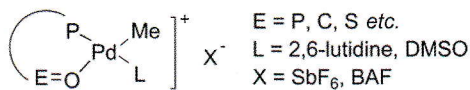


## REVIEW

1209

**Asymmetric Cationic [P, O] Type Palladium Complexes in Olefin Homopolymerization and Copolymerization**

E = P, C, S etc.  
L = 2,6-lutidine, DMSO  
X = SbF<sub>6</sub>, BAF

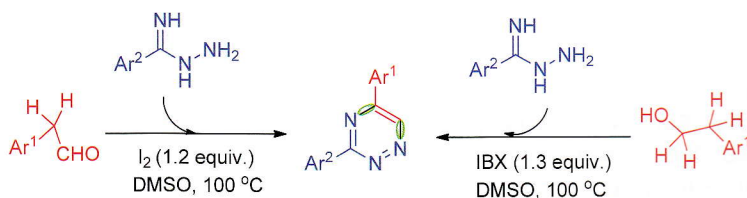
Cationic [P, O] Pd catalyst for olefin polymerization and copolymerization

Shuoyan Xiong, Lihua Guo,\* Shumiao Zhang, Zhe Liu\*

This review summarizes several types of high performance cationic [P, O] palladium catalysts in ethylene oligomerization, ethylene homopolymerization and the copolymerization of ethylene with polar monomers.

## COMMUNICATIONS

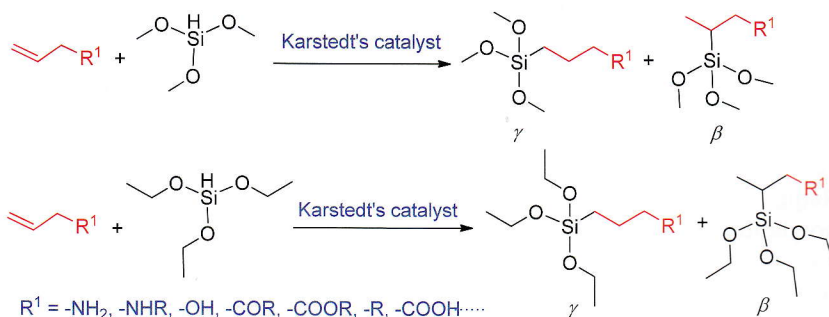
1222

**Synthesis of 1,2,4-Triazine Compounds via Two Distinct One-Pot Domino Protocols**

Yafeng Liu, Xin Guo, Dong Tang, Jing Wang, Ping Wu, Jianwei Han, Baohua Chen\*

1,2,4-Triazine compounds were synthesized via two coupled domino strategies employing simple and readily available arylacetaldehydes/arylethyl alcohols as starting materials. The reactions proceed smoothly in one pot with the advantages of high functional groups tolerance, being transition metal-free, and employing environmentally friendly oxidants such as I<sub>2</sub> and IBX, providing access to the desired 1,2,4-triazine products in excellent yields.

1227

**Study of Karstedt's Catalyst for Hydrosilylation of a Wide Variety of Functionalized Alkenes with Triethoxysilane and Trimethoxysilane**

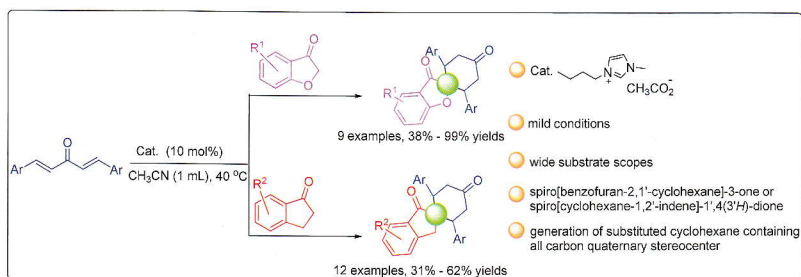
Zhenhuan Pan, Minglun Liu, Chaoyue Zheng, Deqing Gao,\* Wei Huang\*

Karstedt's catalyst [Ptn(H<sub>2</sub>C=CHSiMe<sub>2</sub>OSiMe<sub>2</sub>CH=CH<sub>2</sub>)<sub>m</sub>] demonstrated the excellent performance for the hydrogenation of olefins and especially aminated alkenes with trimethoxysilane and triethoxysilane in terms of the yield and selectivity.

