# 有机化学

# Chinese Journal of Organic Chemistry

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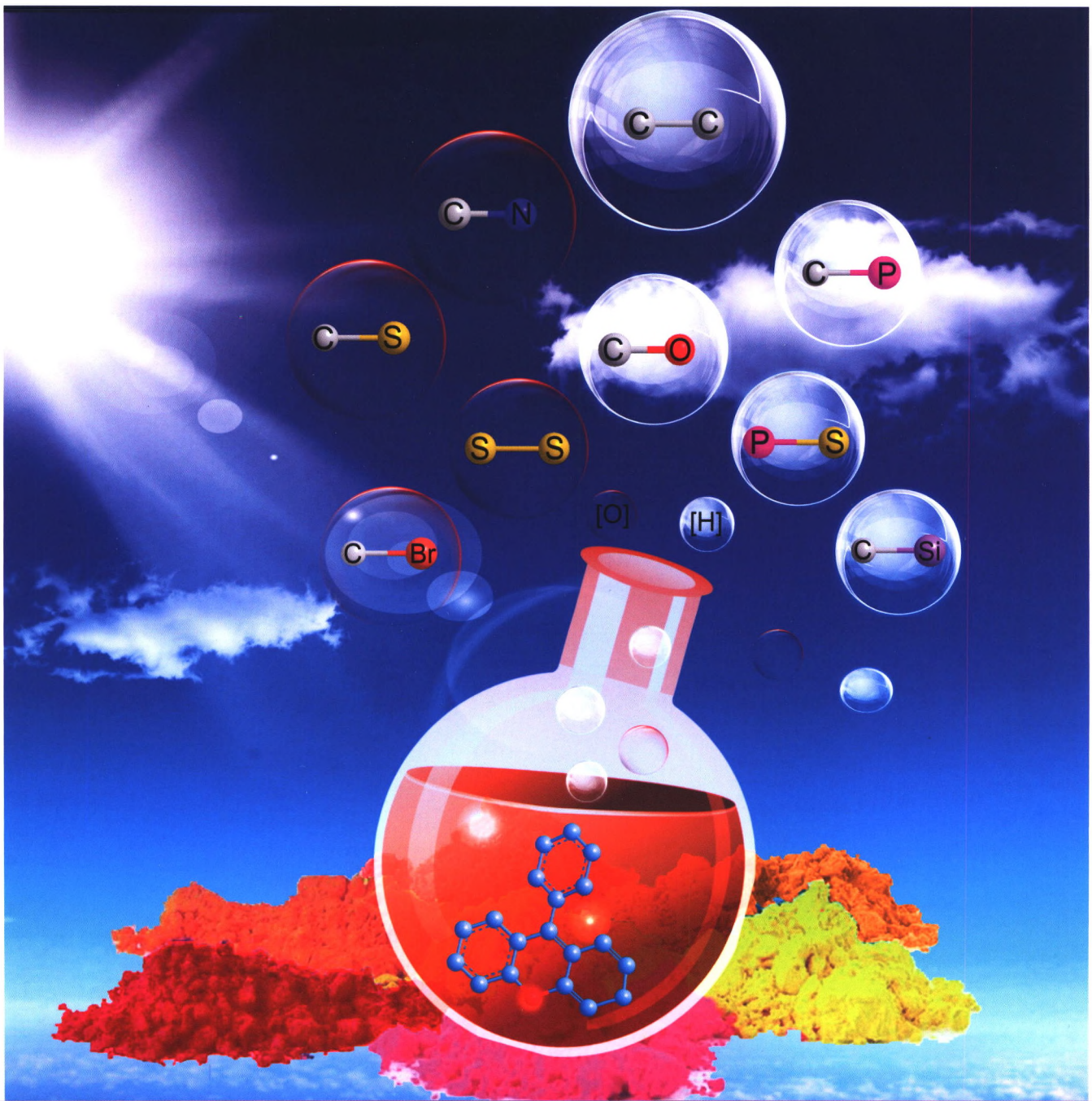


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# 有 机 化 学 (月刊)

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(YOUJI HUAXUE)

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## 目 次

### 综述与进展



### 研究论文




* 通讯联系人.

