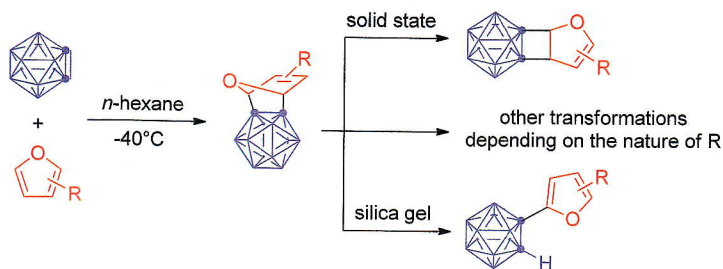


## Comprehensive Reports

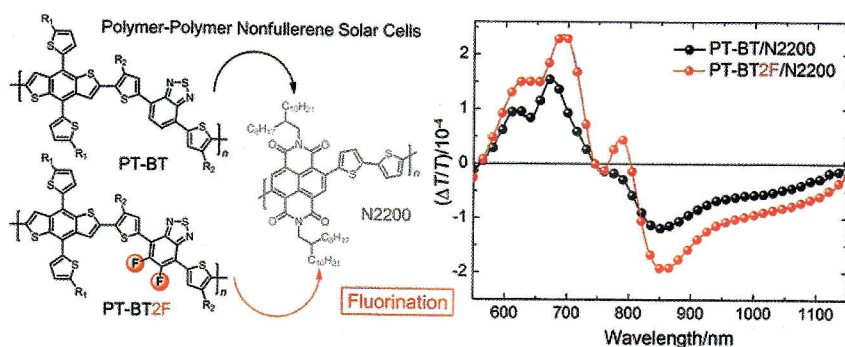
273  
Reaction of *o*-Carboryne with Furans: Facile Synthesis of Carborane-Fused Oxanorbornenes and Their Derivatives



Rongyi Zhang, Yinggen Yuan, Zaozao Qiu,\*  
Zuowei Xie\*

Reaction of *o*-carboryne with furans gives [4+2] cycloadducts, which can be converted to [2+2] cycloadducts, 1-furanyl-*o*-carboranes and other multifunctionalized carboranes.

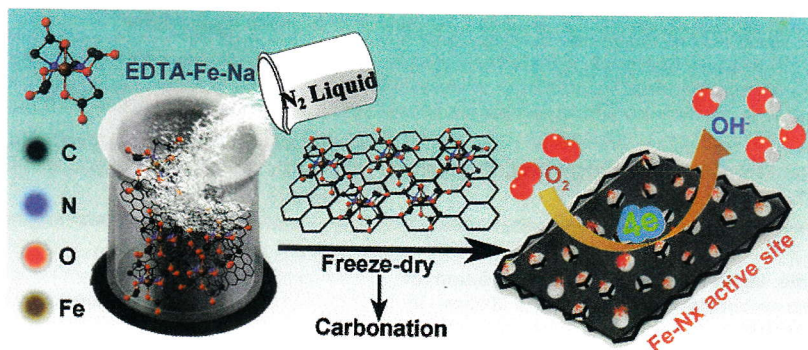
280  
Enhanced Charge Transfer, Transport and Photovoltaic Efficiency in All-Polymer Organic Solar Cells by Polymer Backbone Fluorination



Jianxia Sun, Feng Jin, Haibin Zhao, Jianyu Yuan,\*  
Wanli Ma\*

All-polymer blend employing fluorinated polymer PT-BT2F exhibits more efficient charge transfer between donor and acceptor compared to that employing non-fluorinated PT-BT/N2200 blend. As a result, all-PSCs utilizing PT-BT2F as donor and N2200 as acceptor output higher PCE than PT-BT/N2200 based device.

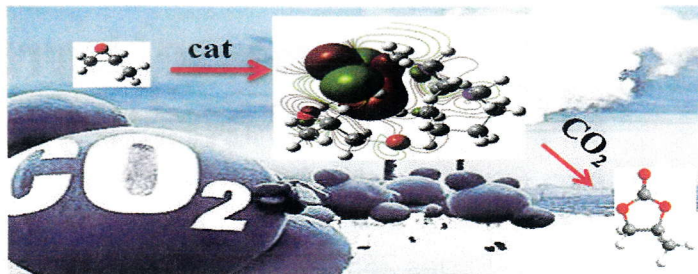
287  
Anchoring Iron-EDTA Complex on Graphene toward the Synthesis of Highly Efficient Fe-N-C Oxygen Reduction Electrocatalyst for Fuel Cells



Zhi-Wen Chang, Fan-Lu Meng, Hai-Xia Zhong,  
Xin-Bo Zhang\*

Iron-EDTA complex was applied and directly anchored on graphene using a novel liquid nitrogen assisted and extremely rapid freeze drying method firstly to realize high ORR performance in fuel cells.

