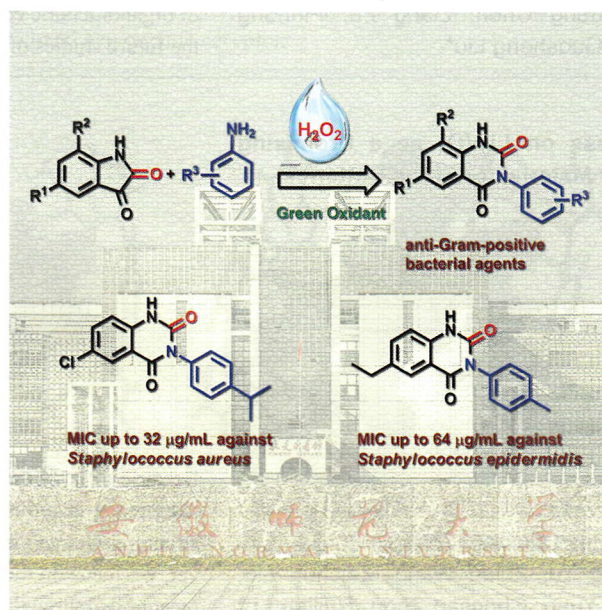
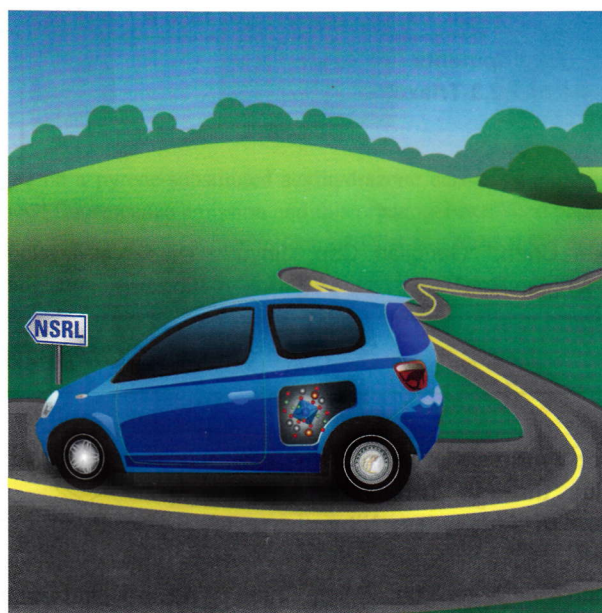


## COVER PICTURES

The cover picture shows a green and highly efficient synthetic method for the synthesis of quinazoline-2,4-diones from readily available isatins and arylamines. This method is interesting in keeping with the notion of green chemistry because of the use of hydrogen peroxide as the terminal oxidant. The rearrangement oxidation exhibited good functional group tolerability, metal-free catalysts, obviating the need for oxidants and only environmentally benign  $H_2O$  was released. Moreover, an antibacterial activity study was performed to evaluate the antimicrobial activities. The results showed that some of the testing compounds inhibited the growth of the *Staphylococcus aureus* (32  $\mu\text{g/mL}$ ) and *Staphylococcus epidermidis* (64  $\mu\text{g/mL}$ ), which could potentially solve the problem of multidrug resistance. More details are discussed in the article by Shang *et al.* on page 1835—1843.



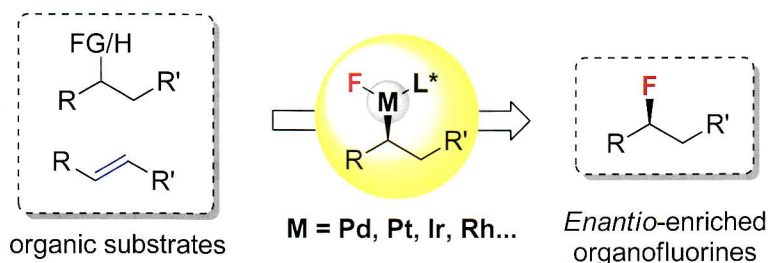
The back cover picture shows X-ray near edge absorption spectroscopy has been applied to cathode materials for lithium-ion batteries to explore its structure-activity relationship. The result shows that in the Li-rich cathode  $\text{Li}_{1.15}\text{Ni}_{0.47}\text{Sb}_{0.38}\text{O}_2$ , as a model system, Ti ions replaced the Li ions and then made an antistructure defect. It would change our understanding to the doped method for the cathode layer materials and benefit for designing other more powerful cathodes. In the picture, the road has been represented by the curve shape of the XANES of the as-studied sample. The atomic arrangement around the Ti ion of the sample has been put into the tank position of the car. NSRL, National Synchrotron Radiation Laboratory, is the name of our laboratory. More details are discussed in the article by Chu *et al.* on page 1853—1860.