## 研究简报

# Chinese Journal of Organic Chemistry

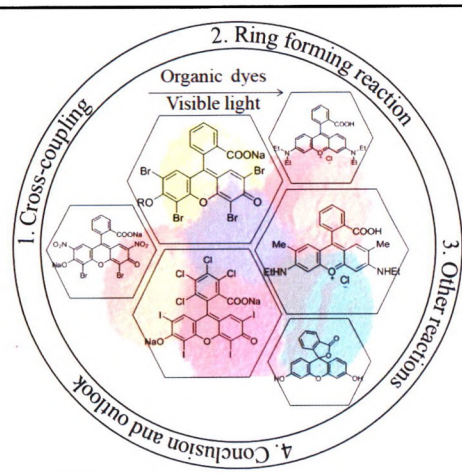
## Vol. 38 No. 11 November 2018


On the Cover

The recent progress in the application of oxime organic dyes in visible light-induced organic synthesis is reviewed by Xu, Dai, Xu, and Weng on page 2807, with different reaction types and reaction conditions being summarized. Acting as photoredox catalysts, the advantages of good availability, mild reaction conditions and low cost make oxime organic dyes appealing for visible light-induced organic synthesis.

## REVIEWS

### Application of Oxime Organic Dyes in Visible-Light-Induced Organic Synthesis

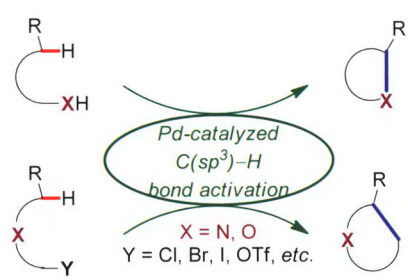



Oxime organic dyes, acting as photoredox catalysts, are widely used in visible-light-induced organic synthesis due to their advantages of low cost, good water solubility, high reactivity and so on. In this paper, the applications of organic dyes in organic synthesis are reviewed, the characteristics of organic dyes are summarized, and their future outlook is also discussed.


Xu, Wenxiu; Dai, Xiaoqiang; Xu, Hanjing; Weng, Jianquan*


*Chin. J. Org. Chem.* **2018**, *38*(11), 2807


### Recent Advances in the Synthesis of Heterocyclic Compounds via Pd-Catalyzed C($sp^3$)—H Bond Activation

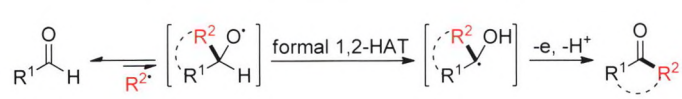



The recent progress in the synthesis of heterocyclic compounds via Pd-catalyzed C($sp^3$)—H bond activation is reviewed on the basis of different ring number of heterocyclic compounds. The reaction selectivity, substrate compatibility, reaction mechanism, advantages and disadvantages as well as an outlook in this field are discussed.


Zhao, Kang; Yang, Lei*; Liu, Jianhua*; Xia, Chungu*


*Chin. J. Org. Chem.* **2018**, *38*(11), 2833


### Recent Advances on Oxidative Radical Addition to Aldehydes



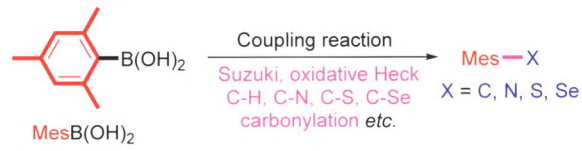

The recent progress in oxidative radical addition to aldehydes is reviewed. The strategy features a formal 1,2-hydrogen atom transfer of resulting alkoxy radicals, followed by single electron transfer oxidation and deprotonation to give various cyclic or acyclic ketones in promising yields. The scope, limitations, mechanism, and future development and application are discussed.


