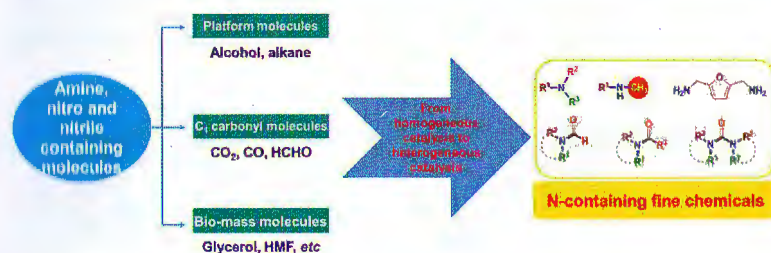


Chemistry Authors Up Close

Towards Economic and Sustainable Amination with Green and Renewable Feedstocks

Hongli Wang and Feng Shi*

Chin. J. Chem. **2021**, *39*, 1051–1069. DOI: 10.1002/cjoc.202000505

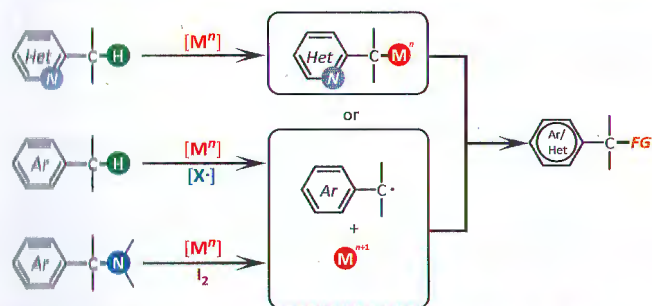


This account describes our results in the clean and economic synthesis of N-substituted amines with amine, ammonia, nitrobenzene or nitrile as nitrogen sources and alcohol, alkane or CO₂, HCHO, CO, and biomass resources as alkylation or formylation reagents.

Catalytic Benzylation Reactions: From C–H Bond Activation to C–N Bond Activation

Tianxiao Jiang, Hongchi Liu, Haocheng Zhang, and Hanmin Huang*

Chin. J. Chem. **2021**, *39*, 1070–1078. DOI: 10.1002/cjoc.202000567



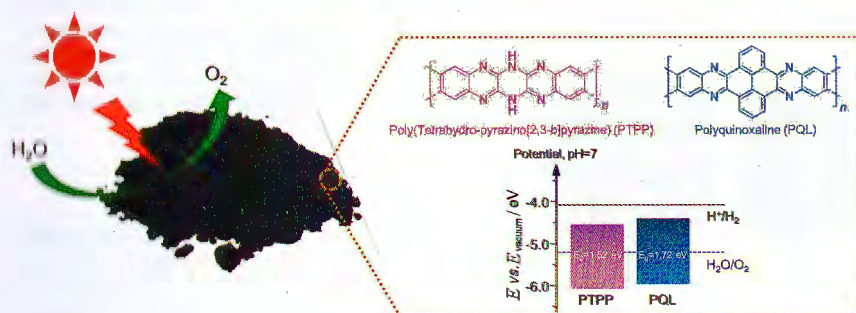
Transition-metal-catalyzed benzylic C–H and C–N bond activation provides efficient strategies for the generation of reactive benzyl-containing species from simple alkylarene and benzylamine substrates, which pave the way for a wide range of novel catalytic benzylation reactions.

Concise Reports

Fully Conjugated Ladder Polymers as Metal-Free Photocatalysts for Visible-Light-Driven Water Oxidation

Xiaoyu Ma, Hailun Wang, Jun Cheng, Hao Cheng, Lei Wang,* Xiaojun Wu,* and Hangxun Xu*

Chin. J. Chem. **2021**, *39*, 1079–1084. DOI: 10.1002/cjoc.202000614

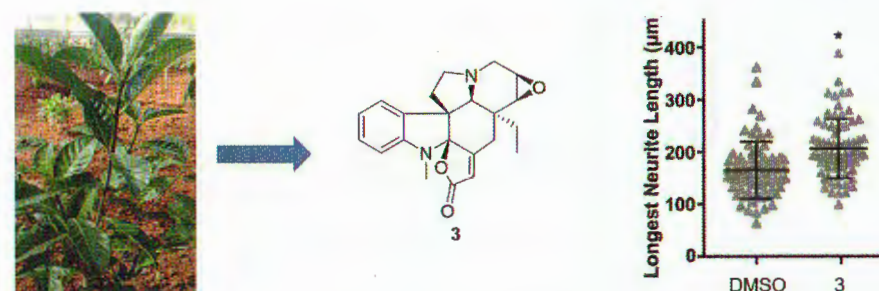


Two fully conjugated ladder polymers with suitable band structures are developed for visible-light-driven water oxidation. Our study highlights the potential of utilizing conjugated ladder polymers for various photocatalytic applications considering that their chemical and electronic properties can be rationally designed from the molecular level.

Monoterpenoid Indole Alkaloids with Promoting Neurite Growth from *Tabernaemontana divaricata*

Yan Deng, Yang Yu, Bao-Bao Shi, Mei-Fen Bao, Si-Meng Zhao, and Xiang-Hai Cai*

Chin. J. Chem. 2021, 39, 1085–1092. DOI: 10.1002/cjoc.202000656

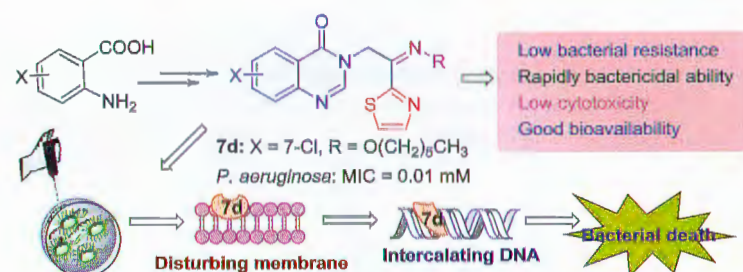


Phytochemical investigations on *Tabernaemontana divaricata* led to the isolation of seven undescribed monoterpenoid indole alkaloids, taberdicatinones A–G (1–7). Taberdicatinones A–C might be derived from *Aspidosperma*-type alkaloid with less carbons in 1–2 and an additional carbon in 3. Taberdicatinones D–E (4–5) were attributed to *iboga* alkaloids with enantiomeric skeleton. Alkaloid 3 could promote the neurite growth of mouse primary cortical neurons at the concentration of 5 μmol/L.

