

有机化学

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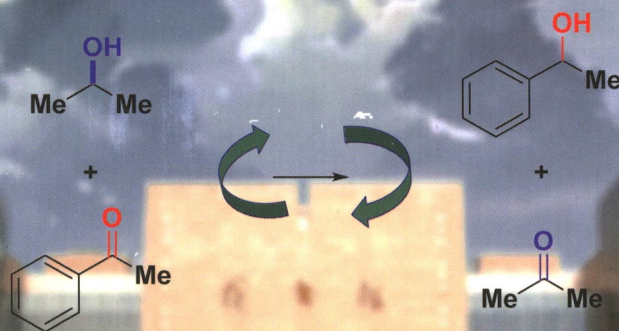
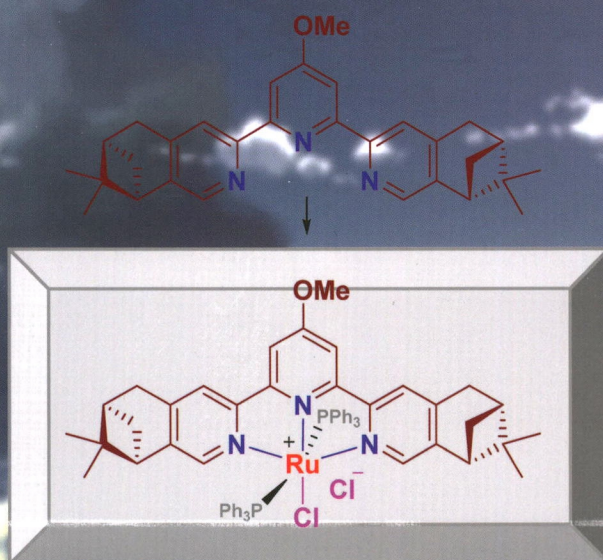
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(YOUJI HUAXUE)

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* 通讯联系人.

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研究简报

新型含 <i>N</i> -七氟异丙基苯基吡啶的邻甲酰氨基苯甲酰胺类化合物的设计合成以及生物活性研究	谢伟彬 李焕功 孟祥德 李正名* 周 莎*	(1722)
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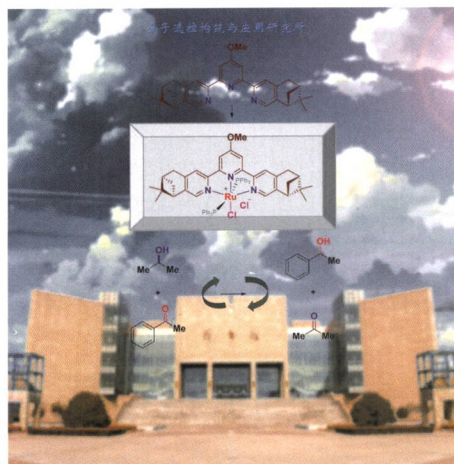
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镍/氮-杂环卡宾配体催化的酮的不对称 Suzuki-Miyaura 偶联反应	孔维宇	阴国印*	(1751)
手性硼催化非环状 α,β -不饱和酮的直接不对称 Vinylogous Mannich 反应	杨 凯	宋秋玲*	(1753)
光促环酮的开环反应合成大环内酯		叶俊涛*	(1755)
钯催化[4+1+1]环加成反应直接合成 <i>N</i> -取代喹唑啉-2,4(1 <i>H</i> ,3 <i>H</i>)-二酮	丁永正	黄汉民*	(1757)

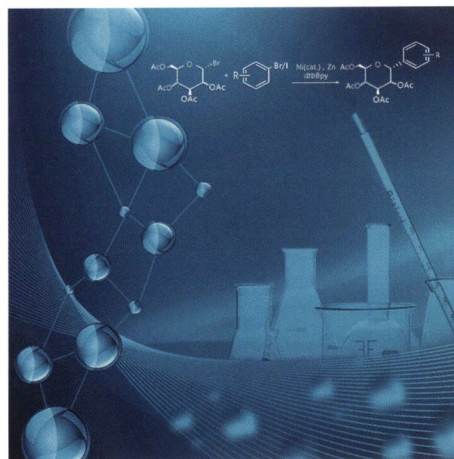
Cover Picture: Transfer Hydrogenation of Ketones into Alcohols Catalyzed by a Novel Chiral Terpyridine Ruthenium(II) Complex

A novel chiral terpyridine Ru(II) complex-catalyzed transfer hydrogenation of ketones has been disclosed by Wang, Liu, Miao, Xue, Zhu, Song, Hao, and Liu on page 1543. With the well-designed Ru(II) complex, the hydrogenation of a wide range of ketones proceeded smoothly under relative mild reaction conditions, affording the corresponding alcohols with excellent isolated yields (up to 99%).



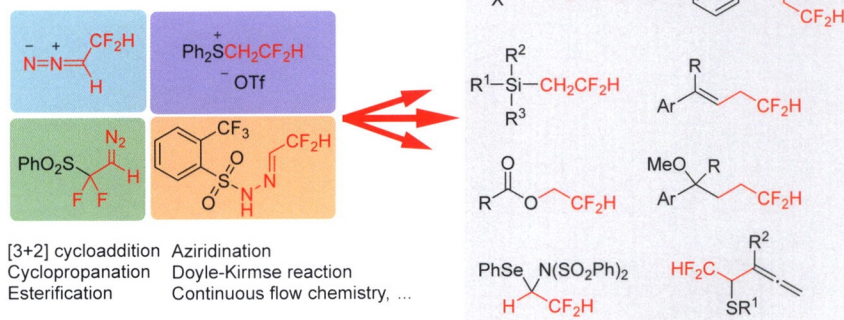
Inside Cover: Facile Preparation of Aryl C-Glycosides by Nickel-Catalyzed Reductive Coupling of Glycosyl Halides with Aryl Halides

The facile synthesis of aryl C-glycosides by nickel-catalyzed reductive coupling of glycosyl halides with aryl halides is highlighted by Sun, Liu, Lin, Yao, Tong, and Qian on page 1551. The present method generally resulted in the glycosides in excellent overall α/β coupling yields, which is easy to be scaled up as evident in the synthesis of dapagliflozin and its α -anomer.



REVIEWS

Recent Progress in the Application of Difluoromethyl Diazomethane as Fluorine-Containing Building Block

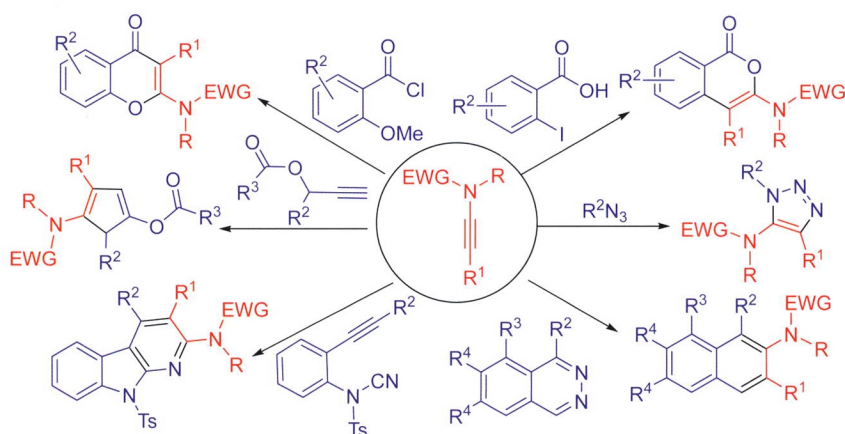


Zhu, Wenqing; Xu, Tingyi; Han, Wenyong*
Chin. J. Org. Chem. **2021**, 41(4), 1275

Recent advances in the construction of CF₂H-containing molecules using difluorodiazomethane (CF₂HCHN₂) or its surrogates are reviewed, and the developmental direction for the field is prospected.