1231

## Functional Ionic Liquids Promoted Double Michael Reaction of Benzofuran-3-one or 1-Indone and Symmetric Dienones: Construction of Spiro[benzofuran-2,1'-cyclohexane]-3-one or Spiro[cyclohexane-1,2'-indene]-1',4(3'H)-dione Derivatives

Chunhui Liu, Yalun Xu, Songyang Niu, Lique Wei, Yong Liu, Yanbo Wang, Junyan Zhu, Jiya Fu,\* Jinfang Yuan\*

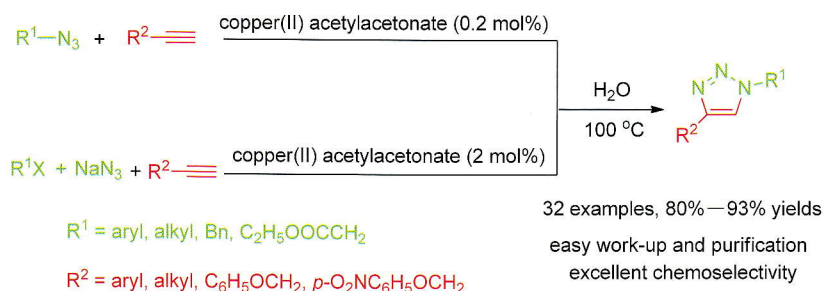


The double Michael reactions between benzofuran-3-one or 1-indone and symmetric dienones in the presence of catalytic ionic liquids were successfully developed and the desired products were obtained in excellent yields (up to 99%). This catalytic system was also extended to the double Michael reaction of less reactive 1-indone and the desired products were obtained in 31%–62% yields.

1239

## Copper(II) Acetylacetonate: An Efficient Catalyst for Huisgen-Click Reaction for Synthesis of 1,2,3-Triazoles in Water

Yuqin Jiang, Xingfeng Li, Xiyong Li, Yamin Sun, Yaru Zhao, Shuhong Jia, Niu Guo, Guiqing Xu,\* Weiwei Zhang\*

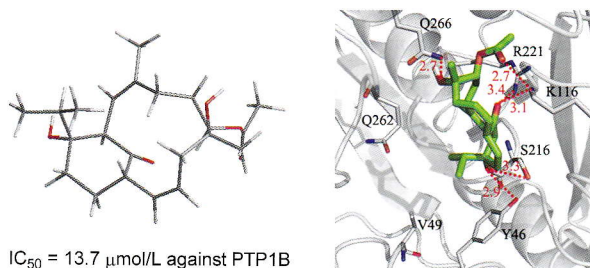


An efficient and green copper(II) acetylacetonate-catalyzed protocol for the Huisgen-click reaction in water at 100 °C has been established. The protocol was not only suitable for the reaction between organic azides and alkynes, but also suitable for one-pot three-component reaction among alkyl halides, NaN<sub>3</sub> and alkynes.

1246

## A Novel Sarsolenane Diterpene as a PTP1B Inhibitor from Hainan Soft Coral *Sarcophyton trocheliophorum* Marenzeller

Linfu Liang, Jinan Wang, Xiaoxuan Shi, Yinghua Zhu, Jia Li, Weiliang Zhu, Heyao Wang, Yuewei Guo\*



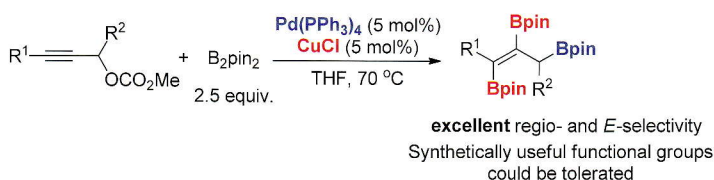
A novel sarsolenane diterpene **1** as a minor component from the South China Sea soft coral *S. trocheliophorum*, exhibited moderate inhibitory activity ( $IC_{50} = 13.7 \mu\text{mol}\cdot\text{L}^{-1}$ ) against PTP1B. This discovery promotes computational prediction of binding mode between the enzyme and the metabolite, suggesting a crucial role of the residues Tyr46, Ser216 and Arg221 in the binding action.