## REVIEWS

1781

### Recent Advances and Perspectives of Transition Metal-Catalyzed Asymmetric Fluorination Reactions



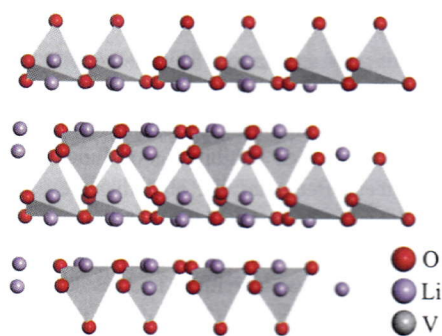
### Asymmetric catalytic fluorinations

This review presents the recent advancement of transition metal-catalyzed asymmetric fluorination reactions, in which the final C—F bond derived from reductive elimination of organometallic complexes. In addition, the perspective of the field is also provided for the future studies of asymmetric fluorinations and the related transformations.

Chaohuang Chen, Liang Fu, Pinhong Chen, Guosheng Liu\*

1789

### Progress on $Li_3VO_4$ as a Promising Anode Material for Li-ion Batteries

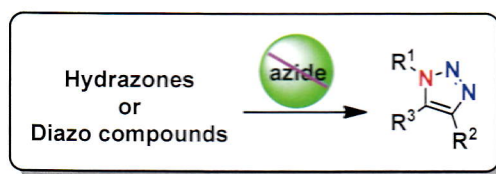


Because of large specific capacity, low and safe redox potential and low cost,  $Li_3VO_4$  is regarded as a promising intercalation anode material for the Li-ion batteries. Here, its structure, charge/discharge mechanism, and preparation methods are reviewed. Moreover, we focus on the understanding of its electrochemical performance and highlight the recent breakthroughs. Finally, future opportunities and challenges on this anode material are also discussed.

Jun Mo, Xiumei Zhang, Junjie Liu, Jingang Yu, Zhian Wang, Zaichun Liu, Xinhai Yuan, Chunjiao Zhou, Ruilian Li,\* Xiongwei Wu,\* Yiping Wu\*

1797

### Recent Developments in Azide-Free Synthesis of 1,2,3-Triazoles



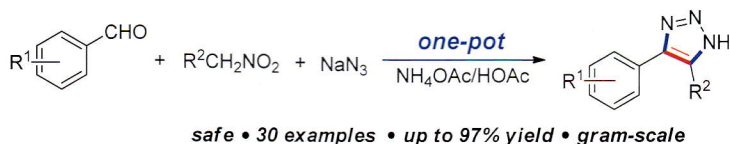
Zhengkai Chen,\* Gangjian Cao, Jinyu Song, Hongjun Ren\*

The recent development of the construction of 1,2,3-triazoles under azide-free conditions is summarized.

## COMMUNICATION

1808

### One-Pot Synthesis of 4-Aryl-NH-1,2,3-Triazoles through Three-Component Reaction of Aldehydes, Nitroalkanes and $NaN_3$



Rongrong Hui, Mina Zhao, Ming Chen, Zhihui Ren, Zhenghui Guan\*

A one-pot three-component reaction of aldehydes, nitroalkanes and  $NaN_3$  for the synthesis of NH-1,2,3-triazoles has been developed.