CONTENT

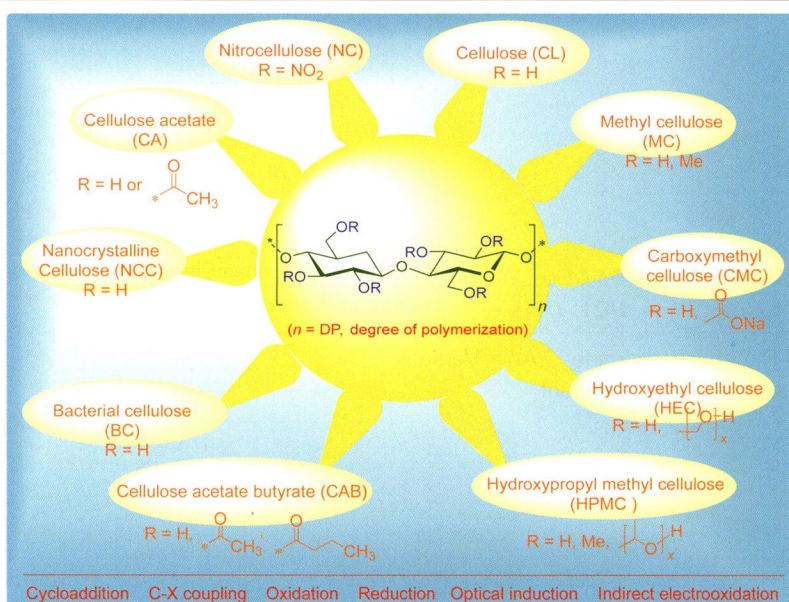
Recent Advances in the Ring-Forming Reactions of Ynamides



The recent progress in the ring-forming transformations of ynamides is reviewed. It is organized by the reaction types, and representative examples are selected to demonstrate the scope and mechanistic insight of these ring-forming transformations. Finally, the future development direction of ynamides in ring-forming reactions is forecasted.

Zhou, Xinyue; Liang, Zongxian; Wang, Xiao-Na*
Chin. J. Org. Chem. **2021**, 41(4), 1288

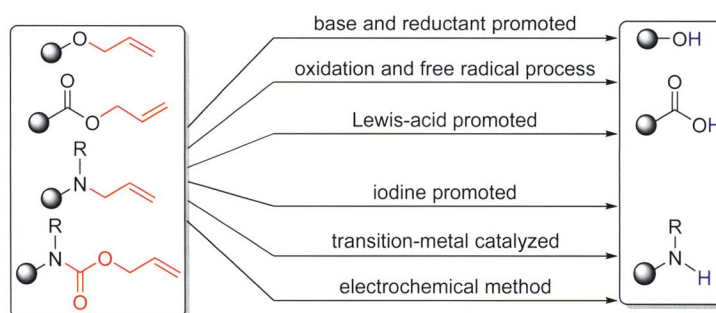
Research Progress of Cellulose and Its Derivatives Supported Copper Catalyst Catalyzed Organic Reactions



The organic reactions catalyzed by different types of cellulose-supported copper catalysts are reviewed, including the construction of C—X bond, cycloaddition, oxidation, reduction, photocatalytic degradation and electrocatalysis

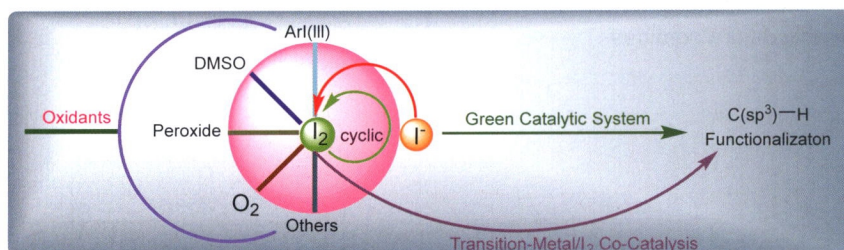
Chen, Xin; Chen, Chunxia*; Peng, Jinsong*
Chin. J. Org. Chem. **2021**, 41(4), 1319

Advances in Deallylation



The comprehensive development on the deallylation reaction with base and reductant, oxidation and free radical, Lewis-acid, iodine, transition metals, and electrochemical methods is reviewed.

Wang, Yu; Wang, Jingyang; Wu, Xiaoyu;
Ding, Guangni; Zhang, Zhaoguo*; Xie,
Xiaomin*
Chin. J. Org. Chem. **2021**, 41(4), 1337

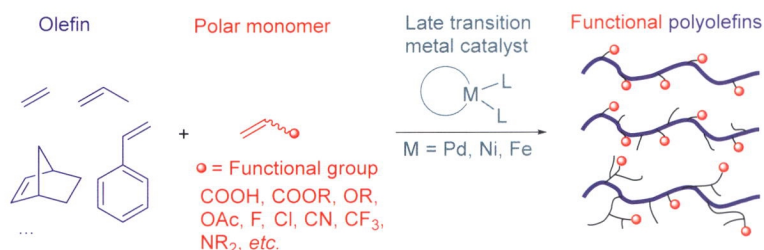
Research Progress in C(sp³)—H Functionalization Reaction via Molecular Iodine-Catalyzed Oxidation

The latest research progress of C(sp³)—H functionalization catalyzed by iodine under different oxidation systems is summarized. The reaction characteristics and mechanisms are mainly discussed, and the future development is prospected.

Zhang, Luwen; He, Wei*

Chin. J. Org. Chem. **2021**, 41(4), 1359

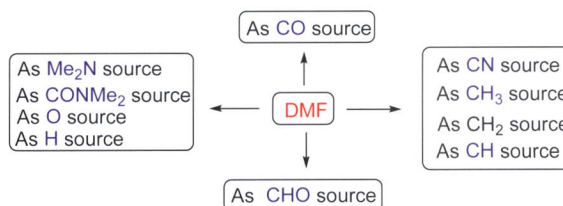
Late Transition Metal Complexes for Olefin Copolymerization with Polar Monomers



The development of late transition metal complexes for olefin copolymerization with polar monomers according to the different types of complexes is reviewed. Fine modulation of key copolymerization parameters (activity, molecular weight, polar monomer incorporation, etc.) and material properties of polyolefins are discussed in detail. A brief outlook on the future of more efficient and thermally stable late transition metal catalysts to obtain high molecular weight copolymers with tuneable polar monomer incorporation is provided.

Li, Yongqing; Wang, Fan; Cao, Yucan*

Chin. J. Org. Chem. **2021**, 41(4), 1396

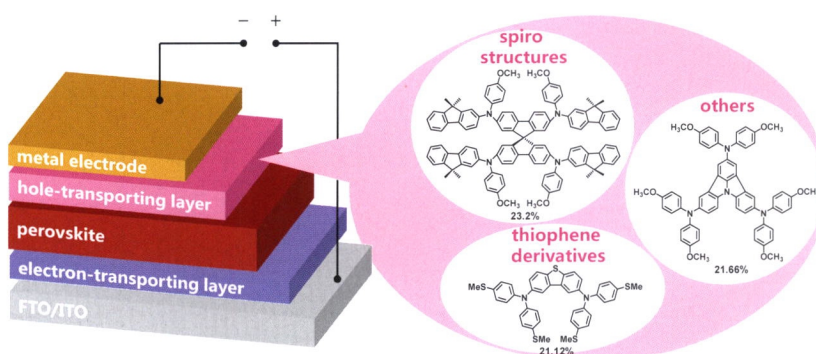
N,N-Dimethylformamide: An Versatile Organic Synthetic Reagent

N,N-Dimethylformamide (DMF) is an inexpensive and abundant significant solvent and industrial raw material. It was not only regarded as an effective polar solvent, but also participated various synthetic transformation as reactant. The recent progress in the application of DMF as multifunctional reactant in organic transformation is reviewed.