## FULL PAPERS

1251

## Regio- and (E)-Stereoselective Triborylation of Propargylic Carbonates

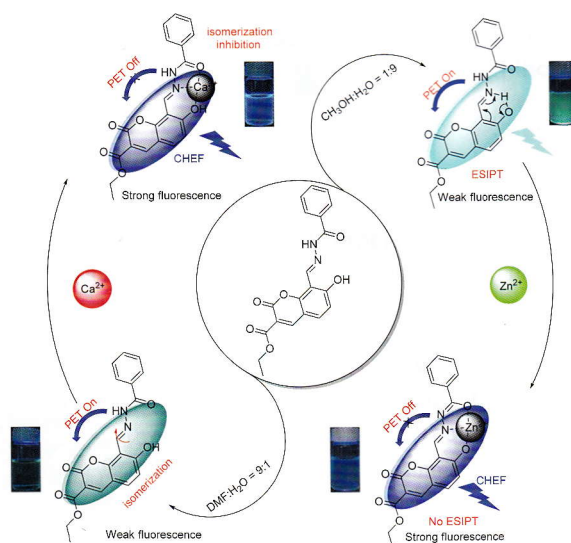
Zheng Yang, Tao Cao, Yulin Han, Weilong Lin, Qi Liu, Yang Tang, Yizhan Zhai, Minqiang Jia, Wanli Zhang, Tonghao Zhu, Shengming Ma\*



The triborylation of readily available propargylic carbonates under co-catalysis of Pd and Cu forming (*E*)-alken-1,2,3-triboronates has been developed. The reaction enjoys an excellent regio- and *E*-selectivity tolerating a broad scope with many synthetically useful functional groups.

1263

### A Novel Dual Channel Fluorescent Probe for $\text{Ca}^{2+}$ and $\text{Zn}^{2+}$ Based on a Coumarin Schiff Base

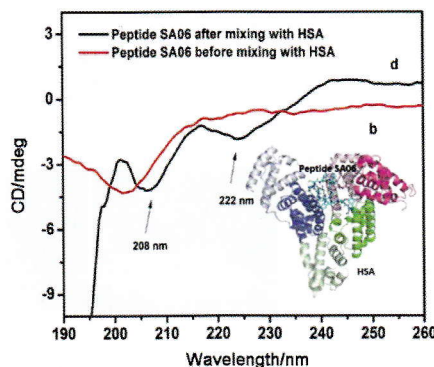


Novel coumarin Schiff base fluorescent probe has been designed and synthesized which shows a solvent dependent dual sensing, viz., recognition of  $\text{Ca}^{2+}$  in DMF- $\text{H}_2\text{O}$  (9 : 1,  $V/V$ ) solution based on  $\text{C}=\text{N}$  isomerization, photoinduced electron transfer (PET) inhibition and chelation-enhanced fluorescence (CHEF) mechanism as well as detection of  $\text{Zn}^{2+}$  in  $\text{H}_2\text{O}-\text{CH}_3\text{OH}$  (9 : 1,  $V/V$ ) solution by excited-state intramolecular proton transfer (ESIPT) and CHEF processes.

Shengnan Pan, Haoyang Tang, Zhanke Song, Jin Li, Yuan Guo\*

1270

### Allosteric Modulation of Human Serum Albumin Induced by Peptide Ligand

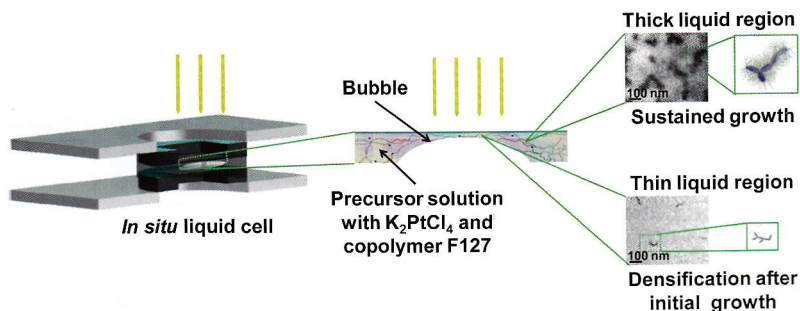


This work studied allosteric modulation of human serum albumin induced by peptide ligand, figured out the binding affinity, and provided structural evidence on the interaction mechanism of albumin-peptide complex.

Jingfei Hou, Jiayi Peng, Yue Yu, Yuchen Lin, Changliang Liu, Hongyang Duan, Yanlian Yang,\* Chen Wang\*

1278

### Direct Observation of Growth and Self-assembly of Pt Nanoclusters in Water with the Aid of a Triblock Polymer Using *in situ* Liquid Cell Transmission Electron Microscopy (TEM)



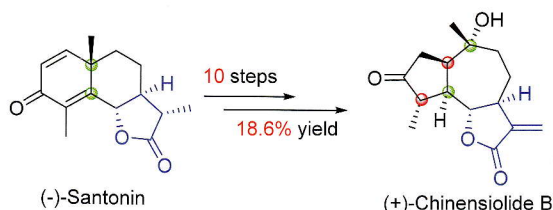
The growth and self-assembly of Pt nanoclusters with the aid of F127 surfactants are directly observed using *in situ* liquid cell TEM, and a surfactant guided nanocluster formation mechanism is proposed. Dramatic differences are found on the cluster forming behaviour and final morphologies between thick and thin liquid regions. The difference in precursor availability and charging effects are attributed to the different growth behaviour in different thickness regions.

