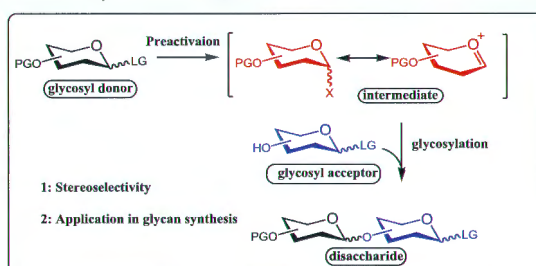


Chemistry Authors Up Close

Donor Preactivation-Based Glycosylation: An Efficient Strategy for Glycan Synthesis

XianJin Qin and Xin-Shan Ye*

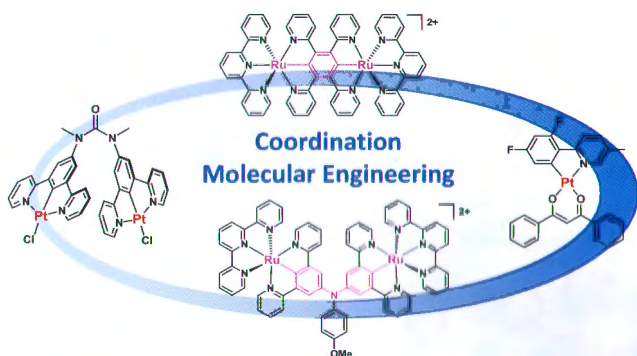
Chin. J. Chem. 2021, 39, 531–542. DOI: 10.1002/cjoc.202000484



Photofunction-Directed Coordination Molecular Engineering

Yu-Wu Zhong*

Chin. J. Chem. 2021, 39, 543–549. DOI: 10.1002/cjoc.202000477

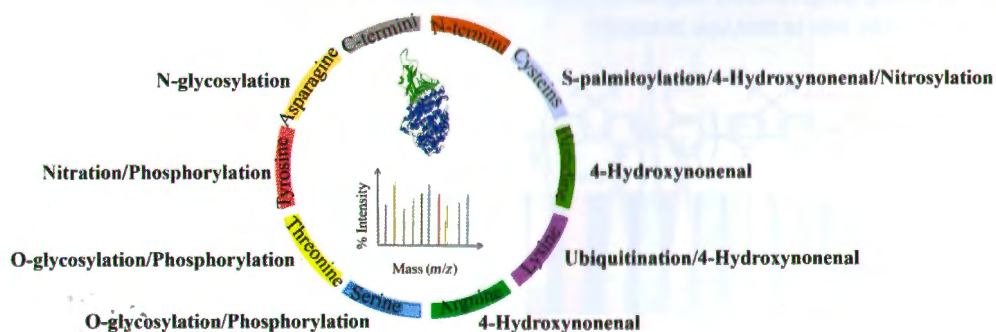


Recent progress on the design and syntheses of photofunctional metal complexes and their assemblies is summarized from the perspective of coordination molecular engineering.

Discover the Post-Translational Modification Proteome Using Mass Spectrometry

Ying Zhang, Caiyun Fang, Huimin Bao, Wenjuan Yuan, and Haojie Lu*

Chin. J. Chem. 2021, 39, 550–558. DOI: 10.1002/cjoc.202000515

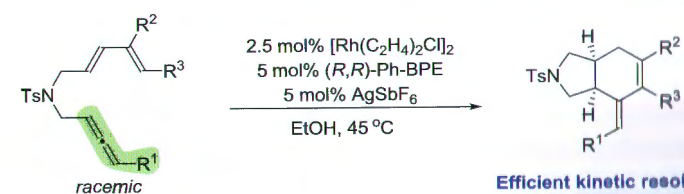


Breaking Report

Rh-Catalyzed Kinetic Resolution-Based Enantioselective [4+2]-Cycloaddition-Isomerization of Allene-1,3-dienes

Anni Qin, Qian Zhang, Hui Qian,* Yulin Han,* and Shengming Ma*

Chin. J. Chem. 2021, 39, 559–565. DOI: 10.1002/cjoc.202000659

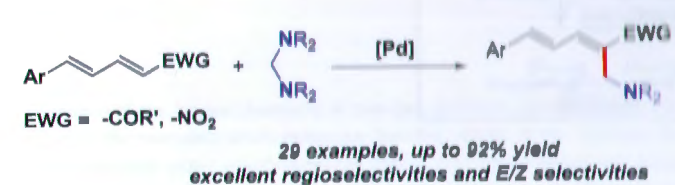
Efficient kinetic resolution
Excellent enantioselectivity
and *Z/E* selectivityBicyclic products were synthesized through Rh-catalyzed [4+2]-cycloaddition kinetic resolution of 1,3-disubstituted allene-1,3-dienes. This reaction involves C=C bond isomerization. The resulting *cis*-[4.3.0]bicyclic products possess a very high ee and *Z/E* selectivity. Some derivatizations of bicyclic products such as oxidation and dihydroxylation have been achieved.