Diao, Xuewen; Yang, Di; Yang, Qiliang; Cai, Xiaohua*

Chin. J. Org. Chem. **2021**, 41(4), 1434

Low-Cost, High-Performance Organic Small Molecular Hole-Transporting Materials for Perovskite Solar Cells



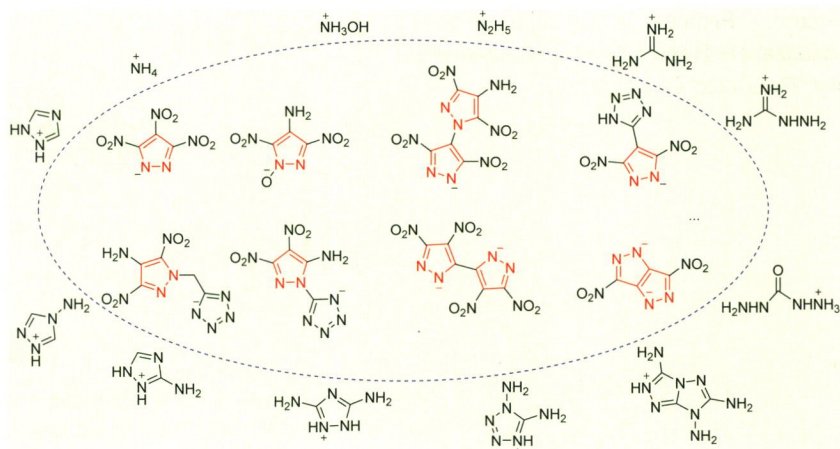
The recent design and development of low-cost organic small molecules as hole-transporting materials in high-performance perovskite solar cells are discussed.

Shao, Jiang-Yang; Zhong, Yu-Wu*

Chin. J. Org. Chem. **2021**, 41(4), 1447

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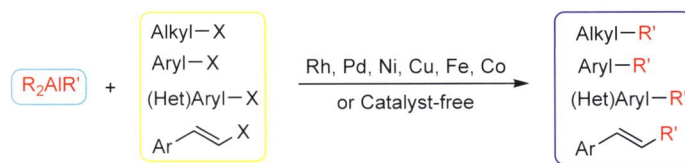
Progress in the Synthesis of Energetic Salts Based on Pyrazole



In recent years, a large number of energetic salts based pyrazole have been designed and synthesized around the world, including monocyclic energetic salts, bicyclic energetic salts and fused energetic salts based on pyrazole. Many of them exhibit the characteristics of high energy and low sensitivity. The synthesis and properties of recently reported energetic salts based on pyrazole are reviewed, and their applications in the field of energetic materials are prospected.

Li, Guanglei; Huang, Haifeng*; Yang, Jun*; Duan, Hongzhen*
Chin. J. Org. Chem. **2021**, 41(4), 1466

Research Progress of Cross-Coupling Reactions of Alkylaluminums with Electrophiles Reagents



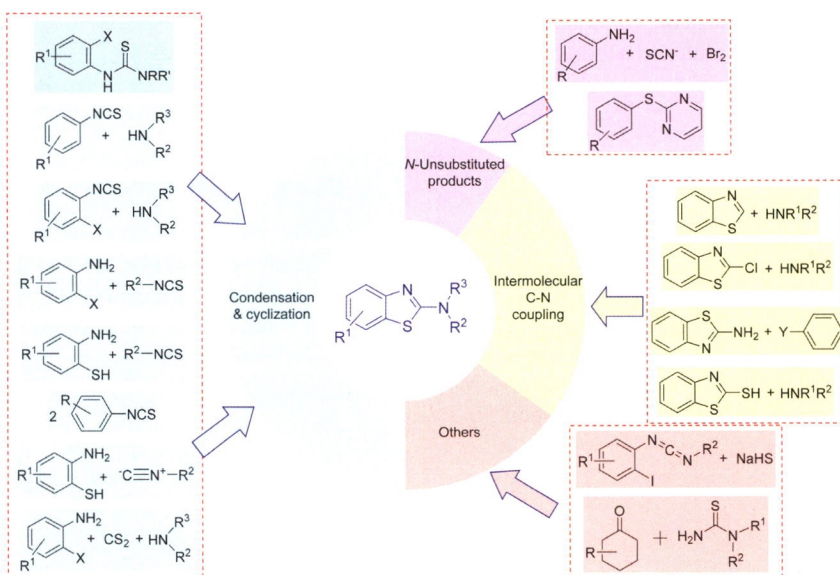
X = F, Cl, Br, I, OMe, OTf, etc.; R = Me, Et, etc.;

R' = Me, Et, *n*-Pr, *i*-Pr, *i*-Bu, *t*-Bu, Bn, C₈H₁₇, Octyl, OAr, SAr, SeAr, TeAr, NEt₂, etc.

Li, Qinghan*; Luo, Ruiqiang; Wu, Chuan; Xiao, Hongliu; Guo, Shaopeng; Zhang, Zhihao; Huang, Zheyao; Zhou, Lin
Chin. J. Org. Chem. **2021**, 41(4), 1489

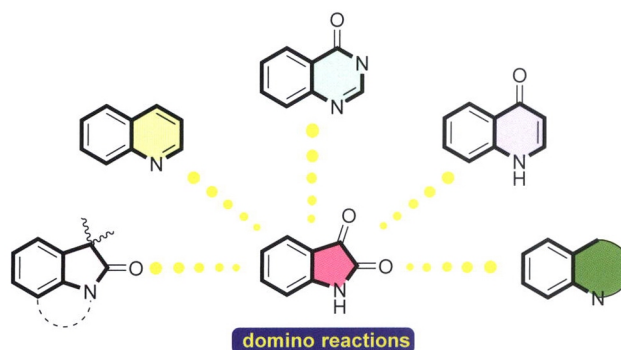
In this paper, the recent research results about the alkylaluminum reagents applied in cross-coupling reactions are reviewed, involving various reaction systems.

Progress in the Synthesis of 2-Amino-benzothiazoles



Hou, Qiufei; Zhang, Rui; Liang, Jiemei; Yao, Weizhong; Cheng, Hua*; Chen, Cheng*
Chin. J. Org. Chem. **2021**, 41(4), 1498

The progress in the synthesis of 2-aminobenzothiazoles is reviewed. The methods for the synthesis are classified and summarized according to the substrates. Finally, the future development and application of these compounds are also prospected.

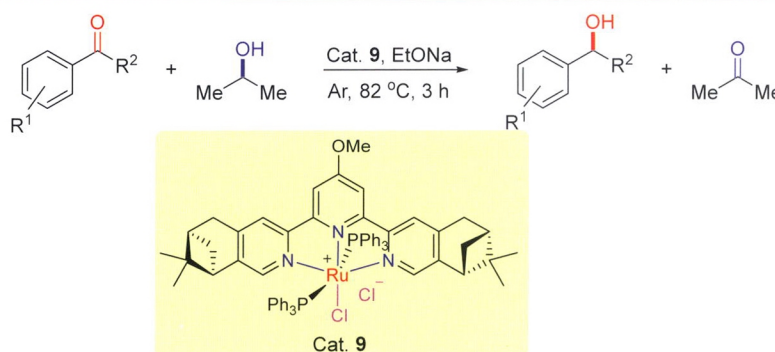
Recent Advances in the Synthesis of
Benzoheterocyclic Compounds Involving
Isatins

In recent years, the great progress has been made in the construction of heterocyclic compounds based on domino reactions involving isatins. According to the different types of heterocycles, the research progress in the synthesis of benzoheterocyclic compounds by the domino reactions related to isatins is briefly discussed.