Synthesis and Biological Evaluation of Quinazolinethiazoles as New Potential Conquerors towards *Pseudomonas Aeruginosa*

Jie Wang, Narsaiah Battini, Mohammad Fawad Ansari, and Cheng-He Zhou*

Chin. J. Chem. 2021, 39, 1093–1103. DOI: 10.1002/cjoc.202000627

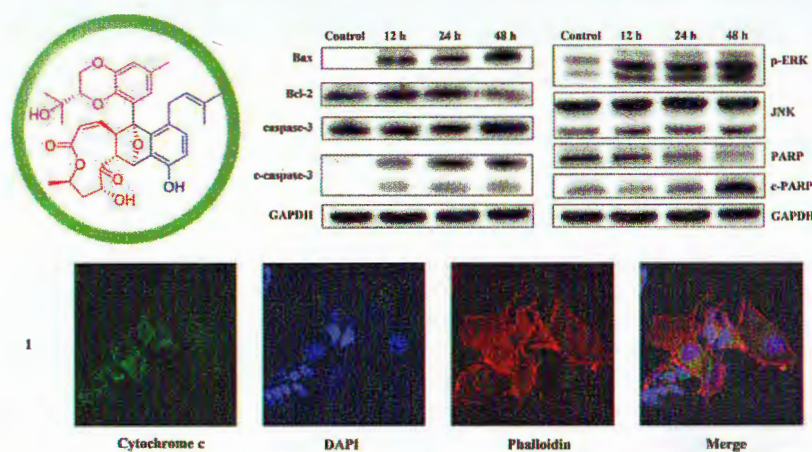


A novel class of potential antimicrobial quinazolinethiazoles were developed by multistep synthetic process and their biological evaluation suggested that quinazolinethiazoles could provide the meritorious groundwork of future studies as new antimicrobial agents in fighting pathogenic organism.

Lithocarpins E–G, Potent Anti-Tumor Tenellone-Macrolides from the Deep-sea Fungus *Phomopsis lithocarpus* FS508

Jianlin Xu, Yuchan Chen, Zhaoming Liu, Saini Li, Yong Wang, Yuhong Ren, and Hongxin Liu,* and Weimin Zhang*

Chin. J. Chem. 2021, 39, 1104–1112. DOI: 10.1002/cjoc.202000621

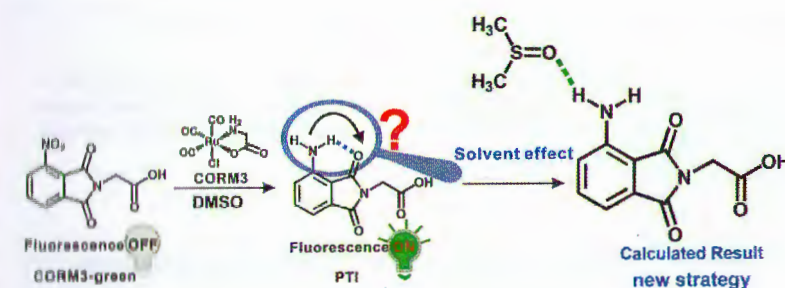


Three new tenellone-macrolide conjugated dimers lithocarpins E–G (1–3), featuring a fascinating 9,14-epoxynaphtho[2,3-*e*]oxecin-3(2*H*)-one skeleton, were isolated. Moreover, lithocarpin E showed an inhibitory effect against HepG2 cells with an IC₅₀ value of 6.3 μmol/L, which induced the apoptosis of HepG2 cells by the up-regulation of apoptotic markers p-ERK, Bax, and caspase-3.

Sensing Mechanism of Excited-State Intermolecular Hydrogen Bond for Phthalimide: Indispensable Role of Dimethyl Sulfoxide

Dongdong Wang, Tianxin Bai, Xue Wang, Yuting Xiong, Yahui Zhang, Zhenqiang Shi, Fusheng Zhang, Wenqi Lu, and Guangyan Qing*

Chin. J. Chem. 2021, 39, 1113–1120. DOI: 10.1002/cjoc.202000604

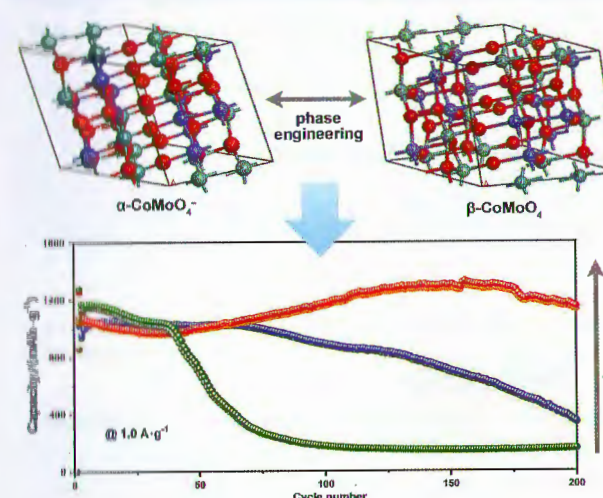


Possible fluorescent mechanisms for the PTI reduced from CORM3-green, the upper panel shows the mechanism raised by the original literature, the lower panel shows our finding from theoretical calculation, which illustrates an indispensable role of DMSO.

Phase Engineering of CoMoO₄ Anode Materials toward Improved Cycle Life for Li⁺ Storage

Xiaoqing Huang, Junhao Li, Wenbiao Zhang, Wenjie Huang, Lichun Yang,* and Qingsheng Gao*

Chin. J. Chem. 2021, 39, 1121–1128. DOI: 10.1002/cjoc.202000646

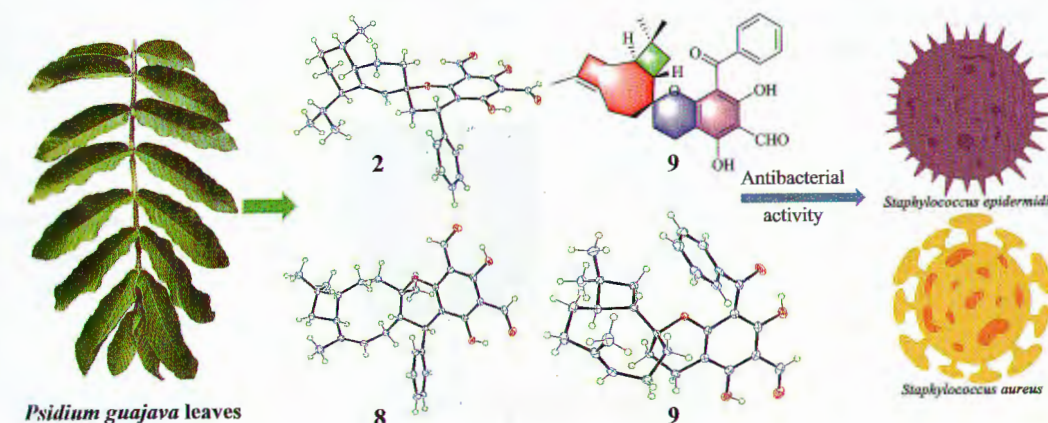


Phase-engineering on heterogeneous α/β-CoMoO₄ nanorods was successfully introduced to improve the cycle life and rate performance as anode materials for Li-ion batteries.