Concise Reports

Palladium-Catalyzed Aminomethylation of Nitrodienes and Dienones via Double C=N Bond Activation

Bangkui Yu, Bao Gao, Xuexia Zhang, Haocheng Zhang, and Hanmin Huang*

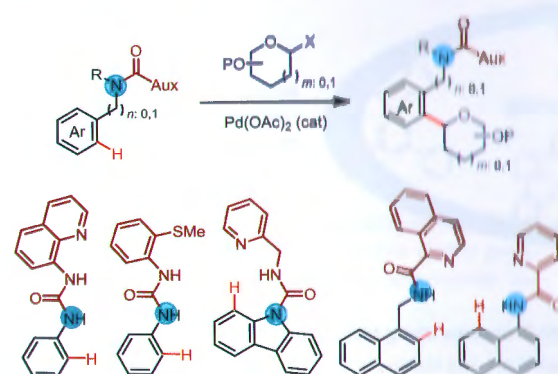
Chin. J. Chem. 2021, 39, 566–570. DOI: 10.1002/cjoc.202000184

A new strategy for the generation of the active Pd-alkyl species from amina via C=N bond activation has been established, in which the formation of zwitterionic intermediate through aza-Michael addition of amina to nitrodienes or dienones is identified as a key step for activation of the C=N bond. The efficient strategy has enabled a new palladium-catalyzed α -aminomethylation of nitrodienes and dienones via double C=N bond activation.

Pd-Catalyzed Ortho-Directed C-H Glycosylation of Arenes Using N-Linked Bidentate Auxiliaries

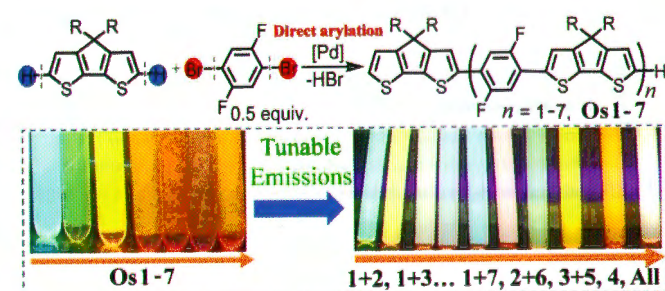
Quanquan Wang, Wanjun Zhu, Qikai Sun, Gang He,* and Gong Chen*

Chin. J. Chem. 2021, 39, 571–576. DOI: 10.1002/cjoc.202000500

One-Pot Synthesis of 3- to 15-Mer π -Conjugated Discrete Oligomers with Widely Tunable Optical Properties

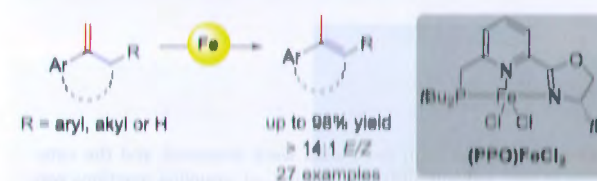
Hui Liu, Xiao-Feng Zhang, Li-Hong Wang, Yan Chen, Dong-Nai Ye, Long Chen, He-Rui Wen, and Shi-Yong Liu*

Chin. J. Chem. 2021, 39, 577–584. DOI: 10.1002/cjoc.202000457

A series of D₁-D₂ alternating monodisperse oligomers containing 3 to 15 monomers and with tunable photoluminescence property were synthesized via one-pot C-H direct arylation reaction.Iron Catalyzed Isomerization of α -Alkyl Styrenes to Access Trisubstituted Alkenes