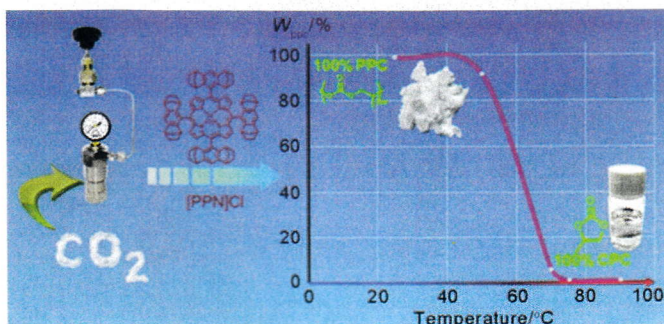
293  
 Synthesis of Cyclic Carbonate Catalyzed by DBU  
 Derived Basic Ionic Liquids



Wei Li, Weiguo Cheng, Xia Yang, Qian Su, Lihui Dong, Pan Zhang, Yunan Yi, Bin Li,\* Suojiang Zhang\*

Hydrogen bond had been formed between ILs and epoxy compound which helped to open the ring of epoxy compounds. Then the ring-opened epoxy compound reacted with CO<sub>2</sub> to form a cyclic carbonate.

299  
 Temperature-responsive Catalyst for the Coupling  
 Reaction of Carbon Dioxide and Propylene  
 Oxide

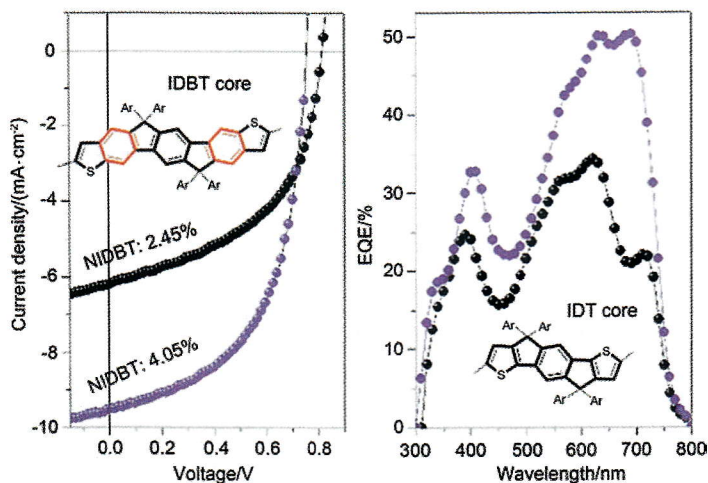


Chunwei Zhuo, Yusheng Qin,\* Xianhong Wang,\*  
 Fosong Wang

Temperature controllable porphyrin aluminum catalyst using 5,10,15,20-tetra(1,2,3,4,5,6,7,8-octahydro-1,4:5,8-dimethanoanthracen-9-yl)porphyrin as ligand, once in conjunction with suitable onium salt, achieved single cycloaddition or copolymerization reaction. Only cycloaddition reaction happened at temperature above 75 °C to produce 100% CPC, whereas copolymerization became dominant to afford PPC with selectivity over 99% at 25 °C, and the obtained PPC showed over 99% carbonate linkage and 92% head-to-tail structure.

Concise Reports

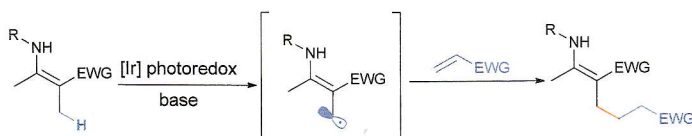
306  
 Effect of Benzene Rings' Incorporation on Photo-  
 voltaic Performance of Indacenodithiophene-  
 core Molecular Acceptors



Haijun Fan, Hao Wu, Pengfei Wang, Xiaozhang  
 Zhu\*

A case study addressing the effect of fusing indaceno[2,1-*b*:6,5-*b'*]dithiophene (IDT) core by incorporating separated benzene rings on the photovoltaic performance of designed molecular acceptor, is demonstrated.

311  
 Visible Light Promoted  $\beta$ -C—H Alkylation of  
 $\beta$ -Ketocarboxyls via a  $\beta$ -Enaminyl Radical In-  
 termediate



$\beta$ -Alkylation of Enamine Carbonyls

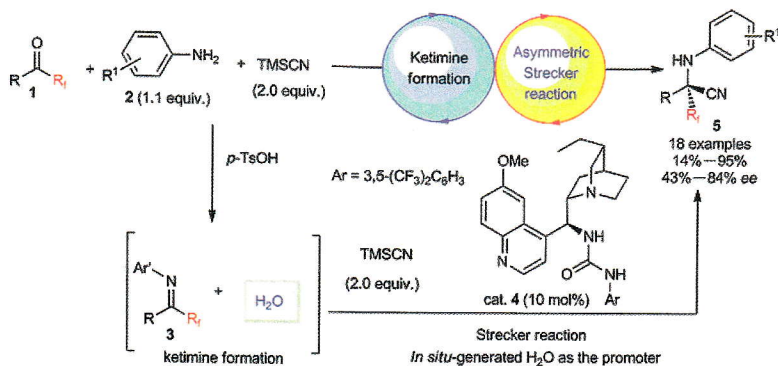
Dehong Wang, Long Zhang, Sanzhong Luo\*

A 5 $\pi$ e  $\beta$ -enaminyl activation platform based on secondary enamine, which enabled the direct  $\beta$ -alkylation of  $\beta$ -ketocarboxyls, has been established.