Kong, Lichun; Zhou, Yulu; Luo, Fang; Zhu, Gangguo*


*Chin. J. Org. Chem.* **2018**, *38*(11), 2858

# CONTENT

## Application of Mesitylboronic Acid and Its Esters in Coupling Reactions

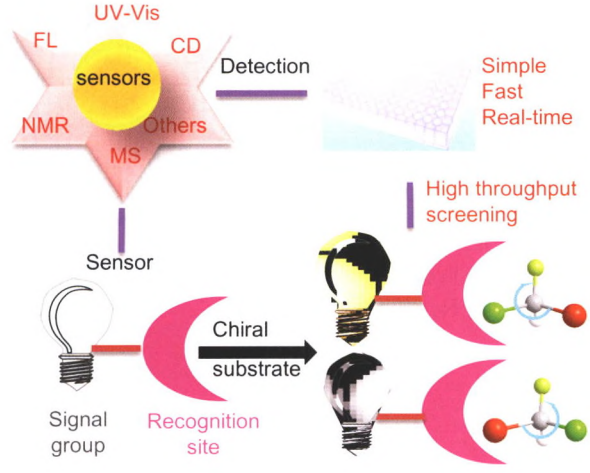



Wu, Yao; Dou, Zhengjie; Wu, Caimei; Chen, Huabao; Zhang, Zumin; Wang, Xianxiang; Yin, Zhongqiong; Song, Xu; He, Changliang; Yue, Guizhou*

*Chin. J. Org. Chem.* **2018**, *38*(11), 2896

Organic boronic reagents have played a critical role in the field of organic synthesis. 2,4,6-Mesitylboronic acid and its esters were used widely in various couplings, including Suzuki, aromatic C—H activation, oxidative Heck, carbonylation, decarboxylation, photoredox and other C—X (C—N, C—S, C—Se) bonding. Herein, the application of mesityl boronic acid and its ester in coupling reaction is reviewed.

## Advances in Development of Chiral Sensors

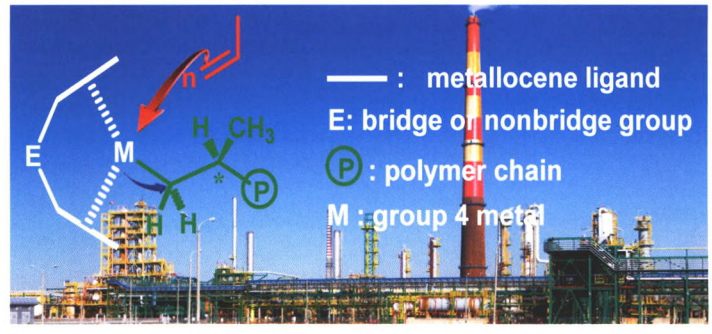



Xiong, Fei; Li, Li*

*Chin. J. Org. Chem.* **2018**, *38*(11), 2927

Chiral sensors could determine the absolute configuration and the value of enantiomeric excess of enantiomers, with greater advantages of simple, rapid, sensitive and real-time in the measurement. The characteristics and applications of chiral sensors in recent years are introduced, mainly including chiral fluorescent sensors, circular dichroism sensors, UV-Vis sensors, NMR sensors and MS sensors. The prospects of chiral sensors are also discussed.

## Metallocene Catalyst Systems and Control over the Propylene Polymerization




Chen, Zhikang; Mao, Yuanhong; Cao, Yucai; Liang, Shengbiao*; Song, Sha; Ni, Chen; Liu, Zhenyu; Ye, Xiaofeng; Shen, An; Zhu, Hongping*

*Chin. J. Org. Chem.* **2018**, *38*(11), 2937

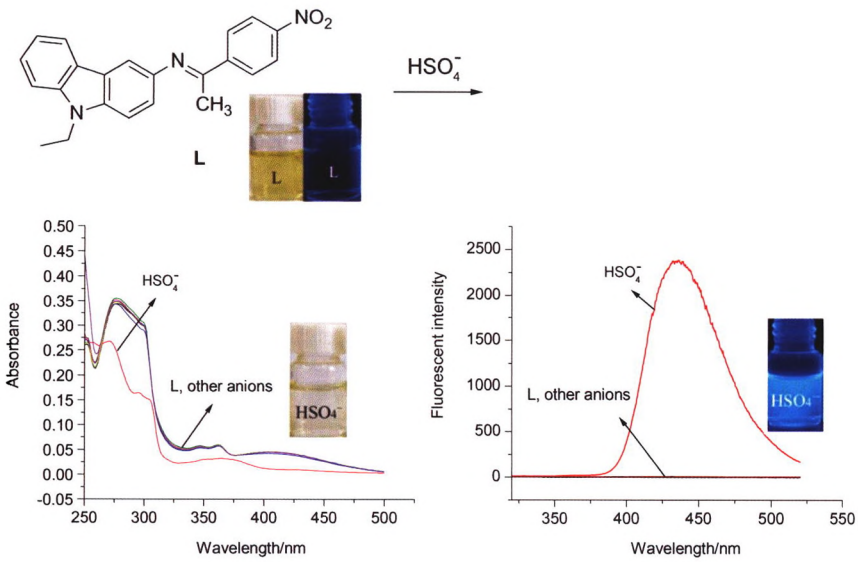
It is urgent to develop the metallocene catalysts for the industrial use in our country. This contribution focuses on summary of almost all of the so far reported metallocene catalysts utilized for the propylene polymerization as well as on discussion on the structure-property correlationship of the catalysts. We hope it provides a profound insight into this system that is remarkably important in the field of olefin polymerization.

