

# CJC

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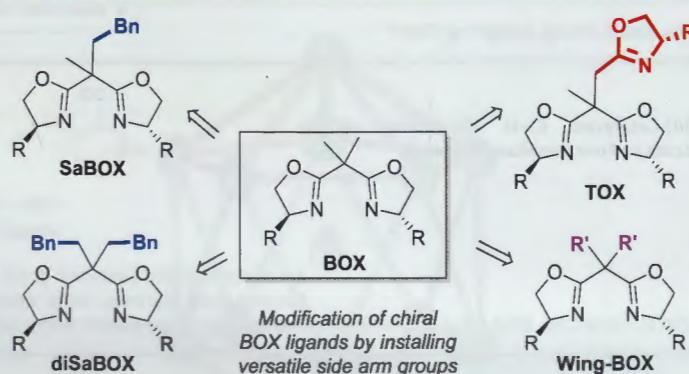


WILEY-VCH SIOC CCS

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## Chemistry Authors Up Close

1123  
Sidearm Modified Bisoxazoline Ligands and Their Applications

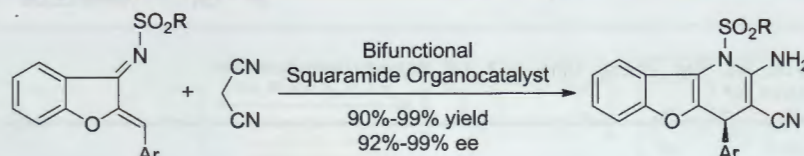


A journey towards developing sidearm modified chiral bisoxazoline ligands and their applications in asymmetric catalysis is introduced. The sidearm modified chiral bisoxazoline ligands included TOX, SaBOX, diSaBOX and Wing-BOX.

Lijia Wang, Jian Zhou, Yong Tang\*

## Concise Reports

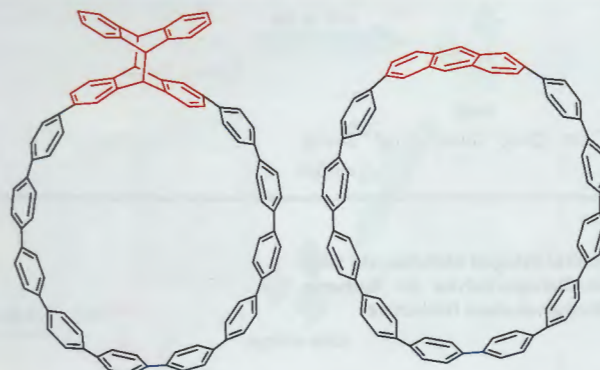
1130  
Synthesis of Benzofuran-fused 1,4-Dihydropyridines via Bifunctional Squaramide-catalyzed Formal [4+2] Cycloaddition of Azadienes with Malononitrile



An efficient bifunctional squaramide-catalyzed Michael addition/cyclization of azadienes with malononitrile has been successfully developed, providing a facile access to chiral benzofuran-fused 1,4-dihydropyridines with excellent yields, wide substrate scope and up to 99% ee. Additionally, this formal [4+2] cycloaddition can be performed in gram scale without noticeable loss of yield and enantioselectivity.

Zheng Gu, Bo Wu, Guo-Fang Jiang, Yong-Gui Zhou\*

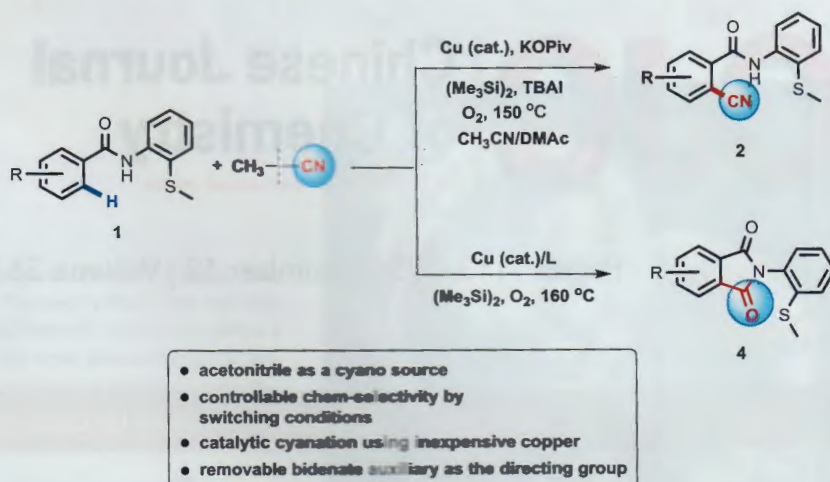
1135  
Synthesis of Macrocyclic Oligoparaphenylenes Derived from Anthracene Photodimer



We report the efficient syntheses of two novel oligoparaphenylene-derived macrocycles using the anthracene photodimerization–cycloreversion strategy. Their photophysical, electrochemical, and computational properties, in comparison with that of [12]cycloparaphenylene, show intriguing effects of  $\pi$ -conjugation interruption and anthracene incorporation.

