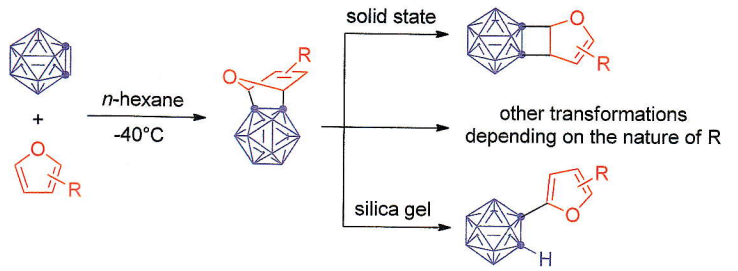
CJC Chinese Journal of Chemistry
中国化学 · An International Journal

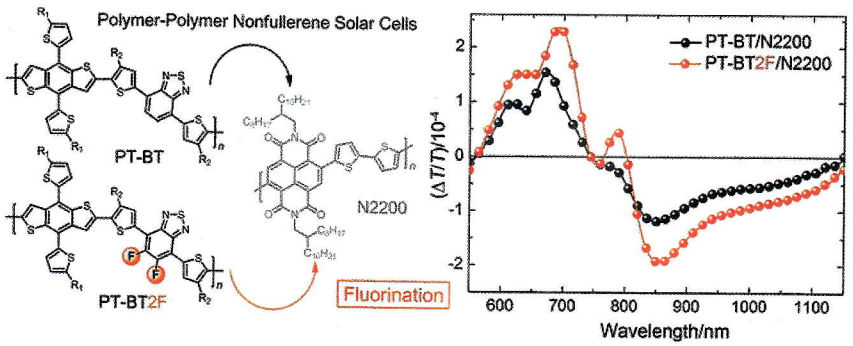
Pages 265–372 | Number 4 | Volume 36 | April 2018

Comprehensive Reports



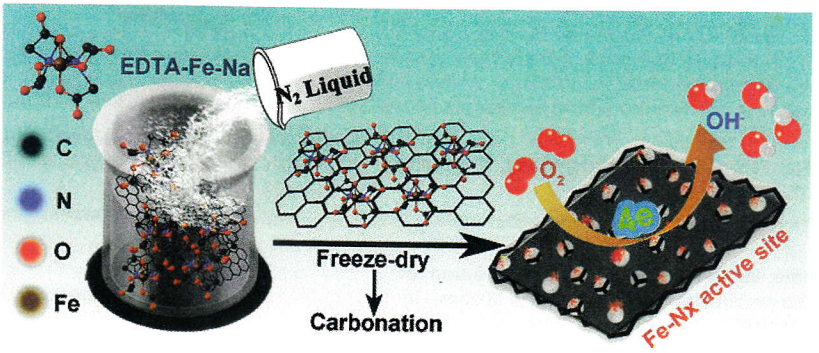
Rongyi Zhang, Yinggen Yuan, Zaozao Qiu,* Zuowei Xie*

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.



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

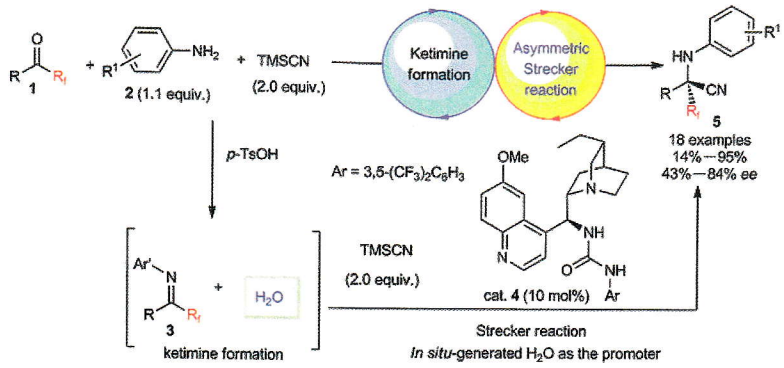
All-polymer blend employing fluorinated polymer PT-BT2F exhibits more efficient charge transfer between donor and acceptor compared to that employing non-fluorinated PT-BT/N2200 blend. As a result, all-PSCs unitizing PT-BT2F as donor and N2200 as acceptor output higher PCE than PT-BT/N2200 based device.

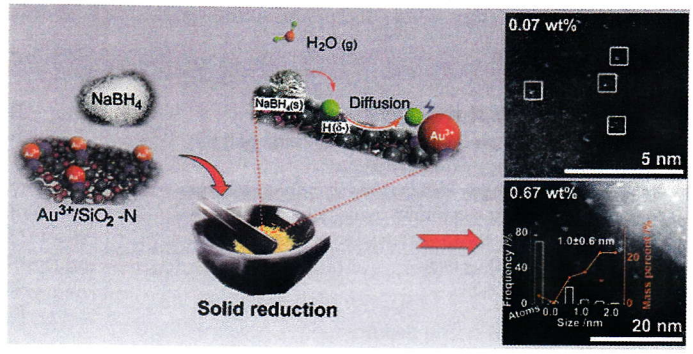


Zhi-Wen Chang, Fan-Lu Meng, Hai-Xia Zhong, Xin-Bo Zhang*

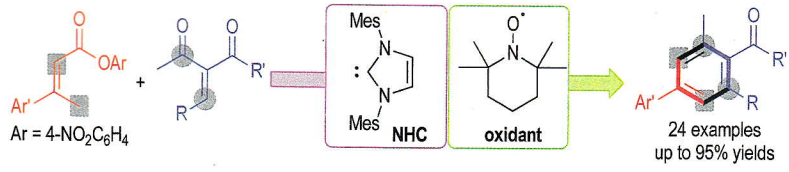
Iron-EDTA complex was applied and directly anchored on graphene using a novel liquid nitrogen assisted and extremely rapid freeze drying method firstly to realize high ORR performance in fuel cells.

Concise Reports



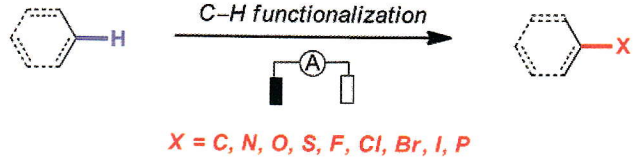


A simple milling-mediated solid reduction method was developed for the preparation of subnanometer-sized gold catalysts.

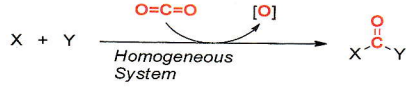


A carbene-catalyzed ester activation reaction for the synthesis of multi-substituted benzenes is disclosed. Tetra-substituted benzene compounds are efficiently synthesized through this methodology.

Recent Advances



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.



Carbon 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_2 as a CO surrogate in homogeneous catalysis. Reductive processes by using H_2, Si-H, alcohols *etc.*, and redox-neutral processes are separately summarized.