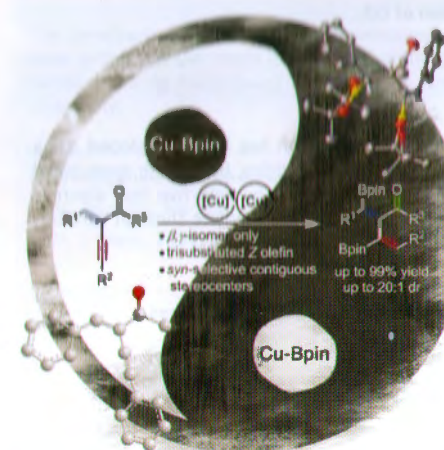
Songgen Xu, Guixia Liu,* and Zheng Huang*

Chin. J. Chem. 2021, 39, 585–589. DOI: 10.1002/cjoc.202000492

A well defined iron complex of phosphine-pyridine-oxazoline catalyzes stereoselective isomerization of α -alkyl styrenes, providing an atom-efficient and operational simple approach to trisubstituted alkenes in high yields with excellent regio- and stereoselectivities.Access to Stereodefined Multifunctionalized β,γ Unsaturated Ketones via Chemo-, Regio- and Diastereoselective Copper-Catalyzed Diborylation of Cross-Conjugated Enynones

Shuai Zhang, Xinhua Duan, and Pengfei Li*

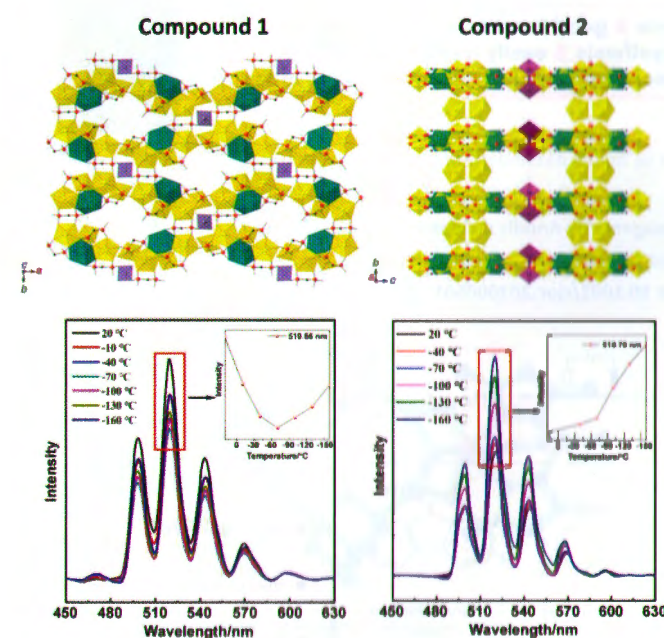
Chin. J. Chem. 2021, 39, 590–596. DOI: 10.1002/cjoc.202000475

A chemo-, regio- and stereoselective copper-catalyzed borylation of cross-conjugated enynones delivers β,β' -diboryl- β,γ -unsaturated ketones with both alkyl and alkenyl boronates bearing two adjacent stereogenic centers in a single step and rapidly increases molecular complexity. The diborylated compounds may have the potential in boron-selective transformations and natural product synthesis.

Uranyl Phosphonates with Multiple Uranyl Coordination Geometries and Low Temperature Phase Transition

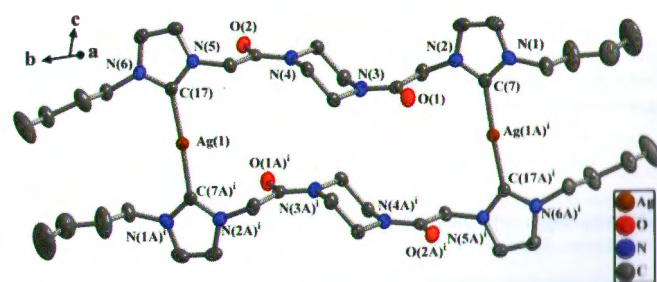
Lanhua Chen, Yugang Zhang, Zhehui Weng, Zhiyong Liu, Jiarong Zhang, Yaxing Wang, and Shuao Wang*

Chin. J. Chem. 2021, 39, 597–604. DOI: 10.1002/cjoc.202000510



Synthesis of *N*-Heterocyclic Carbene Silver(I) and Palladium(II) Complexes with Acylated Piperazine Linker and Catalytic Activity in Three Types of C—C Coupling Reactions

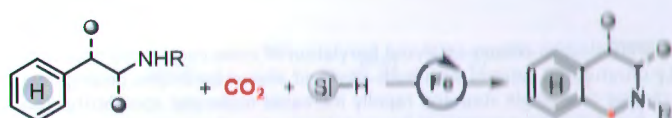
Qingxiang Liu,* Xiantao Zhang, Zhixiang Zhao, Xinying Li, and Wei Zhang
Chin. J. Chem. **2021**, *39*, 605–613. DOI: 10.1002/cjoc.202000237



NHC silver(I) and palladium(II) complexes were prepared, and the catalytic activity of NHC palladium(II) complex in C—C coupling reactions was investigated.