Jia, Fengcheng*; Luo, Na; Xu, Cheng*; Wu, Anxin

Chin. J. Org. Chem. **2021**, 41(4), 1527

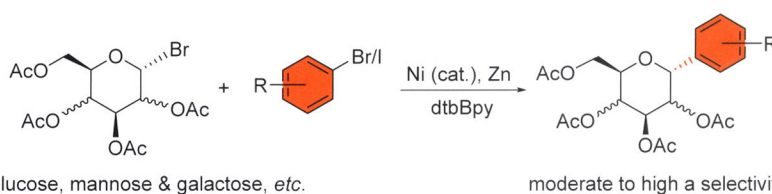
ARTICLES

Transfer Hydrogenation of Ketones into
Alcohols Catalyzed by a Novel Chiral
Terpyridine Ruthenium(II) Complex

Wang, Xiaodie; Liu, Chunyu; Miao, Lingling; Xue, Bingjie; Zhu, Xinju; Song, Bing*; Hao, Xinqi*; Liu, Guoji

Chin. J. Org. Chem. **2021**, 41(4), 1543

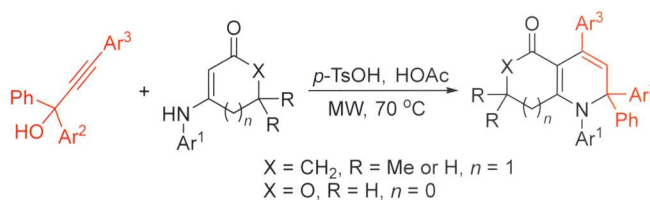
A novel chiral terpyridine Ru(II) complex-catalyzed transfer hydrogenation of ketones has been disclosed with broad substrate scope, operational convenience and high efficiency.

Facile Preparation of Aryl C-Glycosides
by Nickel-Catalyzed Reductive Coupling
of Glycosyl Halides with Aryl Halides

Sun, Yuren; Liu, Jiandong; Lin, Quan; Yao, Ken; Tong, Weiqi; Qian, Qun*

Chin. J. Org. Chem. **2021**, 41(4), 1551

The facile synthesis of aryl C-glycosides by nickel-catalyzed reductive coupling of glycosyl halides with aryl halides was developed. The present method generally resulted in the glycosides in excellent overall α/β coupling yields, which is easy to be scaled up as evident in the synthesis of dapagliflozin and its α -anomer.

Synthesis of Fused Pyridines via Micro-
wave-Assisted [3+3] Cyclization

Wu, Yanan*; Du, Jianyu; Hao, Wenjuan; Jiang, Bo*

Chin. J. Org. Chem. **2021**, 41(4), 1563

A new microwave-assisted *p*-TsOH-promoted [3+3] cyclization was reported. By using the characteristics of enaminones or enamino lactones as 1,3-dinucleophilic reagents and propargyl alcohols as 1,3-electrophilic reagents, *p*-TsOH-promoted [3+3] cyclization of these substrates was carried out in acetic acid under microwave irradiation.

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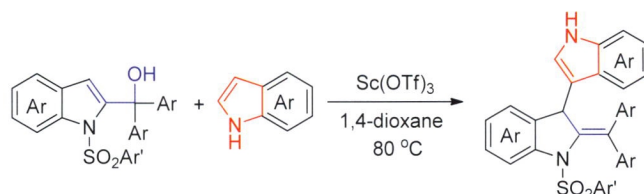
Ligand-Free Iridium-Catalyzed Borylation of Secondary Benzylic C—H Bonds



Liu, Luhua; Du, Rongrong; Xu, Senmiao*
Chin. J. Org. Chem. **2021**, 41(4), 1572

A ligand-free iridium-catalyzed borylation of secondary benzylic C—H bonds using pyrazole as the directing group has been developed. The reaction has broad functional group compatibility, delivering a vast array of benzylic functionalized products in good to excellent yields.

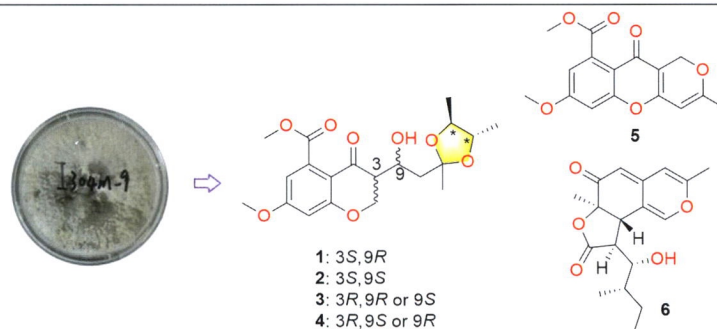
Sc(OTf)₃-Catalyzed Dearomatization of Indoles for the Synthesis of 3,3'-Bisindoles



Wang, Rong; Xu, Lichen; Lu, Yi; Jiang, Bo*;
 Hao, Wenjuan*
Chin. J. Org. Chem. **2021**, 41(4), 1582

A new Sc(OTf)₃-catalyzed dearomatization of indole-2-methanols was reported. By using the characteristics of umpolung of the preformed indole-2-methanols in the presence of acid catalysts, its nucleophilic center at 3-position of indole ring could be transformed into the electrophilic site, thereby realizing the coupling reaction with another molecule indoles, which led to the synthesis of a series of 3,3'-bisindoles with exocyclic double bond unit in moderate to excellent yields. Based on the experimental results and literature reports, the possible reaction mechanism was proposed.

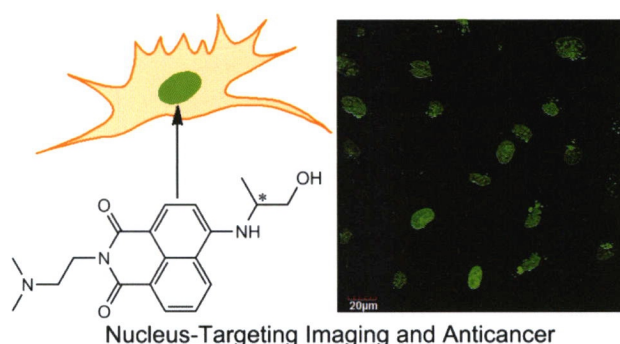
Polyketides from the Deep-Sea-Derived Fungus *Diaporthe phaseolorum* FS459



Hu, Caiyun; Li, Saini; Chen, Yuchan; Gao, Xiaoxia; Liu, Zhaoming*; Zhang Weimin*
Chin. J. Org. Chem. **2021**, 41(4), 1591

Ten polyketides, including three new chromone derivatives (**1**, **2** and **5**), a pair of new epimer mixtures (**3** and **4**), a new azaphilone analogue (**6**) and four known compounds (**7**~**10**) were isolated from the deep-sea-derived fungus *Diaporthe phaseolorum* FS459. The *in vitro* cytotoxicity, antibacterial activities and NO production inhibitory effects of compounds **1**~**10** were evaluated.