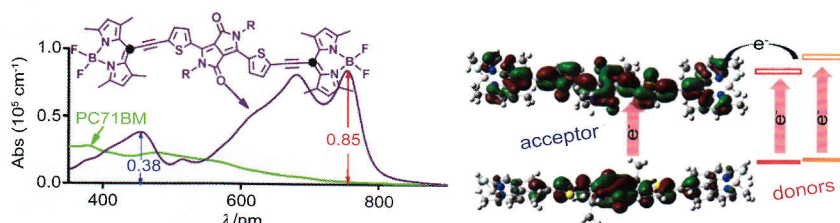


## FULL PAPERS

1813

**A Novel BODIPY-Based Low-Band-Gap Small-Molecule Acceptor for Efficient Non-fullerene Polymer Solar Cells**

Wenxu Liu, Jiannian Yao, Chuanlang Zhan\*

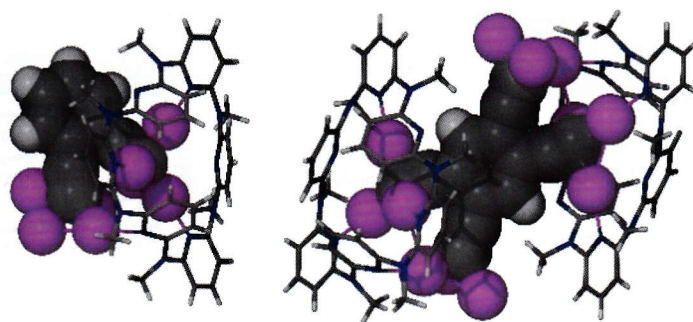


A novel small-molecule BODIPY-acceptor was synthesized by extending the BODIPY-diketopyrrolopyrrole excited electron delocalization through the BODIPY *meso*-carbon, the ideal position for BODIPY's excited electron delocalization. This BODIPY acceptor shows unprecedented broad and intense absorption (see the figure), having a dual role as the wide and narrow band gap organic acceptor.

1824

**Macrocyclic-ligand Induced Synthesis of Aryl Ethynides with Divergent Silver(I) Clusters**

Guangmian Ji, Siqi Zhang, Sam C. K. Hau, Liang Zhao\*

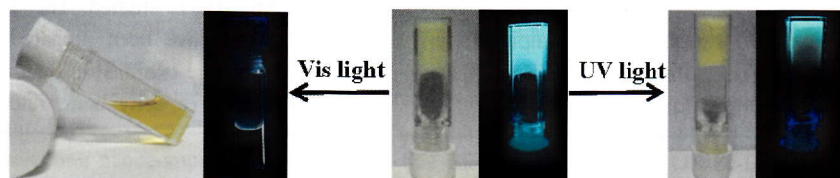


Two structurally characterized metal-cluster-centered supramolecular architectures are synthesized through the interaction with a bowl-shaped macrocyclic ligand Py[6].

1829

**A Photo-Responsive Organogel Based on Pyrene-Substituted Acylhydrazone Derivative**

Qing Chai, Jue Wei, Binglian Bai,\* Haitao Wang, Min Li\*

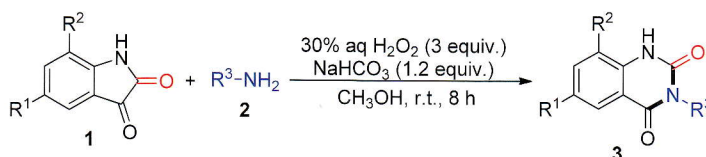


The organogel based on a pyrene-substituted acylhydrazone derivative exhibited gelation-induced enhanced fluorescence emission and this organogel exhibited photoresponsive behaviors due to the *trans-cis* isomerizations of  $-C=N-$  bond upon exposure to visible or UV light.