# CONTENT

## ARTICLES

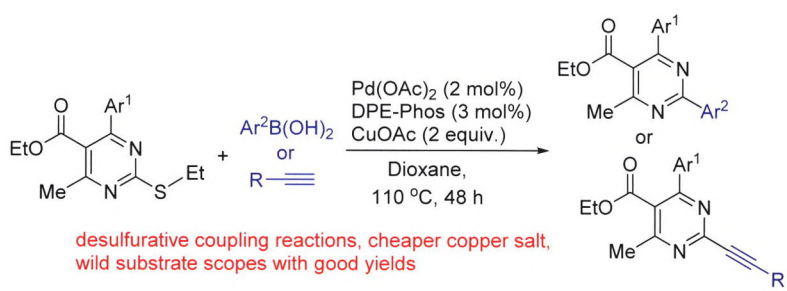
## Detection of $HSO_4^-$ Ion with a Colorimetric and Fluorescent Probe Based on Hydrolysis Reaction of Carbazole-Derived Schiff Base in Aqueous Medium




Li, Yingjun*; Zhang, Nan; Liu, Jihong; Jin, Kun; Wang, Siyuan
*Chin. J. Org. Chem.* **2018**, *38*(11), 3026

A novel carbazole-based Schiff base derivative **L** was synthesized and evaluated for the property of selective detection of $HSO_4^-$ ions in aqueous medium. *N*-(9-Ethyl-carbazol-3-yl)-1-methyl-1-(4-nitrophenyl)methanimine (**L**) selectively recognized $HSO_4^-$ ion in $CH_3CN$-$H_2O$ ($V$ : $V$=9 : 1) via the hydrolysis reaction of Schiff bases to elicit a distinct visual color change from orange to colorless with a significant blue fluorescence under the UV lamp.

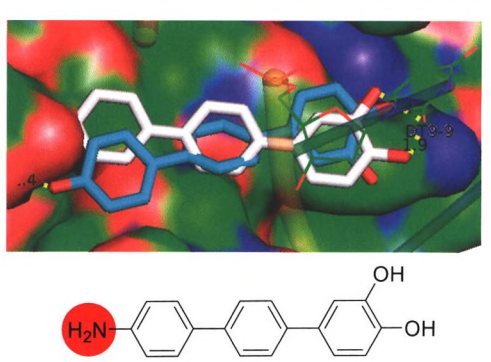
## Palladium/Copper(I) Acetate-Promoted Desulfurative Coupling of Pyrimidine Thioether with Alkynes or Arylboronic Acids




Liu, Boqu; Yan, Zhongfei; Quan, Zhengjun*
*Chin. J. Org. Chem.* **2018**, *38*(11), 3032

An efficient method for Pd-catalyzed and copper(I) acetate-promoted desulfurative carbon-carbon coupling reaction of pyrimidine thioether with alkynes or arylboronic acids is described.

## Design and Synthesis of Natural Product-Like Terphenyl as Potent Topoisomerase IIα Inhibitors




Novel TOP2α inhibitor with high cytotoxic activity

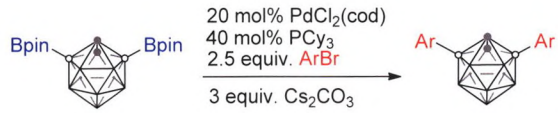
Guan, Mengjia; Qiu, Jin; Lu, Chunhua; Zhao, Baobing*; Shen, Yuemao
*Chin. J. Org. Chem.* **2018**, *38*(11), 3039

A series of terphenyls were synthesized. Among these derivatives, 4"-amino-[1,1':4',1"-terphenyl]-3,4-diol (**17**) had the most potent cytotoxic activity against the MDA-MB-435 cell line, and strong inhibitory effect on topoisomerase IIα, but not on topoisomerase I.