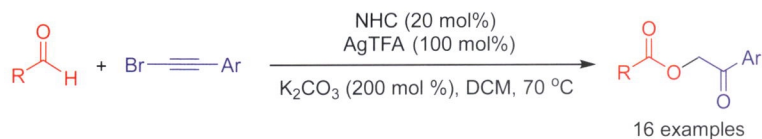
Synthesis and Anti-tumor Effects of Naphthalimide Derivatives Targeted in Cell Nucleus



Rong, Ruixue; Li, Jimin; Li, Yaowen; Guo, Xiaoyu; Wang, Chong; Li, Yanjun; Li, Jinmei; Han, Baojun; Cao, Zhiran; Wang, Kerang*; Li, Xiaoliu*
Chin. J. Org. Chem. **2021**, 41(4), 1599

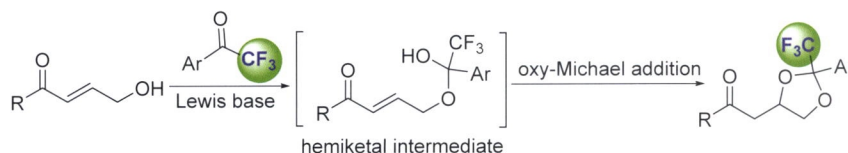
Series of naphthalimide derivatives were synthesized, which showed nucleus-targeting imaging for HeLa cells, strong binding interactions with deoxyribonucleic acid (DNA), and potent cytotoxicity.

N-Heterocyclic Carbene (NHC)/Ag(I) Co-catalyzed Synthesis of 2-Oxo-2-arylethyl Aryl Formates



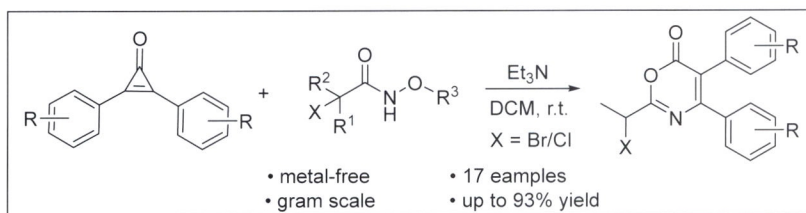
An N-heterocyclic carbene (NHC)/Ag(I) co-catalyzed efficient synthesis of 2-oxo-2-arylethyl aryl formates was realized by the reaction of aryl aldehydes with (bromoethynyl)benzenes. This method features broad substrate scope, ready availability of starting materials and operational simplicity, which gives an alternative access to α -acyloxycarbonyl derivatives.

Cheng, Li; Wang, Wenrong; Sun, Yuqian; Li, Tuanjie*; Yu, Chenxia; Yao, Changsheng*
Chin. J. Org. Chem. **2021**, 41(4), 1607

Triethylamine-catalyzed Cascade Reaction of γ -Hydroxy- α,β -unsaturated Ketones with Trifluoromethyl Ketones via Hemiketal Intermediates

The Et₃N-catalyzed cascade reaction of trifluoromethyl ketones and γ -hydroxy- α,β -unsaturated ketones via hemiketal intermediate is investigated. The adducts could be easily obtained in good to excellent yields with moderate diastereoselectivities. The reaction proceeded smoothly to give the desired product in 92% yield and with 96% ee in the presence of a glycosyl and quinidine-based bifunctional chiral thiourea catalyst.

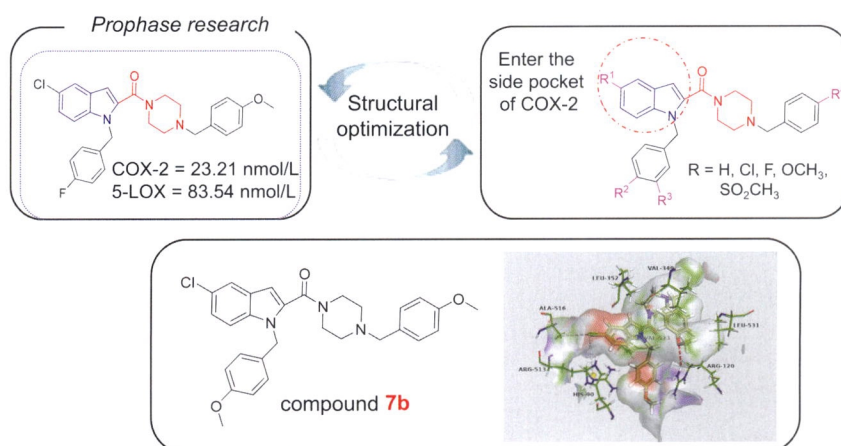
Ma, Hai; Yu, Guanghao; Sui, Feng; Yang, Miyi; Liu, Li; Li, Huijie; Li, Feng*; Zhao, Qinghe*
Chin. J. Org. Chem. **2021**, 41(4), 1614

Triethylamine-Promoted Cyclization Reaction between Cyclopropenone and α -Halogenated Hydroxamate for the Synthesis of Polysubstituted 6H-1,3-Oxazin-6-one

Liu, Sizhan; Cui, Mingyue; Wang, Bowen; Hu, Chunmei; Zheng, Yingying; Li, Jing; Xu, Xuetao*; Wang, Zhen; Wang, Shaohua*
Chin. J. Org. Chem. **2021**, 41(4), 1622

A triethylamine-promoted cyclization reaction between cyclopropenone and α -halohydroxamate has been developed to construct 6H-1,3-oxazin-6-one skeleton. The reaction shows good yield and functional group tolerance under metal-free and mild conditions, and it is suitable for gram-scale preparation.

Synthesis and Anti-proliferative Activity of Indole-2-amide Derivatives as Cyclooxygenase-2/5-lipoxygenase (COX-2/5-LOX) Dual Inhibitors

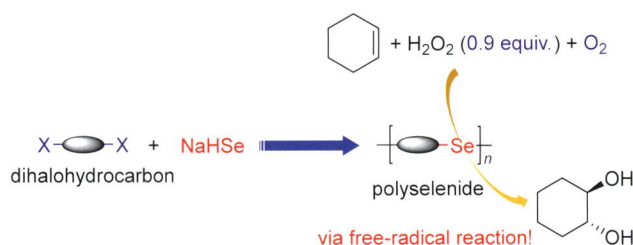


Qian, Shihu; Huang, Yuanzheng; Li, Jiaming*; Zhang, Yanchun; Zhang, Bin; Jin, Fan
Chin. J. Org. Chem. **2021**, 41(4), 1631

A novel series of indole-2-amide-derived cyclooxygenase-2/5-lipoxygenase (COX-2/5-LOX) dual inhibitor were designed and synthesized, and biologically evaluated as anti-proliferative agents.

CONTENT

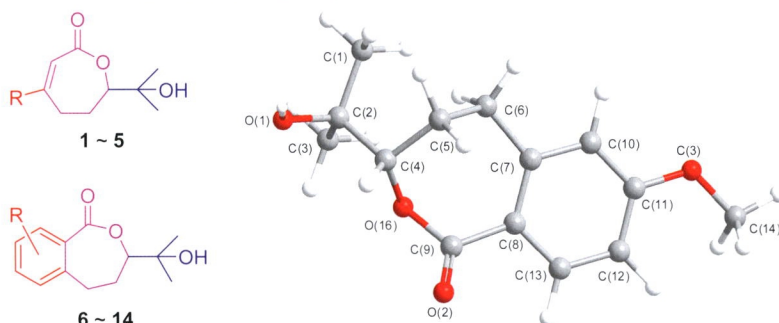
Polyselenide-Catalyzed Cyclohexene Oxidation to Produce 1,2-Cyclohexanediol



Huang, Jiejun; Qian, Rongrong; Wang, Shuang; Cao, Hong'en*
Chin. J. Org. Chem. **2021**, 41(4), 1639

A novel method was developed to synthesize polyselenide catalyzing the dihydroxylation of cyclohexene to 1,2-cyclohexanediol. The unique structure of the catalyst at molecular level resulted in free-radical reaction mechanism allowing the use of O₂ as the supplementary oxidant.