1835

**Oxidative Rearrangement of Isatins with Arylamines Using  $H_2O_2$  as Oxidant: A Facile Synthesis of Quinazoline-2,4-diones and Evaluation of Their Antibacterial Activity**

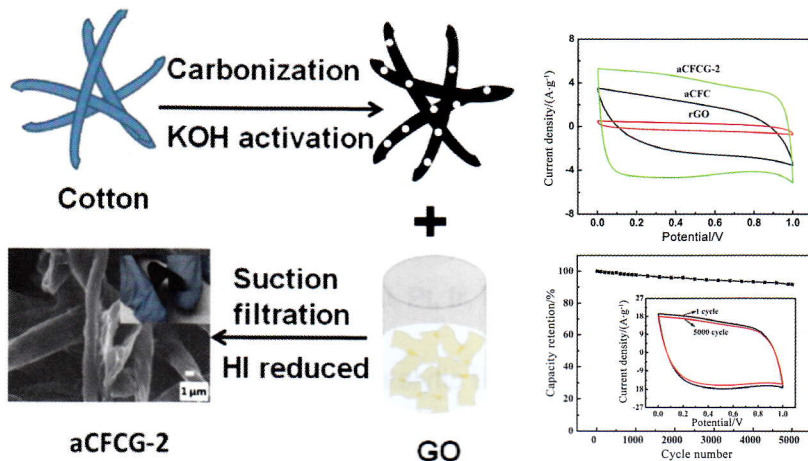
Guanghao Shi, Xinwei He, Yongjia Shang,\* Cheng Yang, Liwei Xiang



- > Green Oxidant
- > One-pot Synthesis
- > Broad Substrate Scope
- > anti-Gram-positive bacterial agents
- > MIC up to 32  $\mu\text{g/mL}$  against *S. aureus*
- > MIC up to 64  $\mu\text{g/mL}$  against *S. epidermidis*

1844

## Capacitive Properties of the Binder-Free Electrode Prepared from Carbon Derived from Cotton and Reduced Graphene Oxide

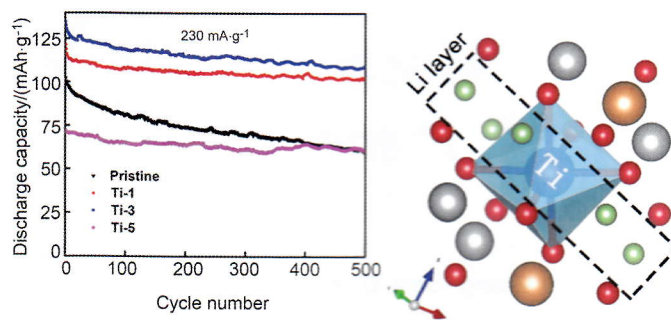


The binder-free composite films of reduced graphene oxide (rGO) and activated carbon derived from cotton (aCFC) have been fabricated. The optimal composite films aCFCG-2 exhibits porous structure and has a larger specific surface area, a total pore volume, large specific capacitance, and good cyclic stability. The assembled solid-state ECs show good mechanical stability and capacitive performances after repeated bending cycles.

Wenhui Ma, Yunzhen Chang, Gaoyi Han,\* Yaoming Xiao,\* Dongying Fu, Yahui Chang

1853

## Enhanced Electrochemical Performance of Ti-Doping $\text{Li}_{1.15}\text{Ni}_{0.47}\text{Sb}_{0.38}\text{O}_2$ as Lithium-excess Cathode for Lithium-ion Batteries