Xin Chen,\* Chang Li, Xing Kong, Hongliang Cao, Hulan Wang, Xiaoqin Zhou



1284

**Total Synthesis of (+)-Chinensioidide B from  $\alpha$ -Santonin**

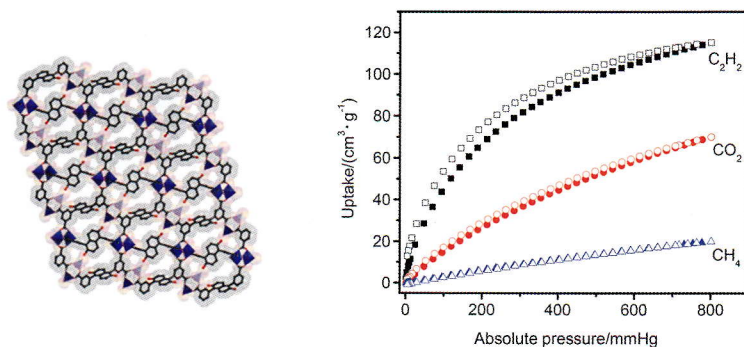


Lingqiong Zhang, Xiaoli Dai, Lianzhi Tao, Chunsong Xie, Min Zhang, Min Wang\*

A short and efficient total synthesis of (+)-chinensioidide B is reported from  $\alpha$ -santonin in 10 steps with 18.6% overall yield.

1289

**A New Microporous Metal-Organic Framework for Highly Selective  $C_2H_2/CH_4$  and  $C_2H_2/CO_2$  Separation at Room Temperature**

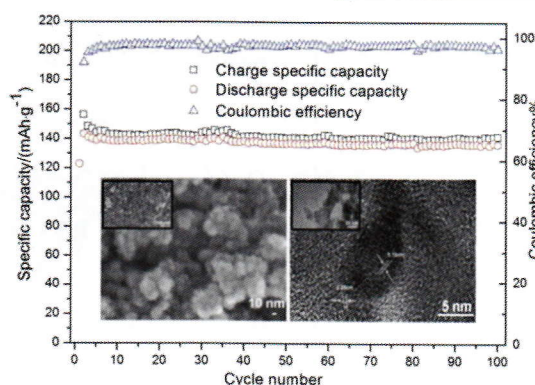


Xing Duan,\* Tifeng Xia, Zhenguo Ji, Yuanjing Cui, Yu Yang, Guodong Qian\*

A microporous three-dimensional metal organic framework with open metal sites and optimized pore sizes was synthesized to realize highly selective  $C_2H_2/CH_4$  and  $C_2H_2/CO_2$  gas separation.

1294

**Amorphous  $MnO_2$  as Cathode Material for Sodium-ion Batteries**

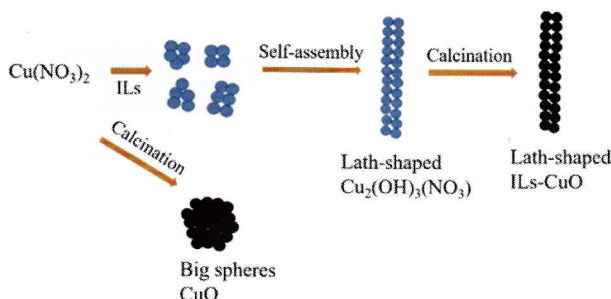


Yirong Zhou, Tong Chen, Junxi Zhang,\* Yao Liu, Ping Ren

Amorphous  $MnO_2$  has been prepared from the reduction of  $KMnO_4$  in ethanol media by a facile one-pot wet chemical route at room temperature. When employed as cathode material in SIBs, the amorphous  $MnO_2$  electrode exhibits high reversible specific capacity, stable cycling performance and good rate capability. The reversible discharge capacity of the amorphous  $MnO_2$  electrode is maintained at  $136.8 \text{ mAh} \cdot g^{-1}$  after 100 cycles at 0.1 C. And the electrode delivers reversible discharge capacities of 120.4, 89, 68 and  $47 \text{ mAh} \cdot g^{-1}$  at 0.2 C, 0.5 C, 1 C and 2 C, respectively.