Fe-Catalyzed Pictet-Spengler-Type Cyclization via Selective Four-electron Reductive Functionalization of CO₂

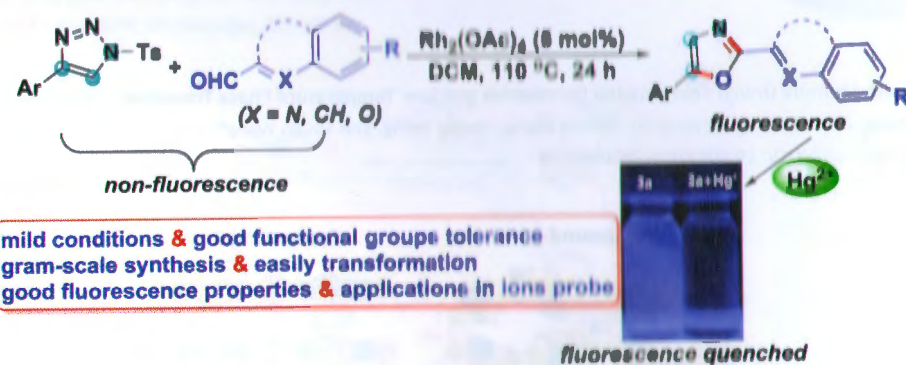
Wen-Duo Li, Jie Chen, Dao-Yong Zhu,* and Ji-Bao Xia*
Chin. J. Chem. **2021**, *39*, 614–620. DOI: 10.1002/cjoc.202000521



A catalytic Pictet-Spengler-type cyclization has been developed using CO₂ as a nontoxic and sustainable C1 building block with base-metal iron as catalyst. The reaction is achieved by selective four-electron reduction of CO₂ into methylene level intermediate through carefully tuning the reaction parameters.

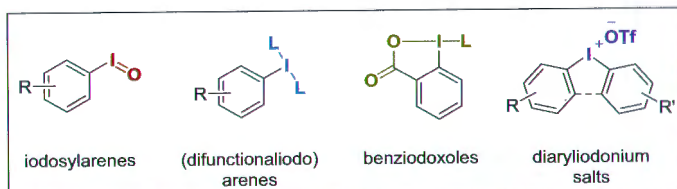
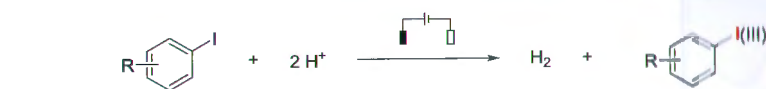
Rh-Catalyzed Formal [3+2] Cyclization for the Synthesis of 5-Aryl-2-(quinolin-2-yl)oxazoles and Its Applications in Metal Ions Probes

Tongtong Zhou, Xinwei He,* Youpeng Zuo, Yuhao Wu, Wangcheng Hu, Shilwen Zhong, Jiahui Duan, and Yongjia Shang*
Chin. J. Chem. **2021**, *39*, 621–626. DOI: 10.1002/cjoc.202000454



Synthesis of Diverse Aryliodine(III) Reagents by Anodic Oxidation

Bing Zu, Jie Ke, Yonghong Guo, and Chuan He*
Chin. J. Chem. **2021**, *39*, 627–632. DOI: 10.1002/cjoc.202000501