Guajamers A–I, Rearranged Polycyclic Phloroglucinol Meroterpenoids from *Psidium guajava* Leaves and Their Antibacterial Activity

Ji-Wu Huang, Chuang-Jun Li, Jing-Zhi Yang, Chuan Li, Yu Zhang, Ke Liu, Yue Yu, Jian-Dong Jiang, and Dong-Ming Zhang*

Chin. J. Chem. 2021, 39, 1129–1137. DOI: 10.1002/cjoc.202000640

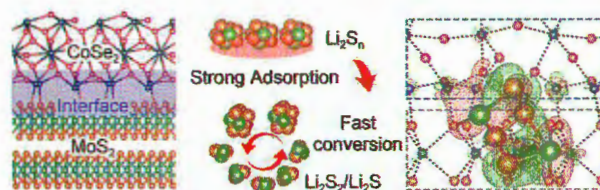


Eleven polycyclic phloroglucinol meroterpenoids (1–11), including nine new ones guajamers A–I (1–9), were isolated from the leaves of *Psidium guajava*. Compound 9 was the first case of 3-alkyl-5-formyl-benzoylphloroglucinol-coupled sesquiterpene containing an unusual C-1-spiro-fused 6/6/6/4 polycyclic skeleton. Most of them (2–7, 10, and 11) showed antibacterial activity against *Staphylococcus aureus* and *Staphylococcus epidermidis* with MIC values of 8–32 μM.

CoSe₂/MoS₂ Heterostructures to Couple Polysulfide Adsorption and Catalysis in Lithium-Sulfur Batteries

Zihan Shen, Qingwen Zhou, Huiling Yu, Jiaming Tian, Man Shi, Chaoquan Hu,* and Huigang Zhang*

Chin. J. Chem. 2021, 39, 1138–1144. DOI: 10.1002/cjoc.202000661

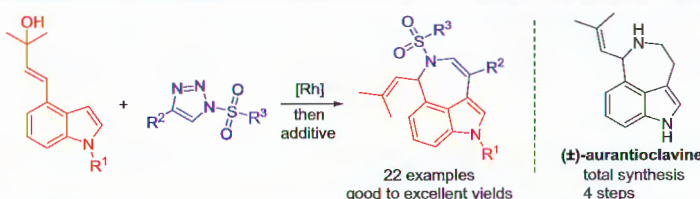


CoSe₂/MoS₂ heterostructures couple the strong polysulfide adsorption of CoSe₂ and high catalytic activity of MoS₂ to synergistically accelerate polysulfide conversion, demonstrating higher catalytic activity than their individual components.

Rhodium(II)-Catalyzed [4+3] Cyclization of Triazoles with Indole Derivatives and Its Application in the Total Synthesis of (±)-Aurantiochlorine

Shengguo Duan, Bing Xue, Hui Meng, Zihang Ye, Ze-Feng Xu, and Chuan-Ying Li*

Chin. J. Chem. 2021, 39, 1145–1152. DOI: 10.1002/cjoc.202000657

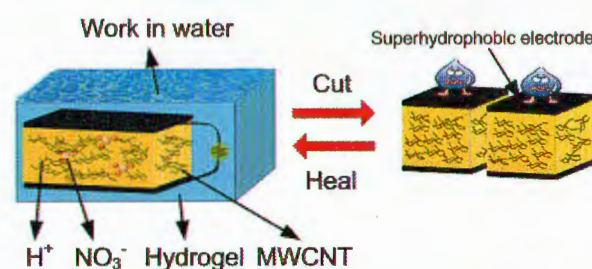


An efficient rhodium(II)-catalyzed [4+3] cyclization reaction of 1-sulfonyl-1,2,3-triazoles and indoles was developed. In addition, the total synthesis of (±)-aurantiochlorine was completed in four steps adopting this [4+3] cyclization as a key step.

Superhydrophobic Flexible Supercapacitors Formed by Integrating Hydrogel with Functional Carbon Nanomaterials

Peng Wang,* Ximin Zhang, Wei Duan, Wei Teng, Yibing Liu, and Qing Xie*

Chin. J. Chem. 2021, 39, 1153–1158. DOI: 10.1002/cjoc.202000543

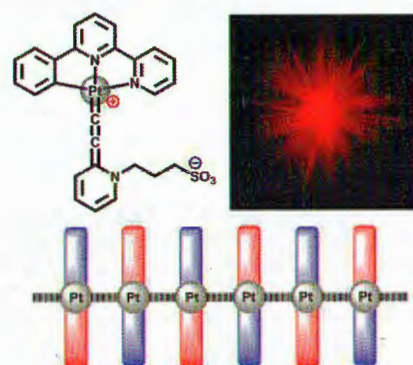


This paper reports a superhydrophobic and self-healable supercapacitor, which could work in the underwater environment.

Phosphorescent Zwitterionic Pt(II) N-Heterocyclic Allenylidene Complexes: Metallophilicity and Ionic Self-Assembly

Qin Gao, Fei Peng, Chuanfei Wang, Jinqiang Lin, Xiaoyong Chang, Chao Zou,* and Wei Lu*

Chin. J. Chem. 2021, 39, 1159–1167. DOI: 10.1002/cjoc.202000674

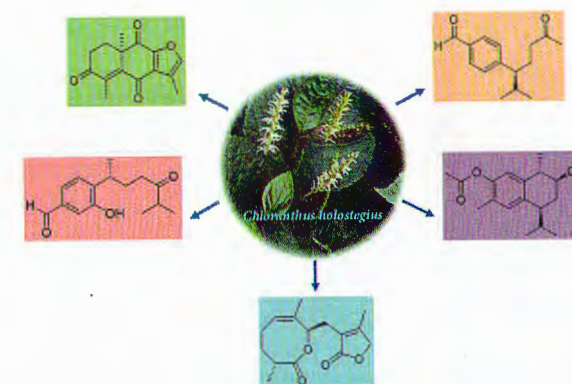


Zwitterionic self-assembly of N-heterocyclic allenylidene Pt(II) complexes with metallophilic Pt...Pt interactions shifts phosphorescence from yellow to red and then to near-infrared region.

Sesquiterpenoids from the Whole Plants of *Chloranthus holostegius* and Their Anti-inflammatory Activities

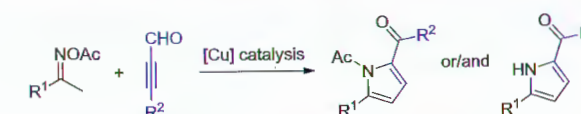
Zhao-Chun Zhan, Zhong-Nan Wu, Qing Tang, Can-Jie Li, Wen-Zhi Wang, Ji-Hui Zhang, Xue-Fang Zhuo, Yu-Bo Zhang,* Guo-Cai Wang,* and Yao-Lan Li*

Chin. J. Chem. 2021, 39, 1168–1174. DOI: 10.1002/cjoc.202000625

**Cu-Catalyzed Cascade Cyclization of Ketoxime Acetates and Alkynals Enabling Synthesis of Acylpyrroles**

Zhenhua Xu, Ning Xian, Hongbiao Chen, Guo-Jun Deng, and Huawen Huang*

Chin. J. Chem. 2021, 39, 1175–1180. DOI: 10.1002/cjoc.202000660

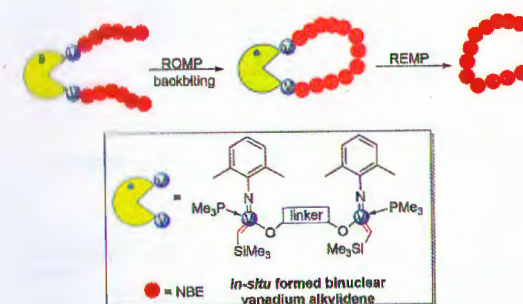


A Cu-catalyzed cascade cyclization reaction of ketoxime acetates and alkynals has been developed that enables synthesis of two kinds of structurally important 2-acylpyrroles.