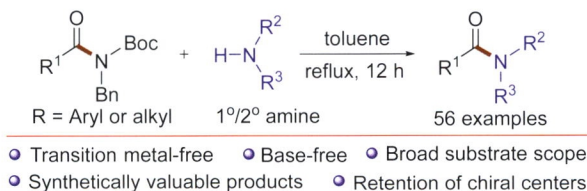
Synthesis and Antifungal Activity of 3,7-Dimethyl-7-hydroxy-2-octen-6-olide Analogues



Dong, Hongbo; Wang, Weiwei; Zhao, Yu; Liu, Xinlei; Wang, Ming'an*
Chin. J. Org. Chem. **2021**, 41(4), 1646

The synthesis of racemic and optical 3,7-dimethyl-7-hydroxy-2-octen-6-olide analogues has been achieved via epoxidation-lactonization procedure and Sharpless asymmetric dihydroxylation as the key steps in 55%~90% overall yields, respectively. Their antifungal activities were evaluated. The results showed that 3-phenyl-7-methyl-7-hydroxy-2-octen-6-olide and 3-furan-2-yl-7-methyl-7-hydroxy-2-octen-6-olide were the good lead structures.

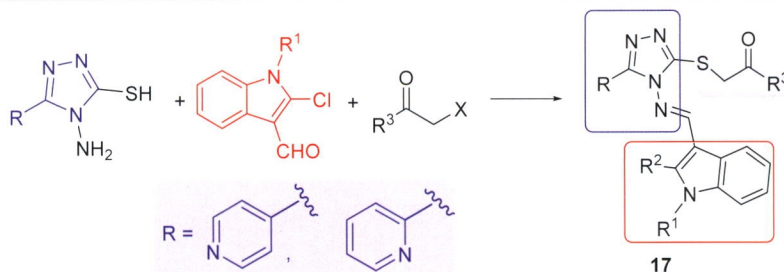
Transamidation of *N*-Benzyl-*N*-Boc-amides under Transition Metal-Free and Base-Free Conditions



Ye, Danfeng; Chen, Hao; Liu, Zhiyuan; Lei, Chuanhu*
Chin. J. Org. Chem. **2021**, 41(4), 1658

A protocol for the transamidation of *N*-benzyl-*N*-Boc-amides was reported. Using this approach, transamidation proceeds under reflux conditions without the need for base and catalyst. This method exhibits broad substrate scope and permits retention of enantiopurity with respect to chiral amino-acid-derived nucleophiles, and amides bearing an epimerizable stereocenter. The mechanism was preliminarily studied.

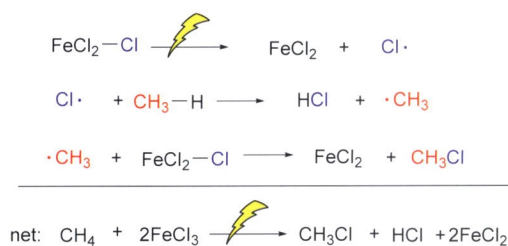
Novel 3-Thioether-4-indolimino-4*H*-1,2,4-triazole Derivatives Bearing Pyridyl Moiety: Design, Synthesis and Bioactivity Evaluation *in vitro*



Qi, Yayun; Liu, Jiamin; Li, Chenpeng; Hu, Weinan; Tang, Siyu; Shao, Lihui; Wang, Zhenchao*; Ouyang, Guiping*
Chin. J. Org. Chem. **2021**, 41(4), 1670

A series of novel 3-thioether-4-indolimino-4*H*-1,2,4-triazole derivatives bearing pyridyl moiety (**17**) have been designed, synthesized and evaluated for their bioactivity. The results showed that some compounds exhibited moderate activities against four cancer cells (A549, PC-3, K562, HepG2) and *Xanthomonas oryzae* pv. *oryzae* (*Xoo*). Meanwhile, several experiments were carried out to further study the antitumor mechanism.

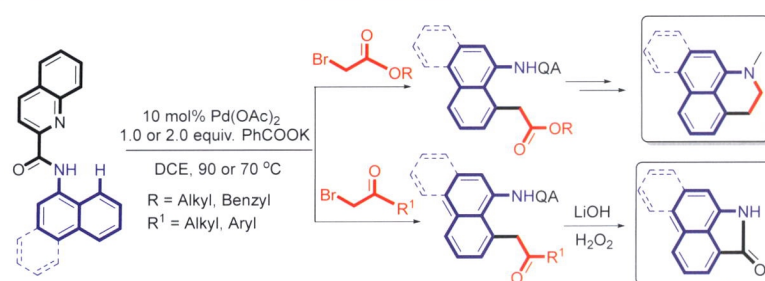
Selective Chlorination of Methane Photochemically Mediated by Ferric Chloride at Ambient Temperature



Huo, Shangfei; Chen, Hong; Zuo, Weiwei*
Chin. J. Org. Chem. **2021**, 41(4), 1683

A photochemical method for the selective chlorination of methane under mild conditions, using FeCl_3 , is developed.

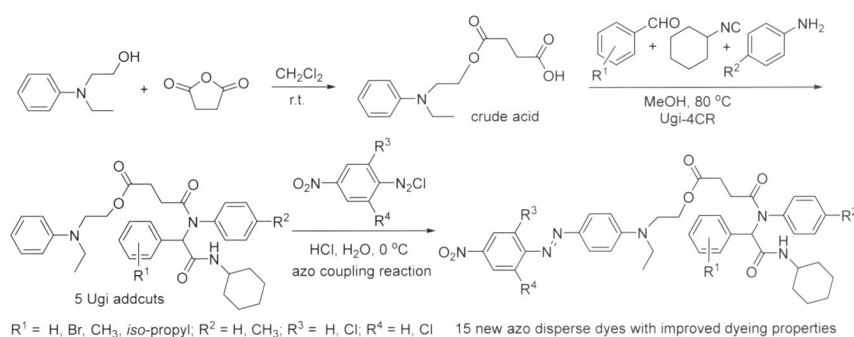
Palladium-Catalyzed C8 Alkylation of 1-Naphthylamides and Its Application to the Synthesis of the Core Structures of Aporphine and Aristolactam Alkaloids



A practical methodology for the palladium-catalyzed regioselective alkylation of 8-C-H bonds in 1-naphthylamides containing a quinolinamide moiety as a bidentate directing group with functionalized alkyl halides is reported. Various functionalized alkyl halides including α -bromo esters and ketones can be employed as coupling partners, providing exclusively 8-alkyl-1-naphthylamine derivatives. In particular, the alkylated products with these ester and carbonyl groups can readily be further converted into the core structures of aporphine and aristolactam alkaloids, respectively.