1299

**Ionic Liquid Mediated Synthesis of Lath Shaped CuO Micro-Assemblies as Extremely Stable Anode Material for Lithium-Ion Batteries**

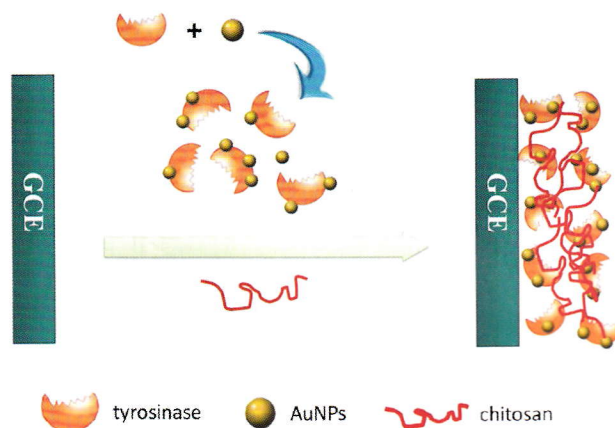


Man Wang, Ruguang Ma, Ying Liu, C.Y. Chung, Yonghong Deng,\* Zhouguang Lu\*

A novel lath-shaped CuO microassembly consisting of well-crystallized ultrafine nanocrystals was prepared by an ionothermal method with the assistance of ionic liquids (ILs, 1-butyl-3-methylimidazolium tetrafluoroborate). As anode material of lithium ion batteries, the ILs-CuO exhibits high specific capacity, durability and good rate performance, superior to bare CuO. At a high current density of  $1000 \text{ mA} \cdot g^{-1}$ , after 100 cycles, ILs-CuO still retains a discharge capacity of  $483.2 \text{ mAh} \cdot g^{-1}$ . The improved electrochemical performances could be ascribed to the unique microscale lath-shape CuO assemblies composed of ultrafine nanostructure.

1305

### Amperometric Biosensor for Detection of Phenolic Compounds Based on Tyrosinase, *N*-Acetyl-*L*-cysteine-capped Gold Nanoparticles and Chitosan Nanocomposite

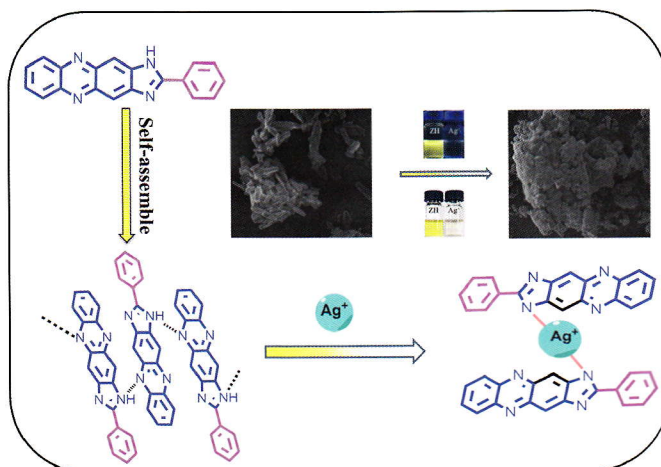


A novel biosensor was fabricated based on the immobilization of tyrosinase and *N*-acetyl-*L*-cysteine-capped gold nanoparticles onto the surface of the glassy carbon electrode via the film forming by chitosan. The NAC-AuNPs with the average size of 3.4 nm had much higher specific surface and good biocompatibility, which were favorable for increasing the immobilization amount of enzyme, retaining the catalytic activity of enzyme and facilitating the fast electron transfer.

Wenjue Dong, Jiyue Han, Jia Shi, Wenting Liang, Yuxia Zhang, Chuan Dong\*

1311

### Sensitive and Selective Fluorescent and Colorimetric Sensor for $\text{Ag}^+$ Based on the Supramolecular Self-Assembly in Semi-Water