Synthesis of Cyclic Polyolefin: Ring-Opening Metathesis Polymerization by Binuclear Vanadium Complexes

Xiaohua Hou,* Xiaojian Chen, Xiang Gao, Lei Xu, Hui Zou, Li Zhou, and Zong-Quan Wu*

Chin. J. Chem. 2021, 39, 1181–1187. DOI: 10.1002/cjoc.202000636

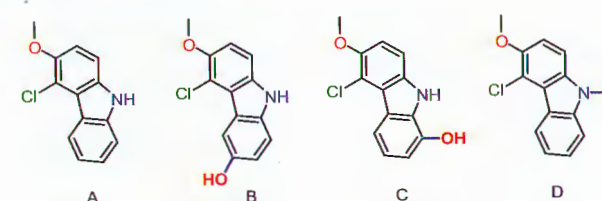


Binuclear vanadium complexes were designed and exhibited high activity in ring-opening metathesis polymerization of norbornene. Cyclic polymers were obtained and demonstrated.

Antimicrobial Chlorinated Carbazole Alkaloids from the Sponge-Associated Actinomycete *Streptomyces diacarni* LHW51701

Yijia Cheng, Nannan Chen, Jing Li, Jun-Cheng Su, Jingya Yang, Cui-Xian Zhang,* Hou-Wen Lin,* and Yongjun Zhou*

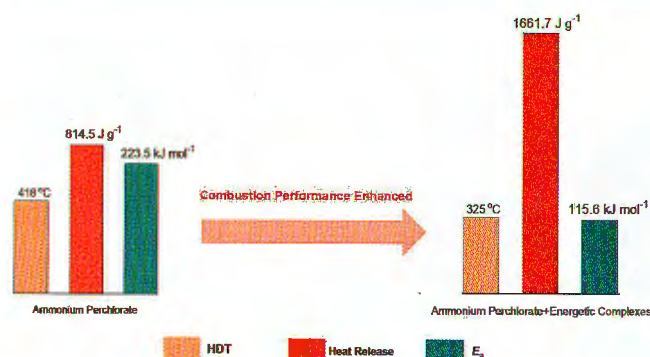
Chin. J. Chem. 2021, 39, 1188–1192. DOI: 10.1002/cjoc.202000736

Chlorocarbazomycins isolated from *Streptomyces diacarni* LHW51701.

New Energetic Complexes as Catalysts for Ammonium Perchlorate Thermal Decomposition

Guorong Lei, Ye Zhong, Yiqiang Xu, Fan Yang, Jiandong Bai, Zhimin Li,* Jianguo Zhang, and Tonglai Zhang*

Chin. J. Chem. **2021**, *39*, 1193–1198. DOI: 10.1002/cjoc.202000672

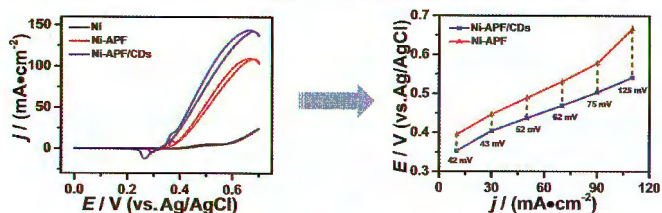


Four new energetic complexes (1) $[\text{Cu}(\text{vimi})_4]\text{DCA}_2$, (2) $[\text{Co}(\text{vimi})_4]\text{DCA}_2$, (3) $[\text{Ni}(\text{vimi})_4]\text{DCA}_2$, and (4) $[\text{Cu}(\text{vimi})_4]\text{CBH}_2$ (vimi: 1-vinylimidazole, DCA: dicyanamide anion, CBH: cyanoborohydride anion) were prepared, and their structures were characterized *via* single-crystal X-ray diffraction, elemental analysis, and Fourier-transform infrared spectroscopy.

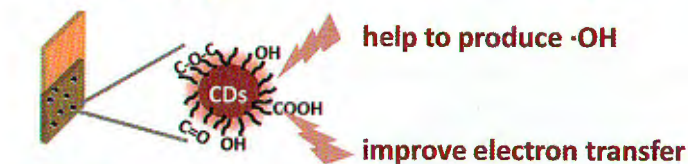
Carbon Dots Promote the Performance of Anodized Nickel Passivation Film on Ethanol Oxidation by Enhancing Oxidation of the Intermediate

Yandi Shi, Fan Liao,* Wenxiang Zhu, Huixian Shi, Kui Yin, and Mingwang Shao*

Chin. J. Chem. **2021**, *39*, 1199–1204. DOI: 10.1002/cjoc.202000665



A layer of dense anodized nickel passivation film (Ni-APF) was formed on the surface of nickel sheet by anodic oxidation method, with carbon dots (CDs) as co-catalyst. Ni-APF/CDs showed 144.4 mA·cm⁻² peak current density at peak potential 0.662 V (vs. Ag/AgCl), which was 31% higher than that of Ni-APF (110.3 mA·cm⁻²). In this system, CDs mainly function in the increase of charge-transfer capacity and the promotion oxidation of carbonaceous intermediates.

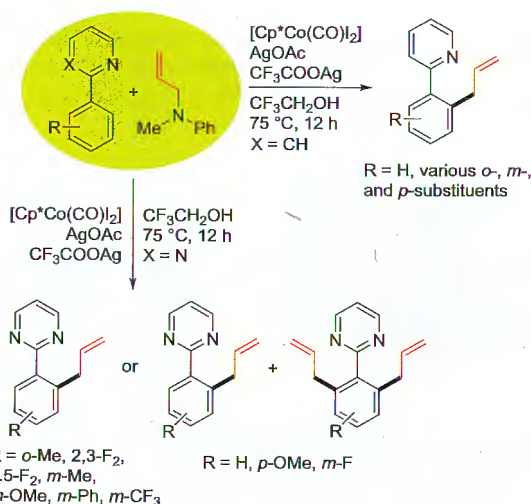


Ni-APF/CDs

Cobalt-Catalyzed C—H Alkylation of Arenes with Allylic Amines

Rui Yan, Hang Yu, and Zhong-Xia Wang*

Chin. J. Chem. **2021**, *39*, 1205–1210. DOI: 10.1002/cjoc.202000680

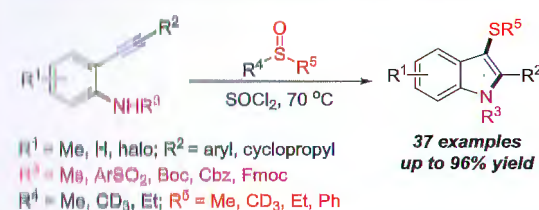


[Cp*Co(CO)I₂]-catalyzed pyridyl- and pyrimidyl-directed C—H allylation of arenes with allylic amines was performed, affording *ortho*-allylated arenes in moderate to high yields.