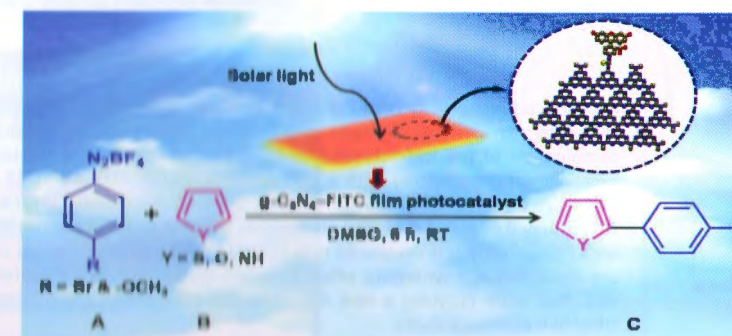


- high efficiency
- high selectivity
- mild conditions
- general applicability

An anodic oxidation enabled efficient synthesis of hypervalent iodine(III) reagents from aryl iodides is demonstrated. Under mild electrochemical conditions, a range of aryliodine(III) reagents including iodosylarenes, (difunctionaliodo)arenes, benziodoxoles and diaryliodonium salts can be efficiently synthesized and derivatized in good to excellent yields with high selectivity. As only electrons serve as the oxidation reagents, this method offers a more straightforward and sustainable manner avoiding the use of expensive or hazardous chemical oxidants.

Fabrication of Graphitic Carbon Nitride-Based Film: An Emerged Highly Efficient Catalyst for Direct C—H Arylation Under Solar Light

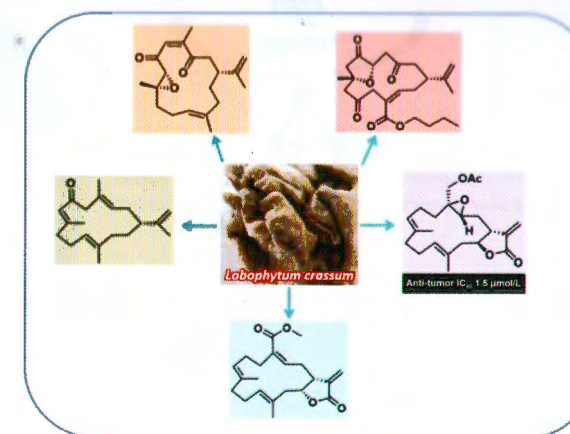
Surabhi Chaubey, Rajesh K. Yadav,* Tae Wu Kim,* Tara Chand Yadav, Abhishek Kumar, D. K. Dwivedi, B. K. Pandey, and Atul P. Singh
Chin. J. Chem. **2021**, *39*, 633–639. DOI: 10.1002/cjoc.202000470



The development of highly efficient, inexpensive and metal-free photocatalyst for direct C—H arylation is still a big challenge. The new findings give clear proof that the newly designed graphitic carbon nitride-based fluorescein isothiocyanate (*g*-C₃N₄-FITC) film photocatalyst opens a new path towards replacing metal-based photocatalyst. Novel *g*-C₃N₄-FITC film photocatalyst catalyzes the metal free direct C—H arylation with high yield and selectivity.

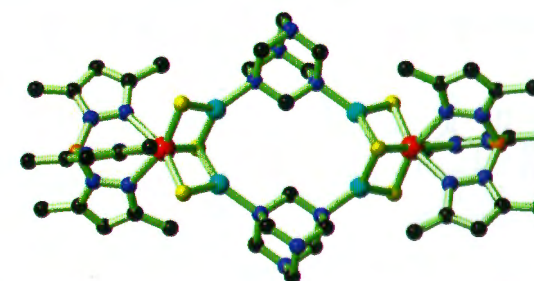
Polyoxygenated Cembranoids from the Soft Coral *Lobophytum crassum* and Their Anti-tumoral Activity

Fang-Zhou Yin, Xia-Juan Huan, I. Wayan Mudianta, Ze-Hong Miao, Hong Wang,* Yue-Wei Guo,* and Xu-Wen Li*
Chin. J. Chem. **2021**, *39*, 640–646. DOI: 10.1002/cjoc.202000539



Butterfly and Nest-Shaped Tp*W-Cu-S Cluster Monomers and Dimers with Hexamethylenetetramine as Ligand: Anion-Dependent Structures and Nonlinear Optical Properties

Quan Liu,* Mingjie Lu, Lice Yu, Yinglin Song, and Jianping Lang*
Chin. J. Chem. **2021**, *39*, 647–654. DOI: 10.1002/cjoc.202000497

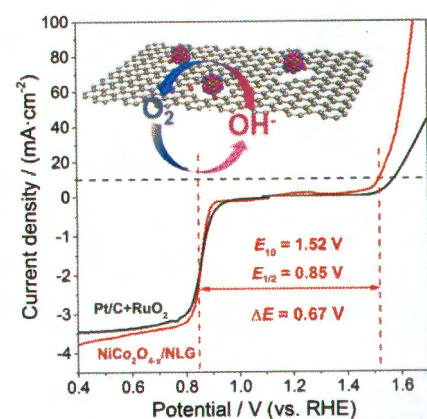


Neutral and charged [Tp*W₂Cu₂]_n-based monomers/dimers featuring hexamethylenetetramine (HMT) as a terminal or bridging ligand have been prepared and characterized to exhibit nonlinear optical responses.