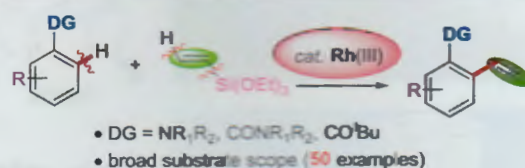
Lifeng Guo, Xiaodi Yang, Huan Cong\*

1139  
Copper-Mediated Cyanation of Aryl C—H Bond with Removable Bidentate Auxiliary Using Acetonitrile as the Cyano Source



Zhengwei Yu, Saisai Zhang, Zengming Shen\*

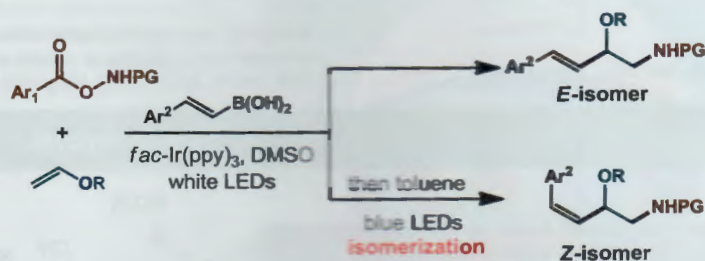
1143  
Rhodium(III)-Catalyzed C—H Vinylation of Arenes: Access to Functionalized Styrenes



An effective Rh(III)-catalyzed direct vinylation of arenes has been developed for the synthesis of functionalized styrenes, using vinyltriethoxysilane as a convenient and inexpensive vinyl source. The reaction is compatible with a wide range of directing groups and various functional groups.

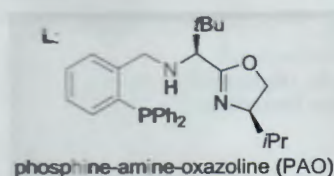
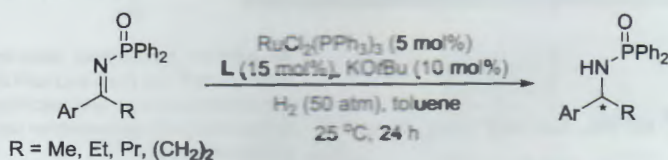
Jun Zhou, Xin Li, Gang Liao, Bing-Feng Shi\*

1147  
Stereodivergent Synthesis of  $\alpha$ -Aminomethyl Cinnamyl Ethers via Photoredox-Catalyzed Radical Relay Reaction



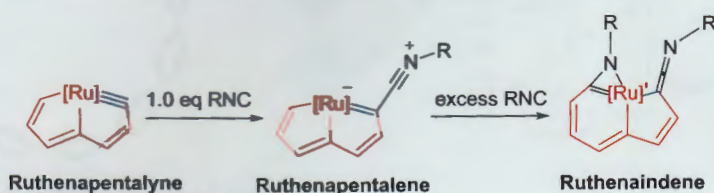
Xiao-De An, Hao Zhang, Qing Xu,\* Lei Yu, Shouyun Yu\*

1151  
A New Phosphine-Amine-Oxazoline Ligand for Ru-Catalyzed Asymmetric Hydrogenation of N-Phosphinylimines



Xiaochen Ma, Lin Qiao, Guixia Liu,\* Zheng Huang\*

1156  
Alternation of Metal-Bridged Metallacycle Skeletons: From Ruthenapentalene to Ruthenapentalene and Ruthenaindene Derivative



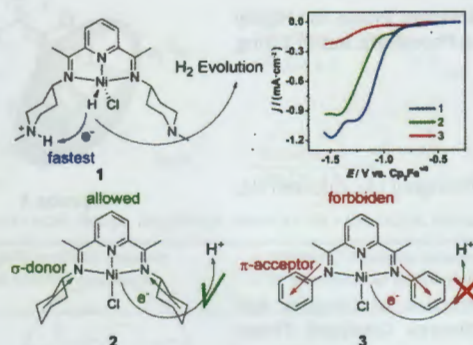
Jinhua Li, Huijun Kang, Kaiyue Zhuo, Qingde Zhuo, Hong Zhang, Yu-Mei Lin,\* Haiping Xia\*

The first reported metal-bridged ruthenaindene derivatives have been achieved by the ring-expansion reaction of ruthenapentalene through a rare ruthenapentalene.