Synthesis of 3-Methylthioindoles via Intramolecular Cyclization of 2-Alkynylanilines Mediated by DMSO/DMSO- d_6 and SOCl_2

Xuemin Li, Beibei Zhang, Jinran Zhang, Xi Wang, Dongke Zhang, Yunfei Du,* and Kang Zhao*

Chin. J. Chem. 2021, 39, 1211–1224. DOI: 10.1002/cjoc.202000701

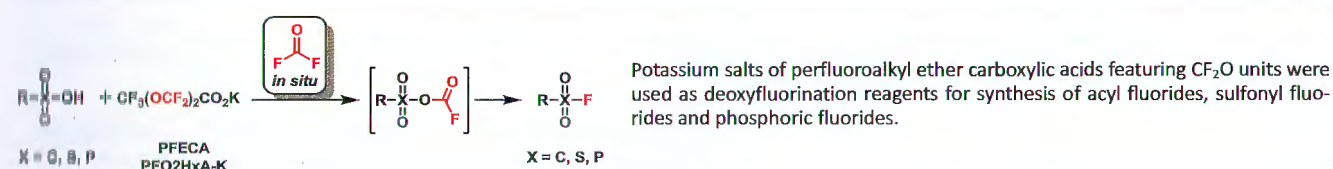


A variety of 3-methylthioindole and deuterated 3-methylthioindole derivatives were conveniently synthesized from the reaction of 2-alkynylanilines with DMSO/DMSO- d_6 and SOCl_2 via intramolecular cyclization/methylthiolation. Advantages of this method include the metal-free feature, readily availability of the substrates, mild reaction conditions, and synthesis of the deuterated 3-methylthioindoles.

Deoxyfluorination of Carboxylic, Sulfonic, Phosphinic Acids and Phosphine Oxides by Perfluoroalkyl Ether Carboxylic Acids Featuring CF₂O Units

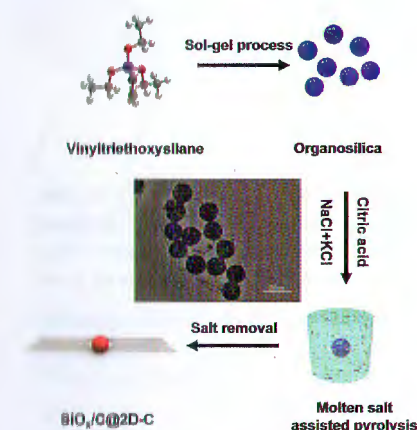
Shi-Yu Zhao, Yong Guo,* Zhaoben Su, Chengying Wu, Wei Chen, and Qing-Yun Chen*

Chin. J. Chem. **2021**, *39*, 1225–1232. DOI: 10.1002/cjoc.202000662

Molten Salt Derived Graphene-Like Carbon Nanosheets Wrapped SiO_x/Carbon Submicrospheres with Enhanced Lithium Storage

Qianliang Zhang, Suping Han, Fang Tian, Zhenyu Feng, Baojuan Xi, Shenglin Xiong,* and Yitai Qian

Chin. J. Chem. 2021, 39, 1233–1239. DOI: 10.1002/cjoc.202000647

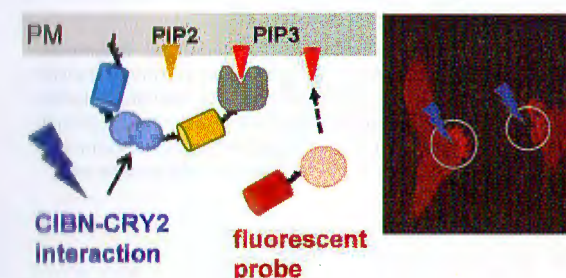


We have developed an inexpensive and scalable route to fabricate graphene-like carbon nanosheet wrapped SiO_x/C submi-crospheres. The *in-situ* generated carbon nanosheets under molten salt condition can further improve the electroconductivity, re-strain the volumetric expansion and guarantee the structural integrity of the electrode.

Optogenetic Control of Phosphatidylinositol (3,4,5)-Triphosphate Production by Light-sensitive Cryptochrome Proteins on the Plasma Membrane

Linzi Yang, Takeaki Ozawa,* Haifeng Dong,* and Xueji Zhang*

Chin. J. Chem., **2021**, *39*, 1240–1246. DOI: 10.1002/cjoc.202000648

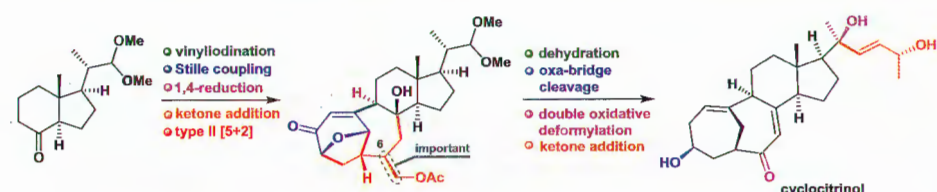


We design an optogenetic system that uses light sensitive protein-protein interaction between Arabidopsis cryptochrome 2 (CRY2) and CIB1 to spatiotemporally visualize the PIP3 production with high specificity.

Evolution of Routes for Asymmetric Total Synthesis of Cyclocitrinol Enabled by Type II [5+2] Cycloaddition

Jianlei Wu, Junyang Liu,* Jian-Hong Fan, Zhi-Dong Xie, Hukun Qin, and Chuang-Chuang Li*

Chin. J. Chem. 2021, 39, 1247–1254. DOI: 10.1002/cjoc.202000698

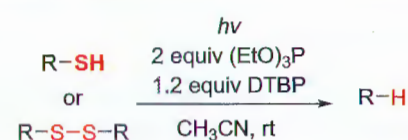


This manuscript reports the full detail of the asymmetric total synthesis of cyclocitrinol, an unusual C25 steroid with a unique bicyclo[4.4.1]undecene A/B ring system. Our initial synthetic studies to construct the desired bicyclo[4.4.1]undecene ring via type II [5+2] cycloaddition revealed that a chiral substituent at the allylic position of the alkene (C6) would control the stereoselective outcome of the cycloaddition reaction. Elaboration of the cycloadduct, involving dehydration of the tertiary alcohol, lithium-amine promoted oxa-bridge cleavage, double oxidative deformylation and selective side chain introduction finished the synthesis of cyclocitrinol.