# CONTENT

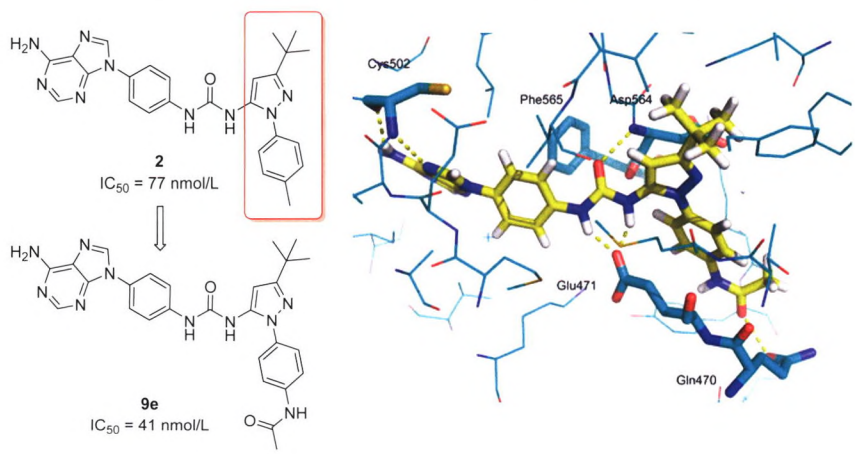
### Palladium-Catalyzed Cross-Coupling Reactions of Borylated *o*-Carborane: Synthesis of 3,6-Diaryl-*o*-carboranes




A general method for the synthesis of B(3,6)-diaryl-*o*-carboranes has been developed using palladium-catalyzed cross-coupling of 3,6-borylated *o*-carborane with aryl bromides. $PdCl_2$(cod)/tricyclohexylphosphine catalyst system can avoid the formation of aryl-aryl exchange and direct B—H arylation by-products.

Xu, Xinbin; Cheng, Ruofei; Qiu, Zaozao*; Pan, Chengling*
*Chin. J. Org. Chem.* **2018**, *38*(11), 3078

### Structure Optimization and Structure-Activity Relationship Study of a Kind of Type II FAK Inhibitors with *N*-Phenylpyrazole Ureas

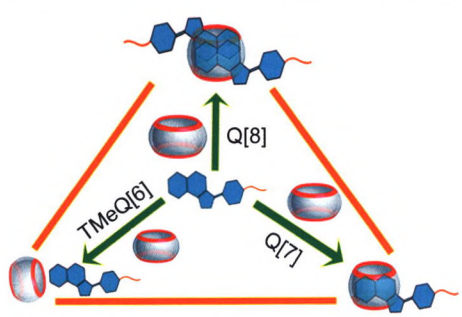



*N*-Phenylpyrazole motif of type II FAK inhibitor **2** was modified at the 2-, 4-, and 6-positions of phenyl and 3-position of pyrazole according to allosteric hydrophobic pockets in order to improve the activity and explore structure-activity relationship. Nine aimed compounds were synthesized and evaluated. Structure and activity relationship demonstrated that the modification at 4-position of phenyl had less influence on activity.

Gong, Chaochao; Tan, Hanyi; Zhang, Qian*
*Chin. J. Org. Chem.* **2018**, *38*(11), 3086

## NOTES

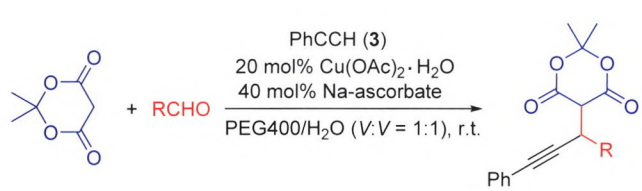
### Self-Assembly Modes of Three Cucurbit[*n*]urils with a Benzoindazole Derivative




The self-assembly binding models of tetramethyl cucurbit[6]uril (TMeQ[6]), cucurbit[7]uril (Q[7]) and cucurbit[8]uril (Q[8]) with 3-pyridyl benzoxazole derivatives were investigated by $^1$H NMR, MS, isothermal titration calorimetry and UV-Vis spectrum.