1161

### Nickel Complexes with Non-innocent Ligands as Highly Active Electrocatalysts for Hydrogen Evolution

Zhixin Chen, Tao Wang, Tingting Sun, Zhiyong Chen, Tian Sheng, Yu-Hao Hong, Zi-Ang Nan, Jun Zhu,\* Zhi-You Zhou,\* Haiping Xia,\* Shi-Gang Sun

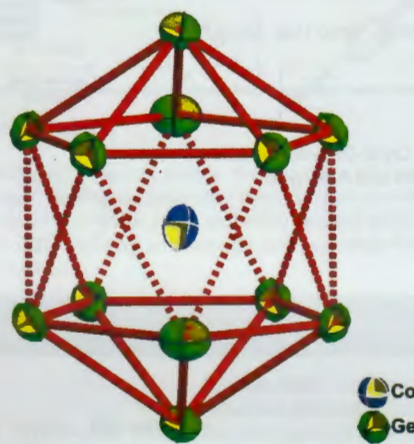


Regulation of metal center reduction and metal hydride formation for HER — lower overpotentials and faster reaction rates.

1165

### Symmetry Reduction upon Size Mismatch: The Non-Icosahedral Intermetalloid Cluster [Co@Ge<sub>12</sub>]<sup>3-</sup>

Chao Liu, Lei-Jiao Li, Ivan A. Popov, Robert J. Wilson, Cong-Qiao Xu, Jun Li, Alexander I. Boldyrev, Zhong-Ming Sun\*

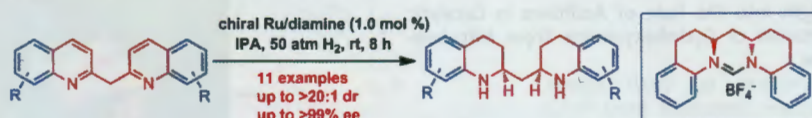


The pseudo- $D_{5d}$  geometry of [Co@Ge<sub>12</sub>]<sup>3-</sup> can be viewed as structurally derived from an icosahedral cage via Jahn-Teller effect, leading to notable bonding differences from  $I_h$ -[M@E<sub>12</sub>]<sup>q-</sup> clusters (E = Sn, Pb with  $q = 2, 3$ ).

1169

### Asymmetric Hydrogenation of Bis(quinolin-2-yl)methanes: A Direct Access to Chiral 1,3-Diamines

Bin Li, Cong Xu, Yan-Mei He,\* Guo-Jun Deng, Qing-Hua Fan\*

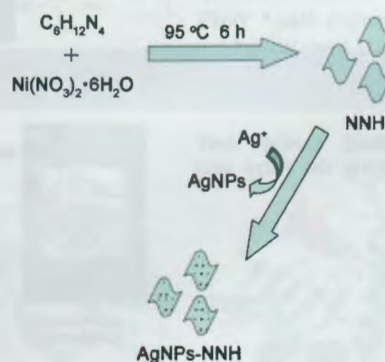


The first asymmetric hydrogenation of bis(quinolin-2-yl)methanes using chiral cationic ruthenium diamine catalysts was developed with up to > 20 : 1 *dr* and > 99% *ee*. This new protocol provides a practical and facile approach to not only chiral 1,3-diamines but also a novel class of 6-membered chiral NHC ligands.

1174

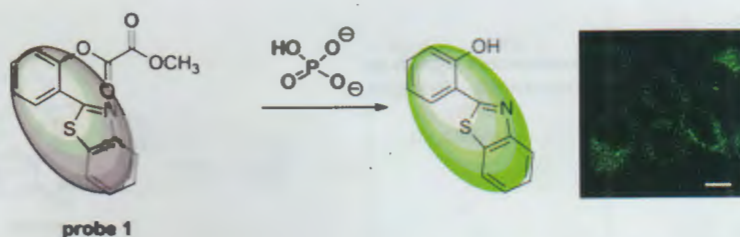
### Electrochemical Sensor Based on AgNPs-NNH Nanocomposites for Hydrogen Peroxide Detection by Zero Current Potentiometry

Yanyl Fu, Huan Hao, Xiaoli Liu, Jianbin Zheng\*



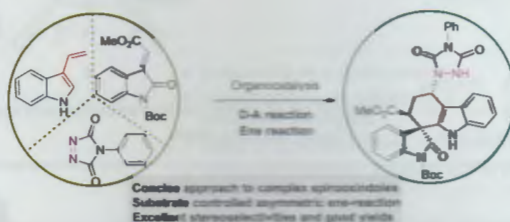
The process for preparing AgNPs-NNH nanocomposites was showed above. Firstly, the layered NNH was synthesized by hydrothermal method. Subsequently, AgNPs were well distributed on the surface of NNH under in-situ reduction. The AgNPs-NNH nanocomposites were used to construct sensing interface, developing electrochemical sensor for H<sub>2</sub>O<sub>2</sub> detection.