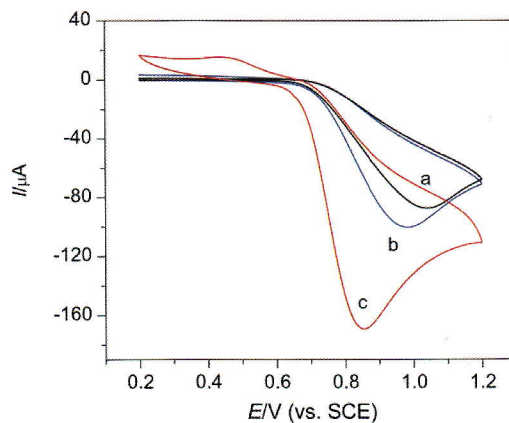


In this paper, a fluorescent and colorimetric sensor based on the supramolecular self-assembly was designed and synthesized, which could detect  $\text{Ag}^+$  in aqueous solution with high sensitivity and selectivity. It had a remarkable ON-OFF type fluorescent signaling behavior and obvious color change from yellow to buff by adding  $\text{Ag}^+$  into the solution of ZH.

Taibao Wei,\* Haili Zhang, Wenting Li, Wenjuan Qu, Junxia Su, Qi Lin, Youming Zhang, Hong Yao

1317

### A $\text{MnOOH}$ -Polyaniline Nanocomposite Modified Gold Electrode for Electrochemical Sensing of Nitrite

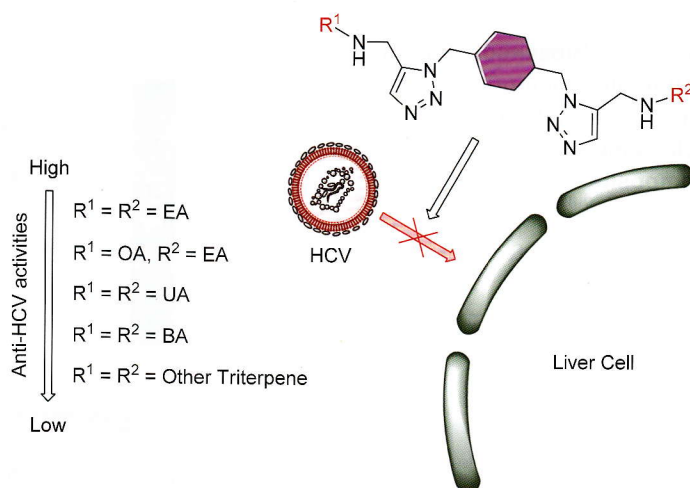


A novel non-enzymatic nitrite sensor based on  $\text{MnOOH}$ -PANI nanocomposites was fabricated and used for electrochemical sensing of nitrite.

Yu Shen, Jian Zhang, Qinglin Sheng,\* Jianbin Zheng\*

1322

## Design, Synthesis and Biological Evaluation of Pentacyclic Triterpene Dimers as HCV Entry Inhibitors

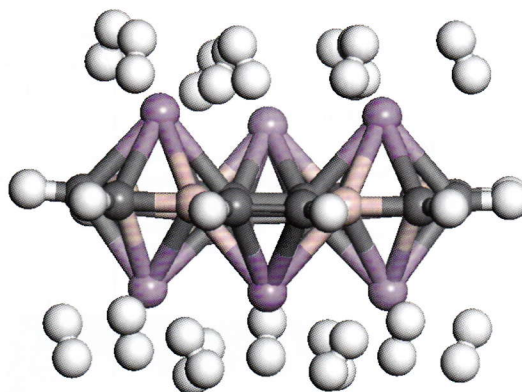


Lingkuan Meng, Qi Wang, Tao Tang, Sulong Xiao, Lihe Zhang, Demin Zhou, Fei Yu\*

A series of triterpene dimers bearing different scaffold were designed and synthesized via CuAAC reaction. Their anti-HCV entry activities were evaluated by HCVpp and VSVpp entry assays. Using a linker bearing a piperazine group, compound **14** dramatically increased its potency with  $\text{IC}_{50}$  at 2.87 nmol/L.

1329

## Hydrogen Storage on Li Coated $\text{BC}_3$ Honeycomb Sheet



Yafei Zhang, Xinlu Cheng\*

Using density functional theory, we investigated the hydrogen storage capacity of Li coated  $\text{BC}_3$  honeycomb sheet. Our result indicates that when six Li atoms coated, the binding energy of each Li atom is 3.20 eV/atom, larger than the cohesive energy 1.63 eV/atom of bulk Li and prevents Li atoms from aggregation. Meanwhile, The largest hydrogen gravimetric density is 9.68 wt% and this is higher than the year 2020 target by the US Department of Energy. Also, the adsorption energy per  $\text{H}_2$  is 0.206 eV, which is desirable for absorbing and desorbing  $\text{H}_2$  molecules at nearly ambient conditions.