A Mild, General, Metal-Free Method for Desulfurization of Thiols and Disulfides Induced by Visible-Light

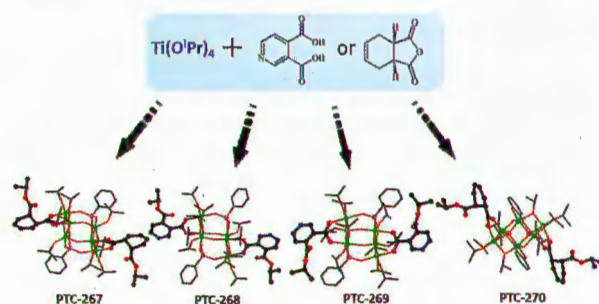
Wenting Qiu, Shuai Shi, Ruining Li, Xianfeng Lin, Liangming Rao, and Zhankui Sun*

Chin. J. Chem. 2021, 39, 1255–1258. DOI: 10.1002/cjoc.202000607

Synthesis and Structure of a Series of Ti6-oxo Clusters Functionalized by *in situ* Esterified Dicarboxylate Ligands

Mei-Yan Gao, Yayong Sun, Fei Wang, Jian Zhang, and Lei Zhang*

Chin. J. Chem. 2021, 39, 1259–1264. DOI: 10.1002/cjoc.202000664

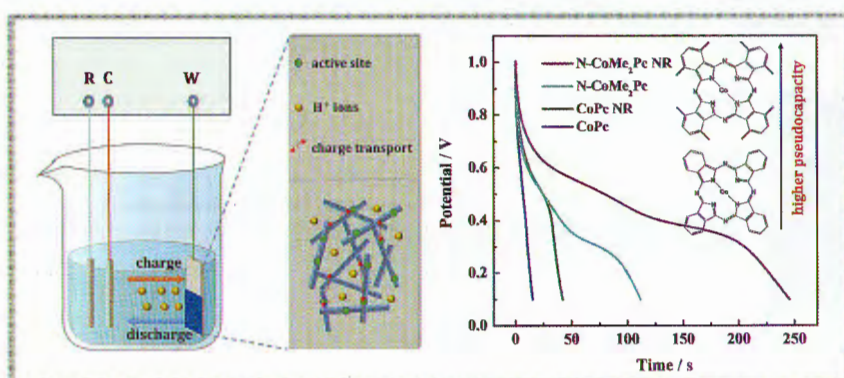


This work reveals a novel series of titanium-oxo clusters, PTC-267, PTC-268, PTC-269 and PTC-270, formed from *in situ* esterified ligands. These complexes offer rare examples of dicarboxylate-modified polyoxo-titanium clusters (PTCs) with ester groups and provide evidence for the production of water by an *in situ* esterification reaction.

Boosting the Capacitive Performance of Cobalt(II) Phthalocyanine by Non-peripheral Octamethyl Substitution for Supercapacitors

Minzhang Li, Rajendran Ramachandran, Yu Wang, Qian Chen, and Zong-Xiang Xu*

Chin. J. Chem. 2021, 39, 1265–1272. DOI: 10.1002/cjoc.202000676

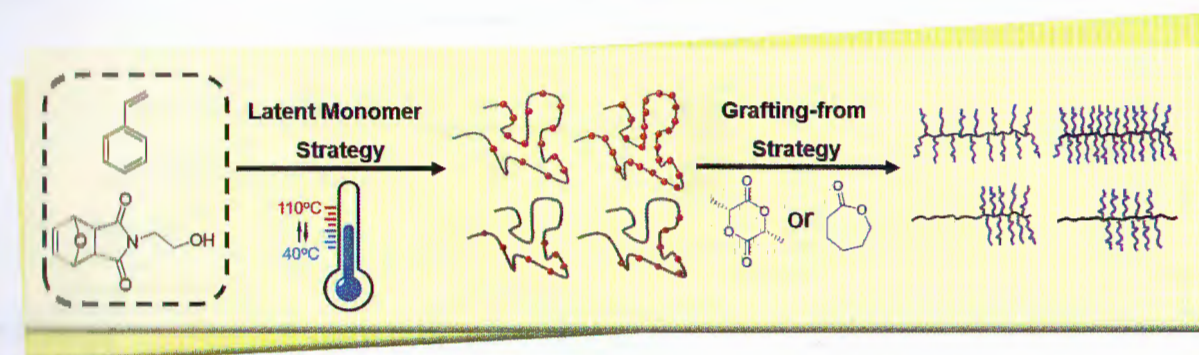


The introduction of non-peripheral octamethyl substituents on CoPc can enhance charge transfer rate and improve redox activity, resulting in better pseudocapacity. The capacitance value of phthalocyanine nanorods is further improved compared with powders due to larger specific surface area.

Bridging from the Sequence to Architecture: Graft Copolymers Engineering via Successive Latent Monomer and Grafting-from Strategies

Yajie Zhang, Xiaohuan Cao, Yang Gao, Yujie Xie, Zhihao Huang,* Zhengbiao Zhang,* and Xiulin Zhu

Chin. J. Chem. 2021, 39, 1273–1280. DOI: 10.1002/cjoc.202000643

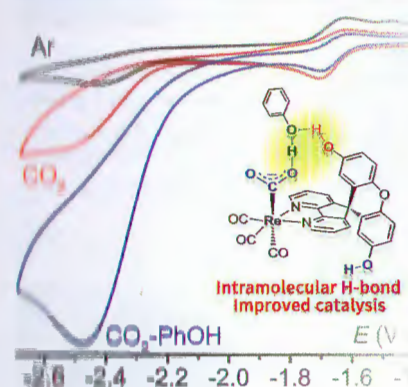


An efficient method toward the constructions of well-defined grafting copolymer, bridging sequence with architecture by successive latent monomer and grafting from strategies, was demonstrated.

Electrocatalysis CO₂ Reduction with Re-Based Spiro Bipyridine Complexes: Effects of the Local Proton in the Second Coordination Sphere

Yong Yang, Ziyun Zhang, Zhenyu Zhang, Chao Tang, Xiaoyong Chang, and Lele Duan*

Chin. J. Chem. 2021, 39, 1281–1287. DOI: 10.1002/cjoc.202000667



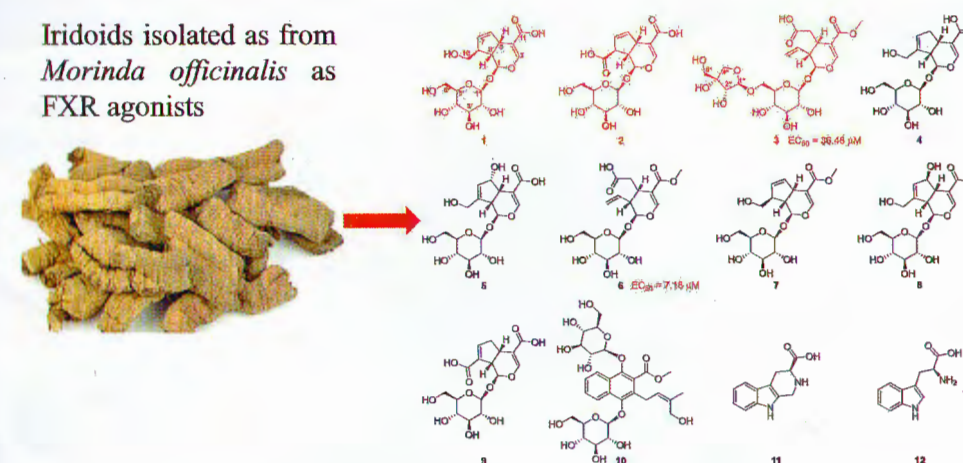
The OH group in the second coordination sphere improves the formation of a local hydrogen bond that promotes the protonation of CO₂ reduction intermediates, boosting the electrocatalytic CO₂ reduction properties of complex Re1.