1179  
A Novel Turn-on Fluorescent Probe for Highly Selective Detection of Phosphate Ion in Living Cell



Jin Zhang,\* Si Wang, Changhui Liu, Guowen He, Tianying Peng

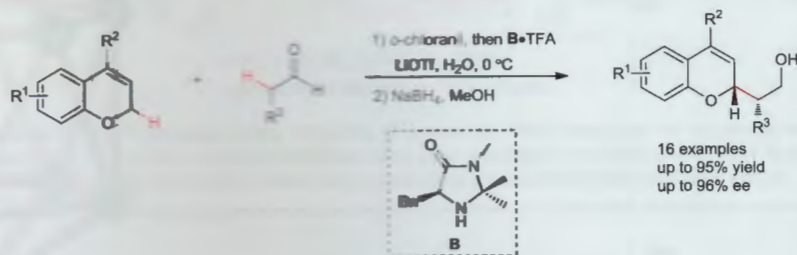
1182  
Stereoselective Construction of Complex Spirooxindoles via Bisthiourea Catalyzed Three-Component Reactions



A well-designed three-component reaction was developed to construct a class of optically active carbazolespirooxindole-urazoles in good yields with excellent stereoselectivities via tandem Diels-Alder reaction and ene-reaction.

Lin-Lin Zhang, Ji-Wei Zhang, Shao-Hua Xiang,\* Zhen Guo,\* Bin Tan\*

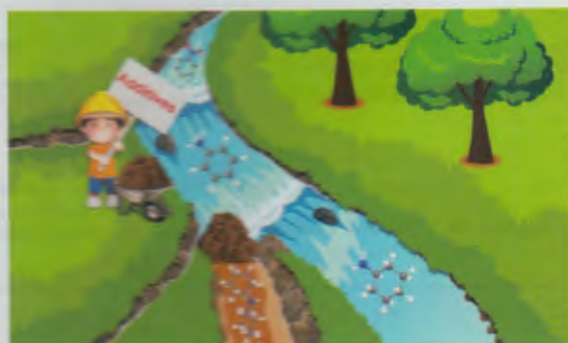
1187  
Catalytic Asymmetric Cross-Dehydrogenative Coupling of 2H-Chromenes and Aldehydes



The first catalytic asymmetric cross-dehydrogenative coupling of 2H-chromenes with aldehydes using *o*-chloranil as an oxidant has been described. The organocatalytic process is tolerated with a broad range of structurally and electronically varied 2H-chromenes and aldehydes with good yield and high enantiocontrol.

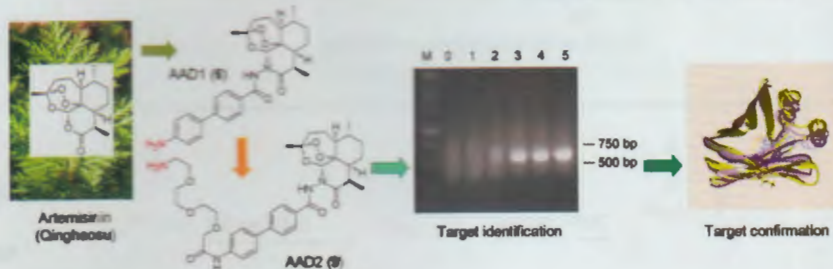
Xinhui Pan, Xigong Liu, Shutao Sun, Zhilin Meng, Lei Liu\*

1191  
Insight into the Role of Additives in Catalytic Synthesis of Cyclohexylamine from Nitrobenzene



Xuefeng Li, Zhe Wang, Shanjun Mao,\* Yiqing Chen, Minghui Tang, Haoran Li, Yong Wang\*

1197  
11-Aza-artemisinin Derivatives Exhibit Anti-cancer Activities by Targeting the Fatty Acid Binding Protein 6 (FABP6)



Two new anti-cancer 11-aza-artemisinin derivatives AAD1 and AAD2 with terminal amino groups were successfully synthesized, evaluated and applied as the probes for the study of target identification and mechanism of action. FABP6 protein was identified and further confirmed as one target of these azaartemisinin derivatives.