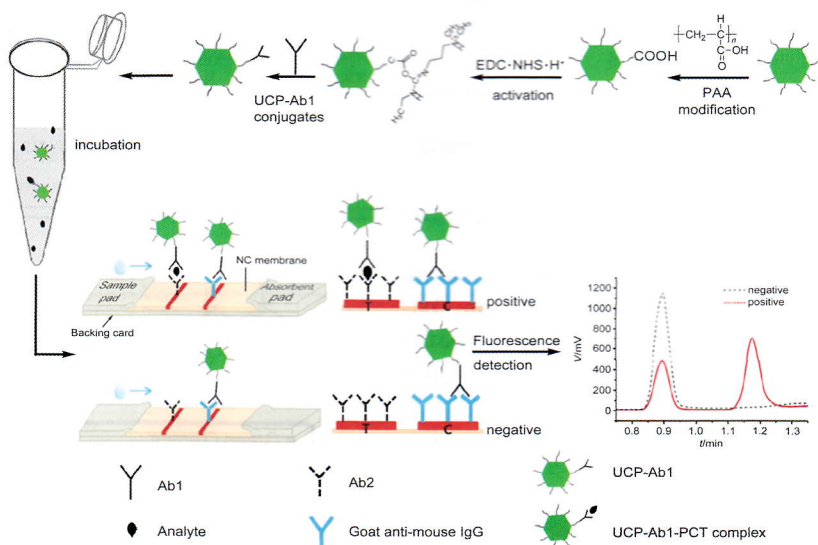


In this work, the doping effect of Ti on the structure and electrochemical properties of  $\text{Li}_{1.15}\text{Ni}_{0.47}\text{Sb}_{0.38}\text{O}_2$  is studied. The Ti-stabilized  $\text{Li}_{1.15-4x}\text{Ni}_{0.47}\text{Ti}_x\text{Sb}_{0.38}\text{O}_2$  ( $x=0, 0.01, 0.03$  and  $0.05$ ) have been prepared by a solid-state method and the  $\text{Li}_{1.03}\text{Ni}_{0.47}\text{Sb}_{0.38}\text{Ti}_{0.03}\text{O}_2$  sample exhibits outstanding electrochemical performance with a larger reversible discharge capacity, better rate capability and cyclability.

Xiaozhi Su, Xingbo Wang, Haiping Chen, Zhen Yu, Jiaxin Qi, Shi Tao,\* Wangsheng Chu,\* Li Song

1861

## Rapid Detection of Serum Procalcitonin by Immunochromatography Technology Based on Freeze-dried Up-conversion Nanoparticles/Anti-body Conjugates



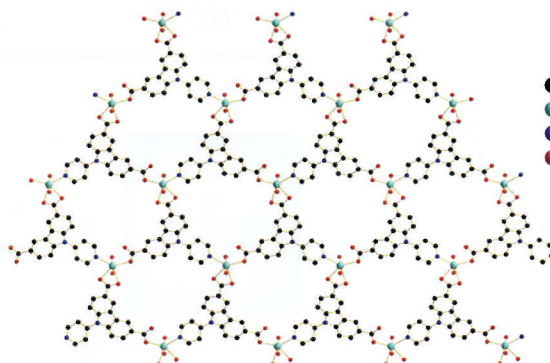
Lijiang Lei, Yang Zhou, Yuwang Han,\* Hongman Zhang\*



1869

### A 2D Metal-Organic Framework Based on 9-(Pyridin-4-yl)-9*H*-carbazole-3,6-dicarboxylic Acid: Synthesis, Structure and Properties

Xinhui Zhou,\* Yali Zhu, Liang Li, Wei Huang

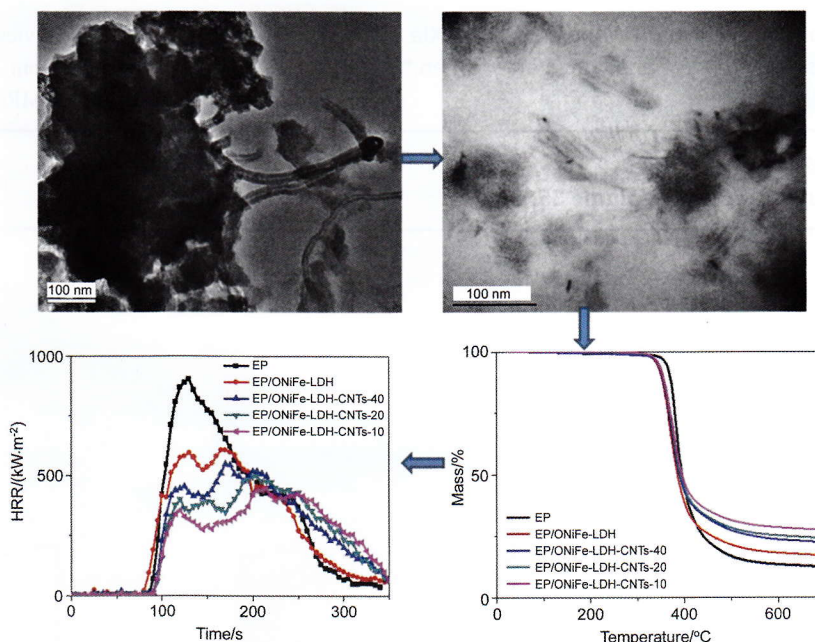


A metal-organic framework based on 9-(pyridin-4-yl)-9*H*-carbazole-3,6-dicarboxylic acid ( $H_2L$ ) has been synthesized. It features the 2D framework and exhibits a narrow emission band with the peak at 414 nm.