An Active Hybrid Electrocatalyst with Synergized Pyridinic Nitrogen-Cobalt and Oxygen Vacancies for Bifunctional Oxygen Reduction and Evolution

Wen-Xin Zhong, Xue-Ru Zhao, Jia-Yi Qin, and Jing Yang*

Chin. J. Chem. 2021, 39, 655–660. DOI: 10.1002/cjoc.202000445

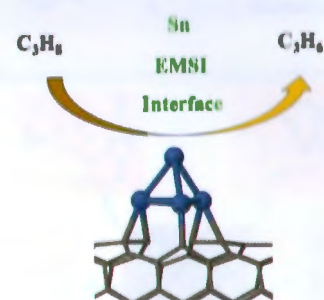


A hybrid bifunctional oxygen reduction reaction (ORR)/oxygen evolution reaction (OER) $\text{NiCo}_2\text{O}_{4-x}/\text{NLG}$ with rich pyridinic nitrogen-cobalt coordination and oxygen vacancies was synthesized via a combination of the hydrothermal method and pulsed laser irradiation. $\text{NiCo}_2\text{O}_{4-x}/\text{NLG}$ exhibits an excellent catalytic activity with a low overpotential of 290 mV at 10 mA cm^{-2} for OER and a high half-wave potential of 0.85 V for ORR. As a result, the overall ORR/OER overpotential of $\text{NiCo}_2\text{O}_{4-x}/\text{NLG}$ is only 0.67 V in 1.0 M KOH electrolyte, which is superior to commercial noble-metal-based catalysts (Pt/C+ RuO_2). It is evidenced that the enhanced intrinsic OER and ORR activities of $\text{NiCo}_2\text{O}_{4-x}/\text{NLG}$ are attributed to a synergistic effect between the pyridinic-N-Co coordination and the oxygen vacancies. This work provides a new design strategy for enhancing the intrinsic activity of bifunctional ORR/OER electrocatalysts.

Catalytic Property and Stability of Subnanometer Pt Cluster on Carbon Nanotube in Direct Propane Dehydrogenation

Xiaoying Sun, Jiahui Xue, Yu Ren, Xinyu Li, Lijing Zhou, Bo Li, and Zhen Zhao*

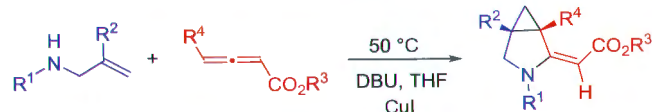
Chin. J. Chem. 2021, 39, 661–665. DOI: 10.1002/cjoc.202000415



Construction of 3-Azabicyclo[3.1.0]hexane Backbone by the Reaction of Allenes with Allylamines via Tandem Michael Addition and Copper-Mediated Oxidative Carbanion Cyclization

Hui Xu, Teng Han, Xiaoyan Luo,* and Wei-Ping Deng*

Chin. J. Chem. 2021, 39, 666–670. DOI: 10.1002/cjoc.202000405

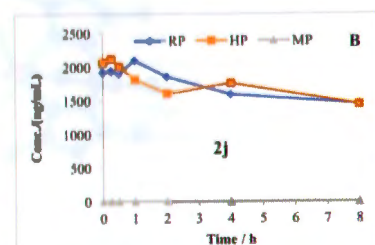
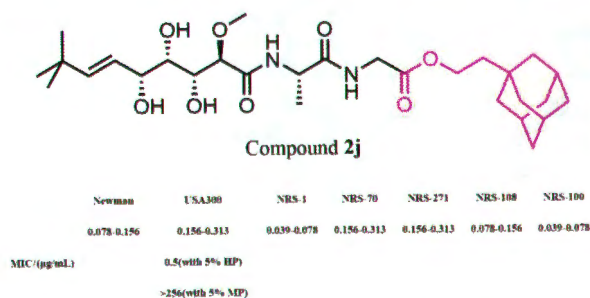


Michael addition and copper-mediated oxidative carbanion cyclization of allenes with allylamines was established, affording potential biologically active 3-azabicyclo[3.1.0]hexane derivatives in moderate to high yields.