Xin-Ya Chen, Yue Yin, Jie Xi, Yi Yuan, Yan Li, Qing Li, Ren-Xiao Wang, Zhu-Jun Yao,\* Gong-Li Tang\*

1202

### Fluoro-Hydroxylation of *gem*-Difluoroalkenes: Synthesis of $^{18}\text{O}$ -labeled $\alpha\text{-CF}_3$ Alcohols



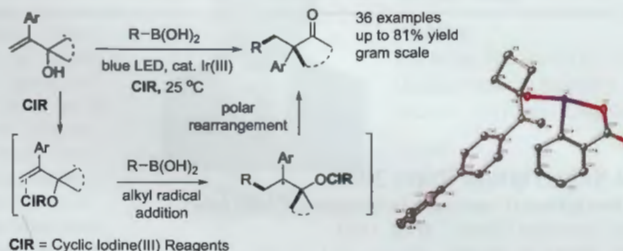
✓ Readily available reagents  
✓ Mild reaction conditions

✓ Efficient  $^{18}\text{O}$ -isotope labelling  
✓ 26 examples, up to 99% yield.

Jingyu Hu, Yide Yang, Zhengzhao Lou, Chuanfa Ni, Jinbo Hu\*

1209

### Cyclic Iodine Reagents Enable Allylic Alcohols for Alkyl Boronate Addition/Rearrangement by Photoredox Catalysis



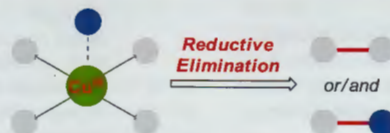
Here we report cyclic iodine(III) reagents enable the synthesis of cyclopentanones, cyclohexanones, and dihydrofuranones bearing  $\alpha$ -quaternary centers by photoredox catalysis. The reaction proceeds by the formation of the novel cyclic iodine(III) reagent-allylic alcohol complex, which enables the first alkyl boronate addition and semi-pinacol rearrangement of allylic alcohols with dual alcohol and olefin activation.

Mingshang Liu, Hanchu Huang, Yiyun Chen\*

## Recent Advances

1213

### Organocopper(III) Compounds with Well-defined Structures Undergo Reductive Elimination to Form C—C or C—Heteroatom Bonds

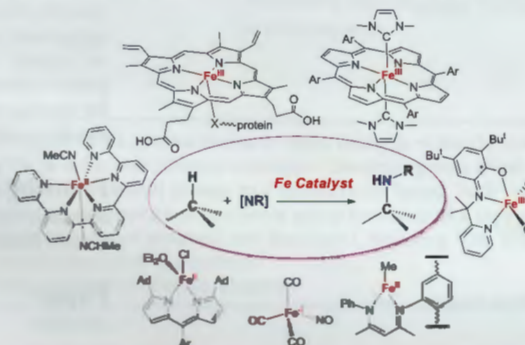


Stoichiometric and catalytic reactions involving reductive elimination of structurally well-defined organocopper(III) compounds are summarized. Other organocopper(III) compounds of well-defined structures but inert to reductive elimination are also presented for comparison.

Liang Liu,\* Zhenfeng Xi\*

1222

### Recent Advances in Iron-Catalyzed C—H Bond Amination *via* Iron Imido Intermediate



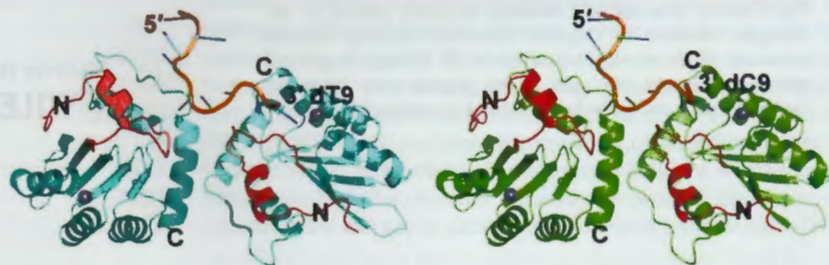
Recent study on Fe-catalyzed C—H bond amination reactions has led to the development of a series of new iron catalysts that enable the direct functionalization of C—H bonds into C—NHRs.

Feng Wang, Liang Deng\*

## Comprehensive Report

1241

### Crystal Structure of Cytidine Deaminase Human APOBEC3F Chimeric Catalytic Domain in Com- plex with DNA



Chao Cheng, Tianlong Zhang, Chunxi Wang,  
Wenxian Lan, Jianping Ding, Chunyang Cao\*

1249

Author Index to Volume 36, 2018