Discovery of New Iridoids as Farnesoid X Receptor Agonists from *Morinda officinalis*: Agonistic Potentials and Molecular Stimulation

Zhi-Lin Luan, Fei Qiao, Wen-Yu Zhao, Wen-Hua Ming, Zhen-Long Yu, Jie Liu, Sheng-Yun Dai, Shuang-Hui Jiang, Chao-Jie Lian, Cheng-Peng Sun,* Bao-Jing Zhang, Jian Zheng,* Shuang-Cheng Ma,* and Xiao-Chi Ma

Chin. J. Chem. 2021, 39, 1288–1296. DOI: 10.1002/cjoc.202000654

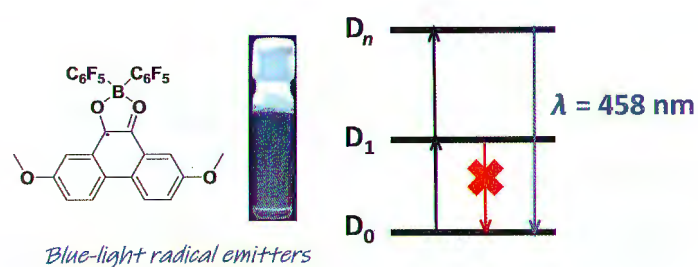
Iridoids isolated as from *Morinda officinalis* as FXR agonists



Stable Boron-Containing Blue-Photoluminescent Radicals

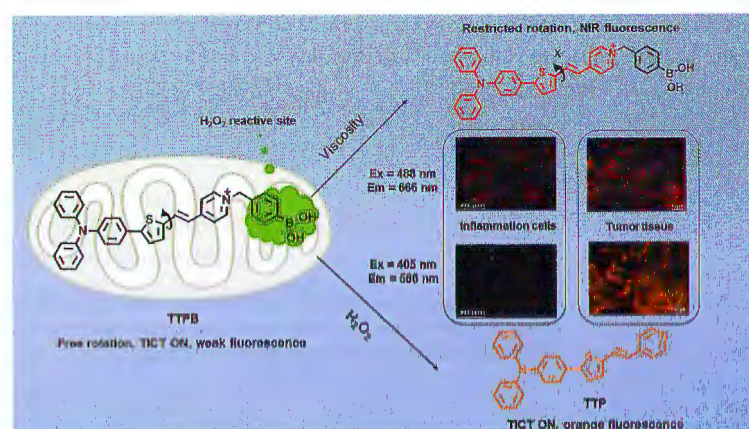
Zhongtao Feng, Yuanyuan Chong, Shuxuan Tang, Huapeng Ruan, Yong Fang, Yue Zhao, Jun Jiang,* and Xinping Wang*

Chin. J. Chem. 2021, 39, 1297–1302. DOI: 10.1002/cjoc.202100188

A Mitochondria-Specific Orange/Near-Infrared-Emissive Fluorescent Probe for Dual-Imaging of Viscosity and H_2O_2 in Inflammation and Tumor Models

Li Fan,* Qi Zan, Xiaodong Wang, Shuohang Wang, Yuewei Zhang,* Wenjuan Dong, Shaomin Shuang, and Chuan Dong*

Chin. J. Chem. 2021, 39, 1303–1309. DOI: 10.1002/cjoc.202000725



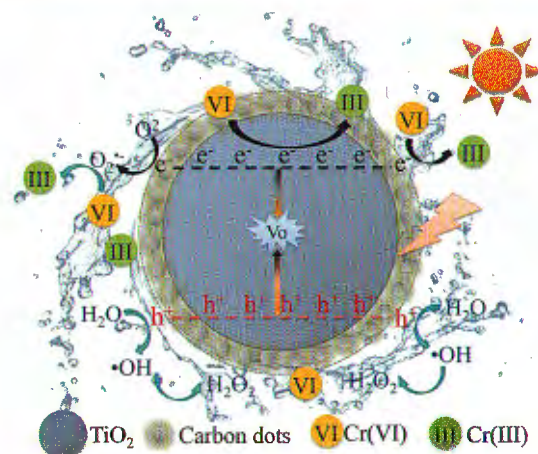
We reported an orange/near-infrared-emissive fluorescent probe (TTPB) for dual-imaging of mitochondrial viscosity and H_2O_2 in inflammation and cancer models.

Comprehensive Reports

Facile Construction of Carbon Dots Layer and Oxygen Vacancies Simultaneously onto TiO_2 to Enhance Photoreduction Activity

Jingyu Zhao, Yaru Li, and Ping Na*

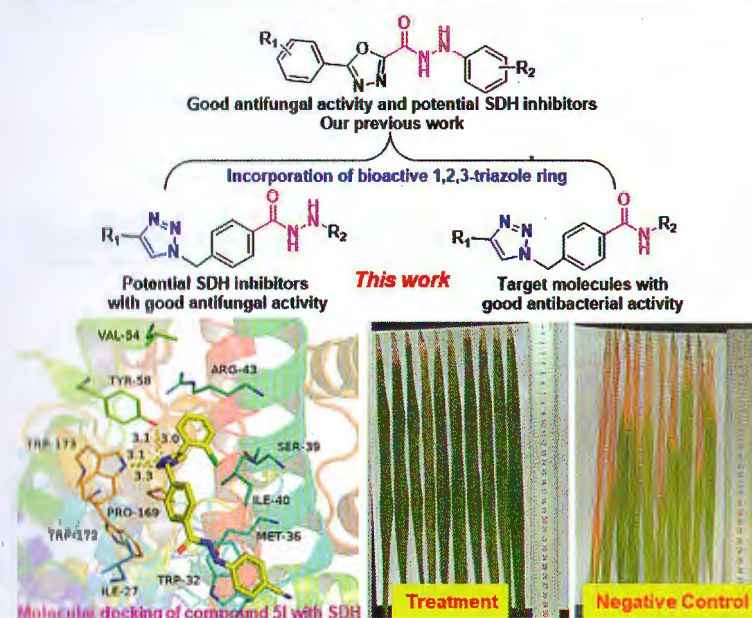
Chin. J. Chem. 2021, 39, 1310–1318. DOI: 10.1002/cjoc.202000705



Synthesis, Antimicrobial Activity, and Molecular Docking of Benzoic Hydrazide or Amide Derivatives Containing a 1,2,3-Triazole Group as Potential SDH Inhibitors