Jin, Honglei; Jiang, Fengxuan; Cheng, Kai*;
Huang, Lehao*
Chin. J. Org. Chem. **2021**, 41(4), 1691

Facile Synthesis of Novel, Structurally Diverse Azo Disperse Dyes by Employing Ugi Four-Component Reaction

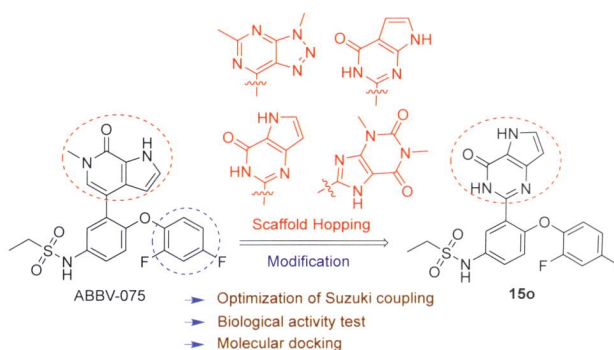


$\text{R}^1 = \text{H, Br, CH}_3, \text{iso-propyl}; \text{R}^2 = \text{H, CH}_3; \text{R}^3 = \text{H, Cl}; \text{R}^4 = \text{H, Cl}$ 15 new azo disperse dyes with improved dyeing properties

Guo, Xiaoyan; Fang, Shuaijun; Qian, Hongfei; Feng, Gaofeng*
Chin. J. Org. Chem. **2021**, 41(4), 1703

Employing Ugi four-component reaction as the key step, a novel and efficient protocol for accessing novel, structurally diverse azo disperse dyes from readily available starting material was established. It is an attractive approach for accessing a library of novel azo disperse dyes with good fastness properties.

Design, Synthesis and Activity Evaluation of Novel Bromodomain-Containing Protein 4 (BRD4) Small Molecule Inhibitor Based on ABBV-075



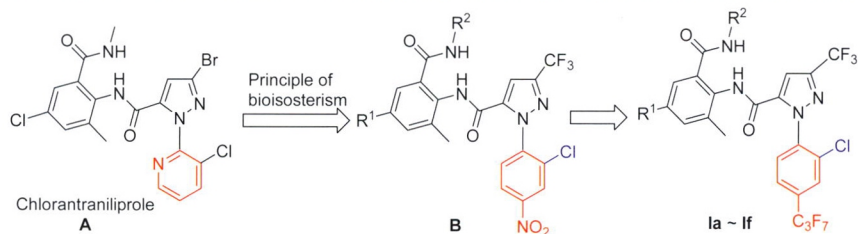
Xu, Chenhao; Gong, Yunpeng; Chen, Yaxin; Song, Qimeng; Li, Jiao; Zheng, Yichao; Li, Wen*; Sun, Kai*; Liu, Hongmin*
Chin. J. Org. Chem. **2021**, 41(4), 1712

activity of all compounds against BRD4 was tested.

16 compounds with 4 different nuclei based on ABBV-075 were designed and synthesized through scaffold hopping. The conditions of the Suzuki coupling reaction in the synthesis steps were optimized and the

NOTES

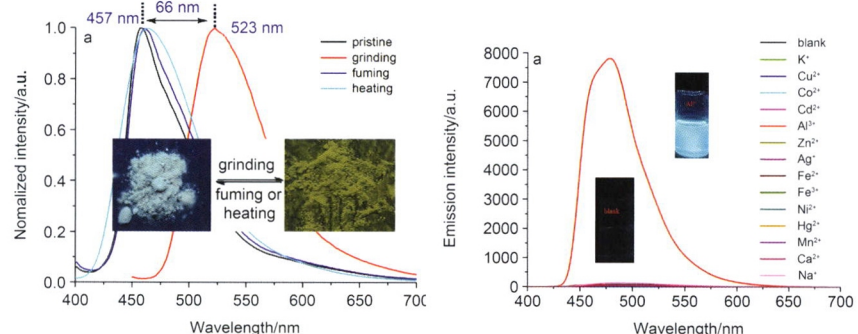
Design, Synthesis and Biological Activity Study of Novel *N*-Phenylpyrazole Anthranilic Diamides Containing Heptafluoroisopropyl Moieties



In order to develop new green pesticides with high efficiency and low toxicity, *N*-phenylpyrazole anthranilic diamides containing heptafluoroisopropyl moieties were designed, synthesized and evaluated for their insecticidal activity against *Oriental armyworm*.

Xie, Weibin; Li, Huangong; Meng, Xiangde; Li, Zhengming*; Zhou, Sha*
Chin. J. Org. Chem. **2021**, 41(4), 1722

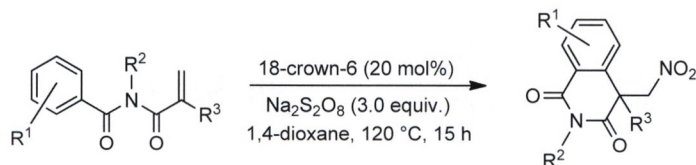
Mechanofluorochromic Luminescence, and Al^{3+} Detection of an Aggregation-Induced Emission-Active Salicylaldehyde-Based Acylhydrazone Derivative



A versatile aggregation-induced emission-active acylhydrazone compound **DHBH** has been designed and easily synthesized. It showed reversible mechanochromic luminescence upon grinding/fuming or heating. In addition, compound **DHBH** displayed selective turn-on fluorescence with Al^{3+} and the detection limit of Al^{3+} was calculated to be about 4.01×10^{-9} mol/L.

Jia, Junhui*; Wen, Juanjuan
Chin. J. Org. Chem. **2021**, 41(4), 1728

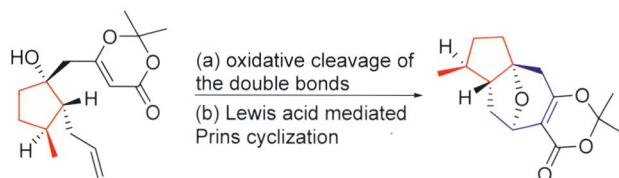
Synthesis of Nitro-Functionalized Isoquinolinediones via $\text{NaNO}_2/\text{Na}_2\text{S}_2\text{O}_8$ -Mediated Arylnitration of Alkenes



A new method for the synthesis of nitro-functionalized isoquinolinediones by arylnitration of methacryloylbenzamides has been reported. Readily accessible $\text{NaNO}_2/\text{Na}_2\text{S}_2\text{O}_8$ was used as nitro radical precursor, and 18-crown-6 was used to promote the reaction. Compared with the existing method, this method is not only environmentally friendly but also easy to operate.

Zhang, Lingling*; Wang, Zhi; Wu, Jian; Li, Xiaoqing*
Chin. J. Org. Chem. **2021**, 41(4), 1734

Synthesis of Framework Structure of Guaiane



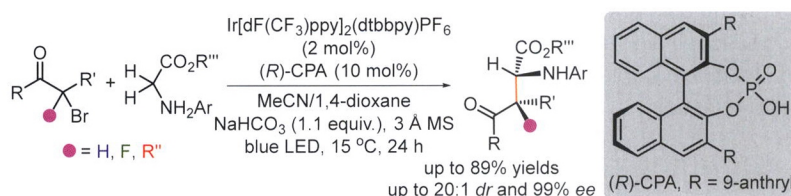
In this study, Prins reaction was used to synthesize chiral 5,7-fused oxygen bridged compound, which provided a new idea for the synthesis of guaiane sesquiterpenoid natural product skeletons. Based on dioxinone, chiral 5,7-fused oxygen bridged compound was synthesized by Lewis acid mediated Prins reaction in two steps with 72% yield.