1875

### Improving Thermal and Flame Retardant Properties of Epoxy Resin with Organic NiFe-Layered Double Hydroxide-Carbon Nanotubes Hybrids

Qinghong Kong, Ting Wu, Yingqi Tang, Lemin Xiong, Hong Liu, Junhao Zhang, Ruihua Guo,\* Feng Zhang\*

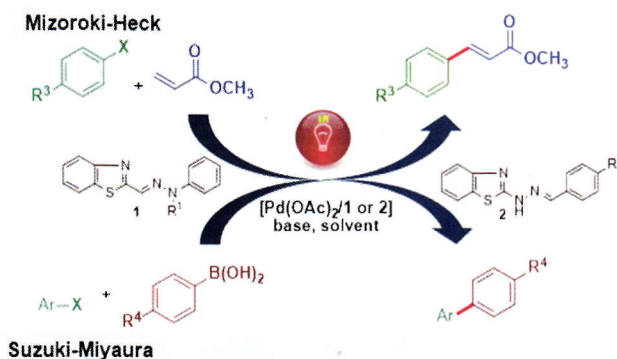


Organic nickel-iron layered double hydroxides (ONiFe-LDH) were assembled on carboxylated carbon nanotubes (CNTs) through co-precipitation method and characterized. EP/ONiFe-LDH-CNTs nanocomposites containing 4 wt% of ONiFe-LDH-CNTs with different ratios of ONiFe-LDH and CNTs were prepared by ultrasonic dispersion and program temperature curing method. Strong combination of the above nanofillers with the EP matrix provided an efficient thermal and flame retardant improvement for the resulting nanocomposites. It is showed that EP containing 4 wt% ONiFe-LDH-CNTs hybrid exhibited superior flame retardant and thermal properties compared with pure EP.

1881

### Arylhydrazones Derivatives Containing a Benzothiazole Moiety, Efficient Ligands in the Palladium-Catalyzed Mizoroki–Heck and Suzuki–Miyaura Cross-coupling Reactions under IR Irradiation

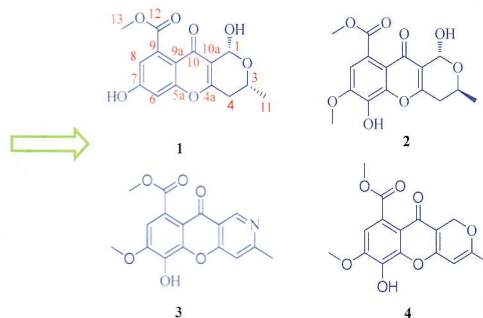
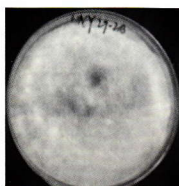
Fernando Ortega-Jiménez,\* José Guillermo Penierres-Carrillo, José Guadalupe López-Cortés, M. Carmen Ortega-Alfaro, Selene Lagunas-Rivera



Simple arylhydrazones **1** and **2** containing a benzothiazole moiety are used as efficient ligands in the palladium-catalyzed Mizoroki–Heck and Suzuki–Miyaura cross-coupling reactions under infrared irradiation as an alternative source of energy.

1889

Three New Chromone Derivatives  
Produced by *Phomopsis* sp. HNY29-  
2B from *Acanthus ilicifolius* Linn.



Bo Ding, Zhiyuan Wang, Guoping Xia,  
Xishan Huang, Fang Xu, Wenrui Chen,\*  
Zhigang She\*

This paper presents a general overview of three new compounds (**1–3**), and one known chaetocyclinone B (**4**) isolated from *Phomopsis* sp. HNY29-2B. Their structures were determined by  $^1\text{D}$  NMR and  $^2\text{D}$  NMR and mass spectrum.

1894

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