J. Org. Chem. **2017**, *37*(5), 1252

CONTENT

NOTES

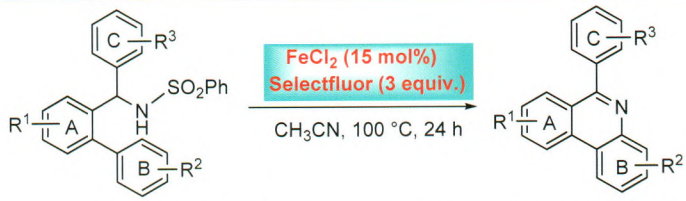
Study on the Influence of the Weak Effect of Benzyl Benzene Ring on the Polymerization Behavior of Ethylene



Xu, Sheng*; Liang, Chunchao; Lü, Zhongwen; Zhu, Yuling; Zhang, Cui; Mi, Puke*
Chin. J. Org. Chem. **2017**, *37*(5), 1284

The weak effect of the benzyl benzene ring in binuclear metallocene system was investigated. The possible polymerization mechanism is offered to explain the higher inserting yield of 1-hexene and alterative copolymerization.

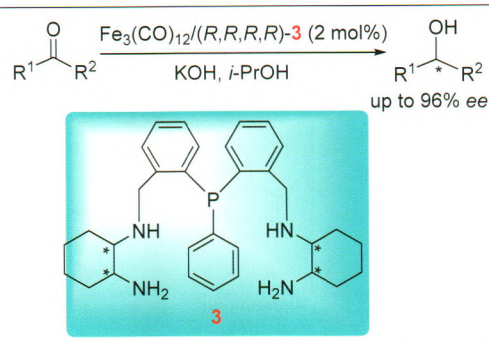
Synthesis of 6-Aryl Phenanthridines via Iron-Catalyzed sp^2-C—H Bond Amination/Aromatization Reaction



With $FeCl_2$ as a catalyst and Selectfluor as an oxidant, an efficient and highly selective synthesis of 6-aryl phenanthridines in one-pot manner has been achieved via an intramolecular sp^2-C—H bond amination/aromatization of *N*-(biphenyl-2-yl(aryl)methyl)-benzenesulfonamide derivatives. The optimized reaction conditions were established through systematic investigations of solvents, temperature, catalysts, oxidants and their dosages in the reaction.

Shi, Dongdong; Bao, Hanyang; Xu, Zheng; Liu, Yunkui*
Chin. J. Org. Chem. **2017**, *37*(5), 1290

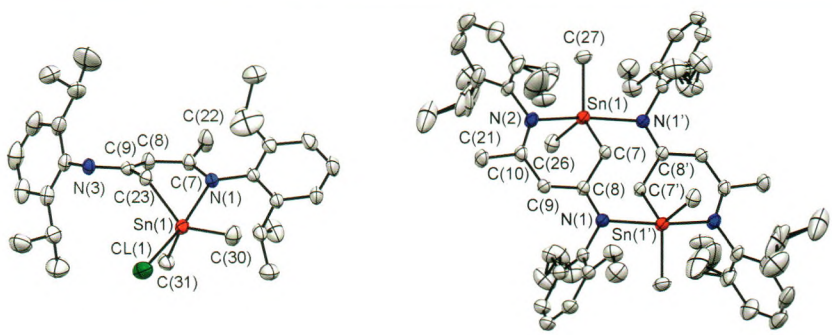
Asymmetric Transfer Hydrogenation of Ketones Catalyzed by Chiral Multidentate Aminophosphine Ligands/Iron Cluster



As one of the most abundant metals on earth, iron is cheap and low toxicity. The iron-catalyzed asymmetric transfer hydrogenation of ketones was investigated. The catalytic system generated *in situ* from chiral multidentate aminophosphine ligand (*R*,*R*,*R*,*R*)-PN_4H_6 and $Fe_3(CO)_{12}$ exhibited highly enantioselectivities for various ketones, giving the corresponding optical active alcohols with up to 96% *ee*.

Wu, Fang; Zhang, Wenjing; An, Dongli; Li, Yanyun*; Gao, Jingxing
Chin. J. Org. Chem. **2017**, *37*(5), 1295

Synthesis and Characterization of Two β-Diketiminato Tin(IV) Compounds



Two new tin compounds, [N(Ar)=C(Me)CH=C(NHAr)CH_2SnMe_2Cl•C_7H_8] (Ar=2,6-^{i}Pr$_2$C$_6$H$_3$) (**1**) and [N(Ar')C(Me)=CHC(=NAr')CH_2SnMe_2]$_2$•CH_2Cl_2 (Ar'=2,6-$Et_2C_6H_3$) (**2**), containing N—Sn—C bonds have been synthesized. The latter is a rare dimer with eight-membered ring in β-diketiminato N,C-bonded complexes and its formation mechanism is given by the comparison of these two similar structures.

HIGHLIGHTS

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