Yue Ding, Ling Zhang, Song Yang, Zhong Li, and Pei-Yi Wang*

Chin. J. Chem. 2021, 39, 1319–1330. DOI: 10.1002/cjoc.202100007

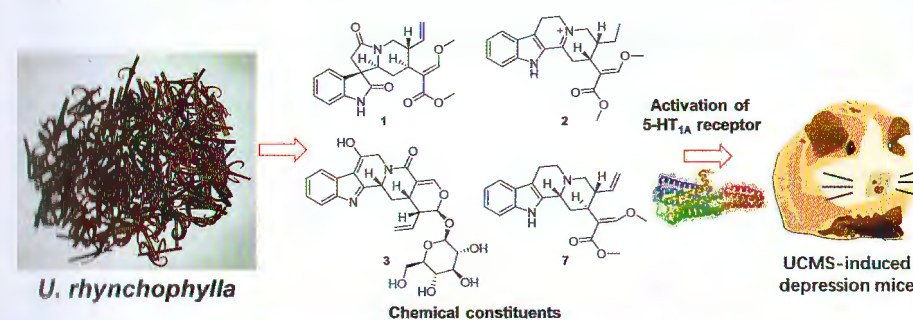


Benzoic hydrazide or amide derivatives containing a 1,2,3-triazole group were synthesized and their *in vitro* and *in vivo* antifungal and antibacterial activities were screened. Antifungal bioassay showed that compound 5l was effective for the control of rice sheath blight and wheat scab with the effects of 75% and 95%, respectively. Further studies suggested that target compounds were potential succinate dehydrogenase inhibitors (SDHIs). Interestingly, compounds 5r and 5s displayed superior control effects against rice bacterial blight (up to 51%) than commercial agents Bismethiazol and Thiodiazole copper.

Uncaralins J–M from *Uncaria rhynchophylla* and Their Anti-depression Mechanism in Unpredictable Chronic Mild Stress-Induced Mice via Activating 5-HT_{1A} Receptor

Zhen-Long Yu, Rong Bai, Jun-Jun Zhou, Hui-Lian Huang, Wen-Yu Zhao, Xiao-Kui Huo, Ya-Hui Yang, Zhi-Lin Luan, Bao-Jing Zhang, Cheng-Peng Sun,* and Xiao-Chi Ma*

Chin. J. Chem. 2021, 39, 1331–1343. DOI: 10.1002/cjoc.202000652



The investigation of *U. rhynchophylla* led to the isolation of four new compounds uncaralins J–M (1–4) and seven known analogues (5–11). Compounds 1, 2, 7, and 9–11 displayed significant agonistic effects towards 5-HT_{1A} receptor with EC₅₀ values of 1.18–7.86 $\mu\text{mol/L}$. Hirsuteine (7) displayed a significant antidepressant effect in UCMS-induced depression mice via regulating 5-HT_{1A} receptor interacted with Asp116 and Asn386.

Cornerstones in Chemistry

Frustrated Lewis Pair Catalysis: It Takes Two to Make a Thing Go Right

Xinyue Tan and Huadong Wang*

Chin. J. Chem. 2021, 39, 1344–1352. DOI: 10.1002/cjoc.202000570



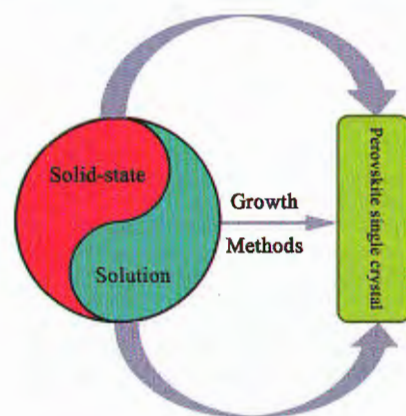
Unquenched Lewis acids and bases, designated “frustrated Lewis pairs”, provide new possibilities for a variety of catalytic transformations and open an enormous space for fine tuning the electronic and steric properties of catalysts.

Recent Advances

Solution and Solid-Phase Growth of Bulk Halide Perovskite Single Crystals

Chao Zhang, Xiaolin Liu,* Jing Chen, and Jia Lin*

Chin. J. Chem. 2021, 39, 1353–1363. DOI: 10.1002/cjoc.202000593

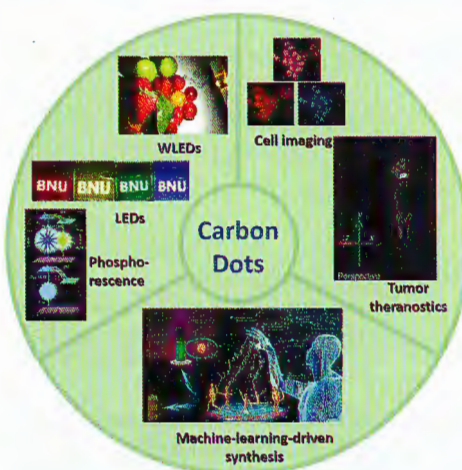


In this review, the characteristics of the existing mainstream methods for growing bulk halide perovskite single crystals and their applications as photodetectors and gas sensors were discussed, which is insightful for future synthesis and applications of perovskite single crystals.

Recent Advance in Carbon Dots: From Properties to Applications

Hao Wu, Huimin Xu, Yuxin Shi, Ting Yuan, Ting Meng, Yang Zhang,* Wenjing Xie,* Xiaohong Li, Yunchao Li, and Louzhen Fan*

Chin. J. Chem. 2021, 39, 1364–1388. DOI: 10.1002/cjoc.202000609

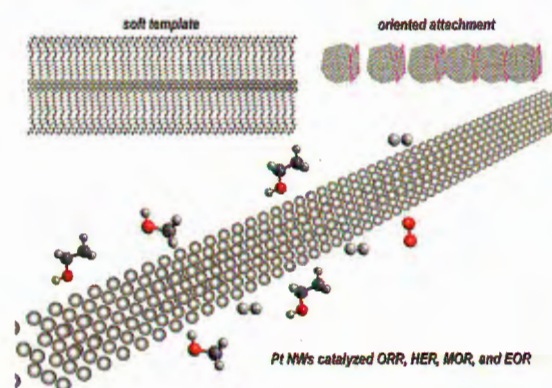


We update the latest researches on preparation, optoelectronic and chemical properties of CDs as well as their biomedical and optoelectronic applications. We hope that this review will give further impulses to target-oriented research on CDs for biomedical and optoelectronic applications.

Recent Advances in Pt-Based Ultrathin Nanowires: Synthesis and Electrocatalytic Applications

Yu Wang, Yuliang Yuan, and Hongwen Huang*

Chin. J. Chem. 2021, 39, 1389–1396. DOI: 10.1002/cjoc.202000714



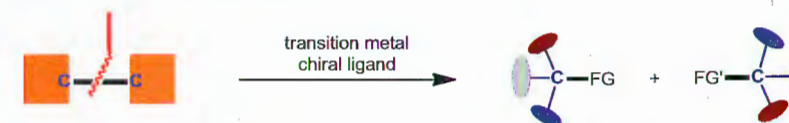
In this minireview, the general synthetic methods and fundamental insights into the growing mechanism of Pt-based ultrathin nanowires as well as the recent advances for electrocatalytic applications are summarized.

J&K Critical Review

Transition-Metal-Catalyzed Carbon-Carbon Bond Activation in Asymmetric Synthesis

Xiufen Bi, Qiluchl Zhang, and Zhenhua Gu*

Chin. J. Chem. 2021, 39, 1397–1412. DOI: 10.1002/cjoc.202000591



Recent advances of transition-metal-catalyzed carbon-carbon activation reactions and their synthetic applications were reviewed. In these reactions, the enantio-determining step is either at the carbon-carbon bond cleavage stage or its downstream reactions.