Synthesis and Structure-Activity Relationships of Ring-Opened Bengamide Analogues against Methicillin-Resistant *Staphylococcus aureus*

Chen-Xi Yu, Bing-Yan Wei, Xue-Qing Kong, Cai-Guang Yang,* and Fa-Jun Nan*

Chin. J. Chem. 2021, 39, 671–676. DOI: 10.1002/cjoc.202000502



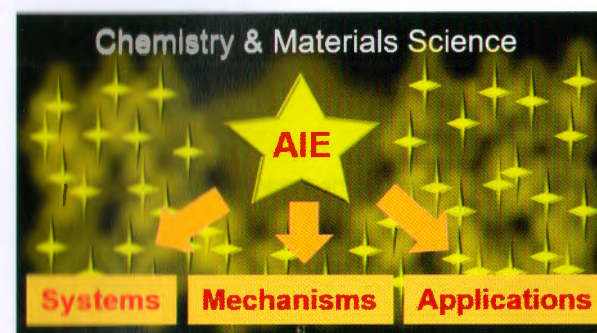
Stable in human plasma (HP)

Cornerstones in Chemistry

Aggregation-Induced Emission: A Rising Star in Chemistry and Materials Science

Ting Han, Dingyuan Yan, Qian Wu, Nan Song, Haoke Zhang, and Dong Wang*

Chin. J. Chem. 2021, 39, 677–689. DOI: 10.1002/cjoc.202000520



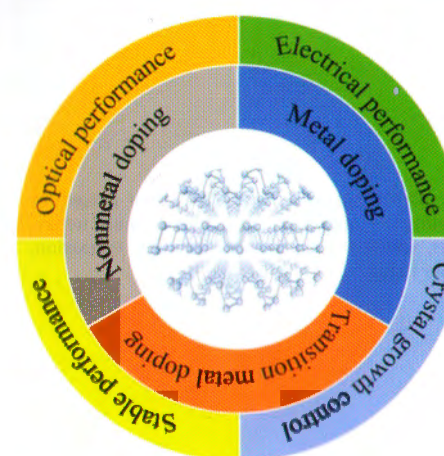
This review introduced the historical development and representative achievements in the field of aggregation-induced emission (AIE), including AIE systems, mechanism, and applications.

Recent Advances

Heteroatom-Doped Black Phosphorus and Its Application: A Review

Lu-dong He, Pei-chao Lian, Yuan-zhi Zhu,* Jun-ping Zhao, and Yi Mei*

Chin. J. Chem. 2021, 39, 690–700. DOI: 10.1002/cjoc.202000330

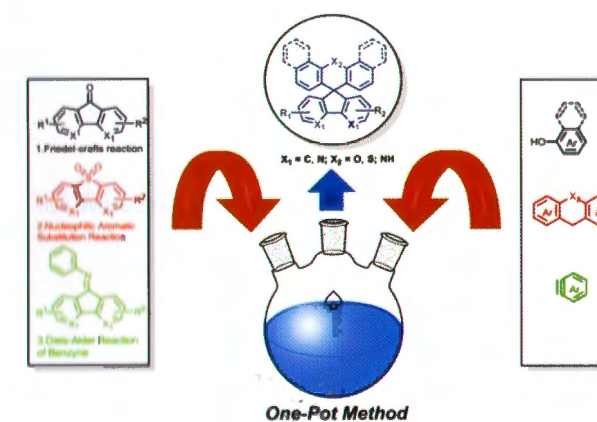


In this review, we summarize the preparation and application progress of heteroatom doped BP and look forward to the future challenges and opportunities.

One-Pot Synthesis of Spiro[fluorine-9,9'-xanthene] Derivatives

Hao-Xuan Yuan, Ying Wei,* Ling-Hai Xie,* and Wei Huang

Chin. J. Chem. 2021, 39, 701–709. DOI: 10.1002/cjoc.202000518



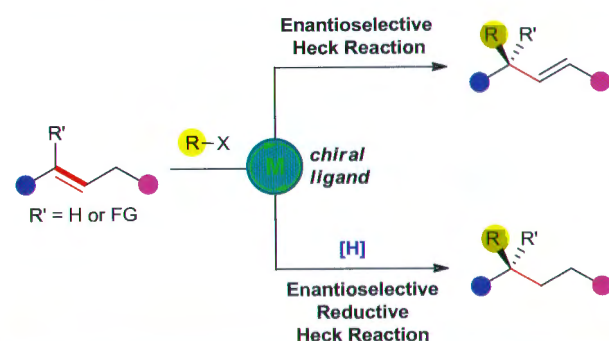
This review summarizes a variety of economic and environmentally friendly one-pot process to synthesize spiro[fluorine-9,9'-xanthene] derivatives (SFXs).