Wang, Minshou*; Zhang, Hongbin*
Chin. J. Org. Chem. **2021**, 41(4), 1739

HIGHLIGHTS

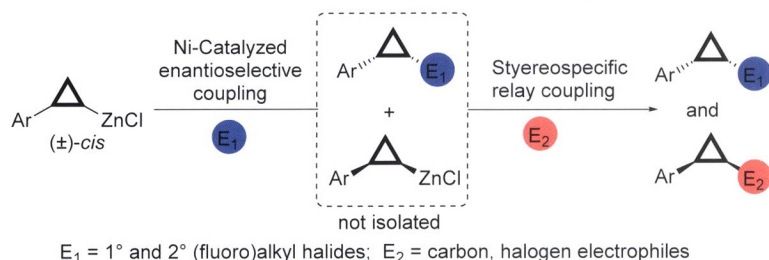
Synthesis of Chiral Unnatural α -Amino Acids Enabled by Photoredox/Brønsted Acid Cocatalysis

Zhang, Hong-Hao; Yu, Shouyun*

Chin. J. Org. Chem. **2021**, 41(4), 1744

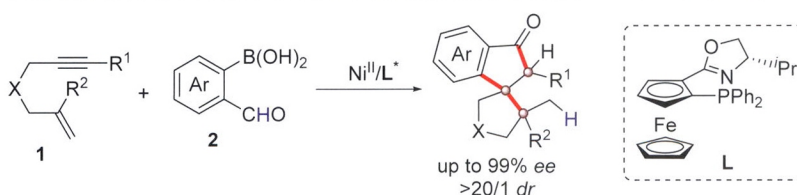
Enantiodivergent Relay Coupling for Nickel-Catalyzed Stereoselective Functionalization of Cyclopropylzinc Reagents

Cheng, Ruoshi; Bai, Dachang*

Chin. J. Org. Chem. **2021**, 41(4), 1746

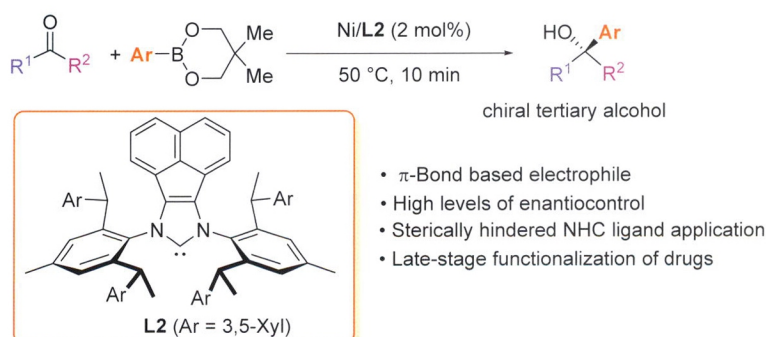
Enantioselective Nickel-Catalyzed Cascade Borrowing Hydrogen Cyclization to Access Spirocycles

Zhang, Hanyue; Jia, Yixia*

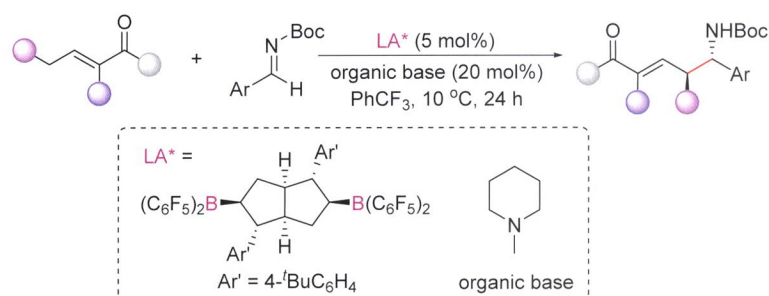
Chin. J. Org. Chem. **2021**, 41(4), 1749

Nickel/N-Heterocyclic Carbene Catalysis Catalyzed Enantioselective Suzuki-Miyaura Coupling of Ketones

Kong, Weiyu; Yin, Guoyin*

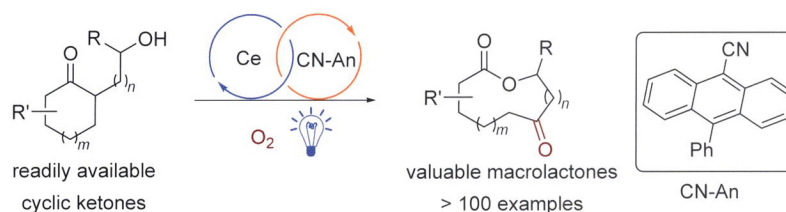
Chin. J. Org. Chem. **2021**, 41(4), 1751Direct Asymmetric Vinylogous Mannich Reactions of Acyclic α,β -Unsaturated Ketones Catalyzed by Chiral Boranes

Yang, Kai; Song, Qiuling*

Chin. J. Org. Chem. **2021**, 41(4), 1753

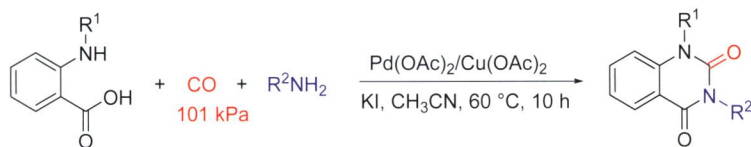
Macrolactones via Photoinduced Ring Expansion of Cyclic Ketones

Ye, Juntao*

Chin. J. Org. Chem. **2021**, 41(4), 1755

CONTENT

Palladium-Catalyzed [4+1+1] Cycloaddition for the Direct Synthesis of *N*-Substituted Quinazoline-2,4(1*H*,3*H*)-diones



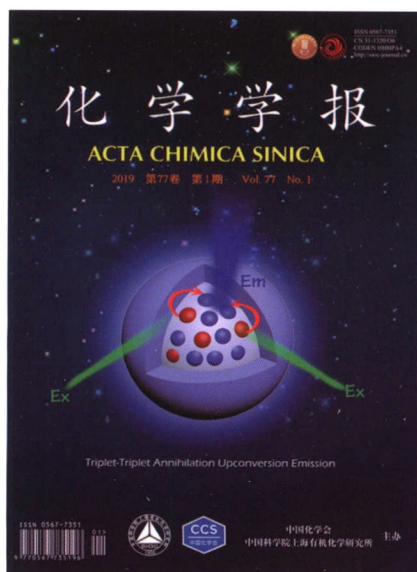
Ding, Yongzheng; Huang, Hanmin*
Chin. J. Org. Chem. **2021**, 41(4), 1757

√ simple substrates

√ high step- and atom- economy

√ mild reaction conditions

√ good product diversity



化学学报

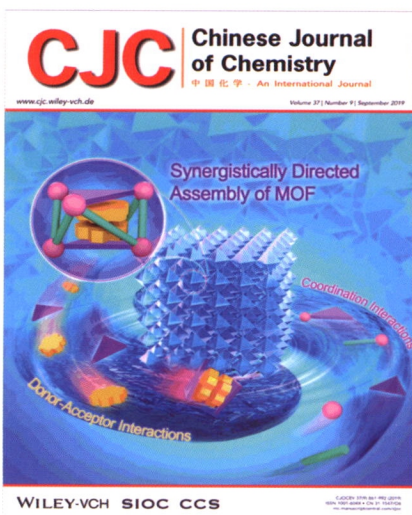
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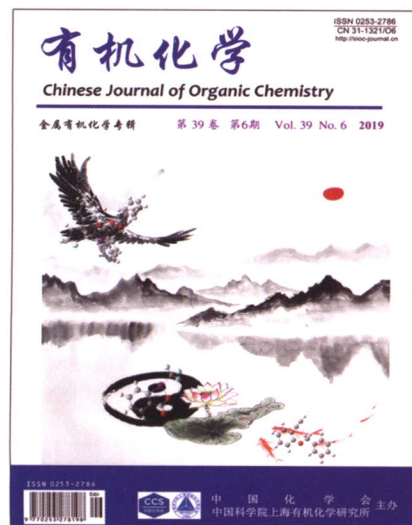
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