321

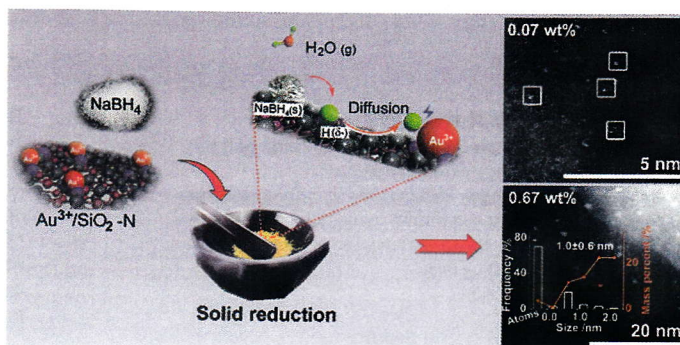
## Internally Reuse Waste: Catalytic Asymmetric One-Pot Strecker Reaction of Fluoroalkyl Ketones, Anilines and TMSCN by Sequential Catalysis



Yun-Lin Liu,\* Xiao-Ping Yin, Jian Zhou\*

329

## Synthesis of Subnanometer-Sized Gold Clusters by a Simple Milling-Mediated Solid Reduction Method

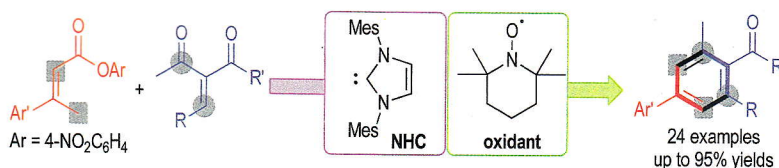


Qinggong Liu, Xinkui Wang,\* Yujing Ren, Xiaofeng Yang, Zhilian Wu, Xiaoyan Liu, Lin Li, Shu Miao, Yang Su, Yanqin Li, Changhai Liang, Yanqiang Huang\*

A simple milling-mediated solid reduction method was developed for the preparation of subnanometer-sized gold catalysts.

333

## Construction of Multi-Substituted Benzenes via NHC-Catalyzed Reactions of Carboxylic Esters



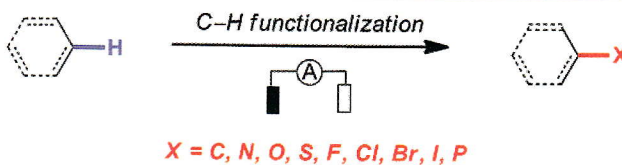
Jichang Wu, Chengli Mou,\* Yonggui Robin Chi\*

A carbene-catalyzed ester activation reaction for the synthesis of multi-substituted benzenes is disclosed. Tetra-substituted benzene compounds are efficiently synthesized through this methodology.

## Recent Advances

338

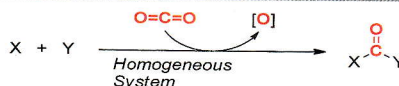
## Recent Advances in Organic Electrochemical C—H Functionalization



Organic electrochemistry has a rich history in organic synthesis and has been considered as a promising alternative to traditional chemical oxidants and reductants because it obviates the use of stoichiometric amount of dangerous and toxic reagents. In particular, the electrochemical C—H bonds functionalization is one of the most desirable approaches for the construction of carbon-carbon (C—C) and carbon-heteroatom (C—X) bonds.

Qi-Liang Yang, Ping Fang, Tian-Sheng Mei\*

353

Recent Advances in Homogeneous Carbonylation Using CO<sub>2</sub> as CO SurrogateCarbon dioxide is a sufficient and important carbon resource, and it has been widely used as a C1 building block in synthetic chemistry. Carbonylations with CO are important processes in industry. However, due to the toxicity of CO, its storage and transport are problematic. Attentions are gradually focused on using other safe reagents to be the CO surrogates in carbonylation reactions. This review focuses on the summary of recent developments in using CO<sub>2</sub> as a CO surrogate in homogeneous catalysis. Reductive processes by using H<sub>2</sub>, Si-H, alcohols etc., and redox-neutral processes are separately summarized.

Lu Wang, Wei Sun, Chao Liu