Wang, Haiyan; Kan, Jinglan; Bian, Bing; Chen, Qing*; Tao, Zhu; Xiao, Xin*
*Chin. J. Org. Chem.* **2018**, *38*(11), 3094

### "One-Pot" Synthesis of 5-(1-Phenyl-3-phenylprop-2-ynyl)-2,2-dimethyl-1,3-dioxane-4,6-dione Catalyzed by Copper Acetate



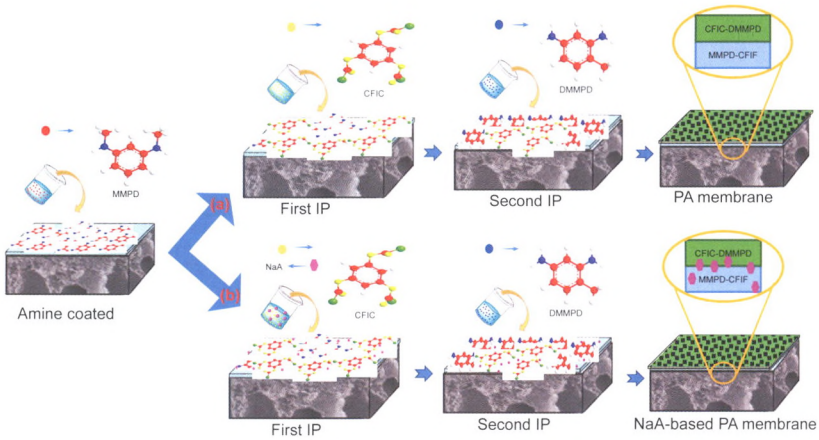

In the presence of copper acetate, ten 5-(1-phenyl-3-phenylprop-2-ynyl)-2,2-dimethyl-1,3-dioxane-4,6-dione derivatives were synthesized via the three component one-pot reaction of 2,2-dimethyl-1,3-dioxane-4,6-dione with aldehydes and phenylacetylene by using Na-ascorbate as a reductant. The respective products were in high yields of 63%～86%.

Xu, Zhaohui*; Chen, Feibiao; Li, Yuyu; Huang, Qingshui; Liao, Chuanwen*
*Chin. J. Org. Chem.* **2018**, *38*(11), 3101

# CONTENT

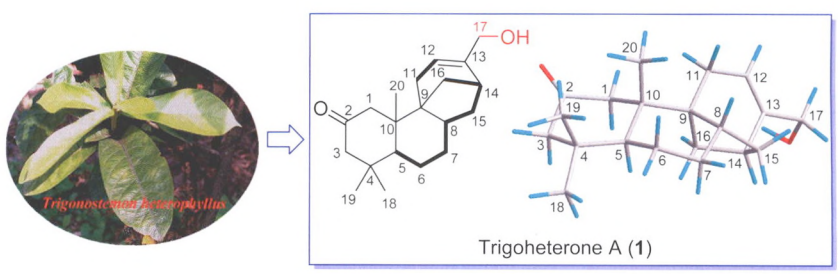
## Modification of Polyimide-Urethane Reverse Osimosis Composite Membrane Based on NaA Zeolite




Liu, Lifen*; Zhang, Xiao; Xie, Xin; Li, Ruihan; Gao, Congjie
*Chin. J. Org. Chem.* **2018**, *38*(11), 3127

A chlorine resistance polyimide-urethane reverse osmosis composite membrane was first prepared with *N*,*N*′-dimethyl-m-phenylenediamine (DMMPD), 4-methyl-phenylenediamine (MMPD) and 5-choroformyloxyisophaloyl chloride (CFIC) via two-step interfacial polymerization, and then this membrane was further modified by doping NaA zeolite in the organic phase for improving its organic foulant resistant property.

## A New Stemodane Diterpenoid from the Stems and Leaves of *Trigonostemon heterophyllus*




Liu, Yanping; Zhang, Xianglin; Niu, Haiyuan; Guan, Chunyan; Sun, Fukang; Yang, Liumeng; Fu, Yanhui*
*Chin. J. Org. Chem.* **2018**, *38*(11), 3137

A new stemodane diterpenoid, trigoheterone A (**1**), together with seven known diterpenoids, was isolated from the stems and leaves of *Trigonostemon heterophyllus*. All known compounds were isolated from the genus *Trigonostemon* for the first time. The cytotoxicities of all isolated compounds were evaluated against five cancer cell lines (HL-60, A549, SMMC-7721, MCF-7 and SW480). As a result, eight compounds exhibited significant inhibitory effects with $IC_{50}$ values comparable to those of cisplatin.

## HIGHLIGHTS



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