J&K Critical Review

Recent Advances of Catalytic Enantioselective Heck Reactions and Reductive-Heck Reactions

Jia-Qi Xie, Ren-Xiao Liang, and Yi-Xia Jia*

Chin. J. Chem. 2021, 39, 710–728. DOI: 10.1002/cjoc.202000464



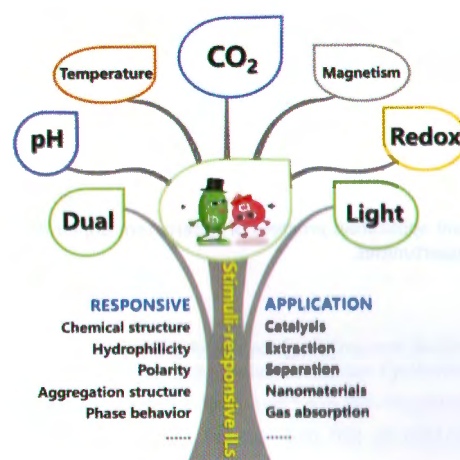
Recent progress of catalytic asymmetric Heck reactions and reductive Heck reactions since 2011 is described.

Critical Review

Stimuli-Responsive Ionic Liquids and the Regulation of Aggregation Structure and Phase Behavior

Xiao-Qing Yuan, Ya-Qin Zhang, Zhi-Yong Li, Feng Huo, Yi-Hui Dong, and Hong-Yan He*

Chin. J. Chem. 2021, 39, 729–744. DOI: 10.1002/cjoc.202000414

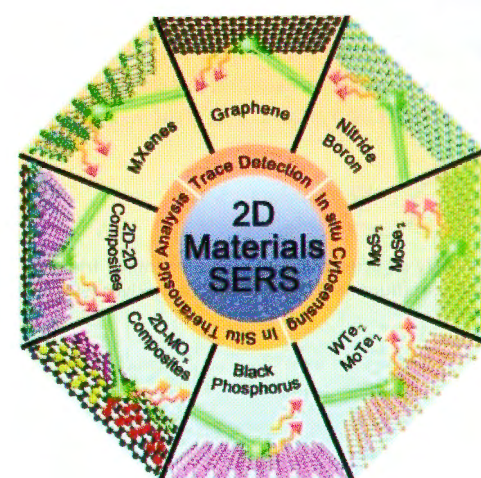


External stimuli can change the structure of stimuli-responsive ILs, and affect their properties such as hydrophilicity and polarity, further regulating the aggregation structure or phase behavior of stimuli-responsive ILs in related systems, which can be used in catalysis, extraction, separation, nanomaterial, gas absorption and other fields.

Surface-enhanced Raman Scattering on 2D Nanomaterials: Recent Developments and Applications

Tingting Zheng, * Yan Zhou, Enduo Feng, and Yang Tian*

Chin. J. Chem. 2021, 39, 745–756. DOI: 10.1002/cjoc.202000451

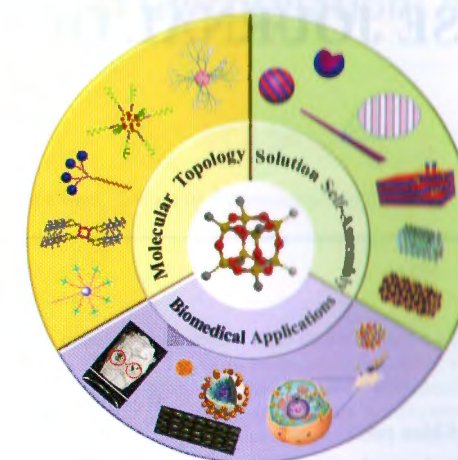


In this review, we highlighted and summarized the recent advances in 2D SERS-active substrates, mechanisms and applications.

Polyhedral Oligomeric Silsesquioxanes (POSS)-Based Hybrid Materials: Molecular Design, Solution Self-Assembly and Biomedical Applications

Linfeng Fan, Xing Wang,* and Decheng Wu*

Chin. J. Chem. 2021, 39, 757–774. DOI: 10.1002/cjoc.202000536



Corrigendum (page 775)

Meeting Our New Associate Editor (page 776)