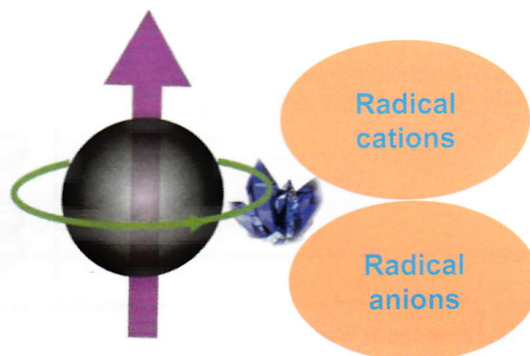


Chemistry Authors Up Close

573
Isolable Radical Ions of Main-Group Elements:
Structures, Bonding and Properties

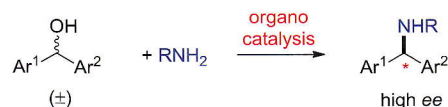


Gengwen Tan, Xinping Wang*

This Account summarizes the recent work of Wang group on isolable radical ions of main-group elements.

Breaking Reports

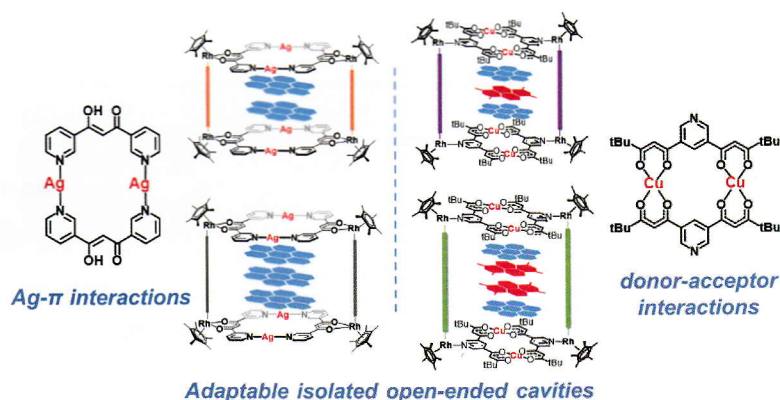
587
Organocatalytic Enantioselective Synthesis of
Chiral Diarylmethylamines from Racemic Alco-
hols



An organocatalytic approach for direct conversion of racemic diarylmethanols to valuable chiral diarylmethylamines is described. Different from the previously reported elegant “borrowing hydrogen” approach, the present process employs a distinct formal S_N1 strategy, thereby leading to complementary features on reaction scope and catalytic system. This new approach enjoys excellent enantioselectivity, mild conditions, broad scope, and easy derivatization of products. Mechanistically, control experiments also provided important insights into some notable features, such as substrate kinetic resolution and reversibility as well as the critical role of the *ortho*-hydroxy group in the substrate.

Min Chen, Yaodong Han, Dengke Ma, Yong Wang, Zengwei Lai, Jianwei Sun*

594
Control of Heterometallic Three-Dimensional
Macrocycles with Aromatic Stacks in Tunable
Host Cavities



Wen-Xi Gao, Qi-Jia Fan, Yue-Jian Lin, Guo-Xin Jin*

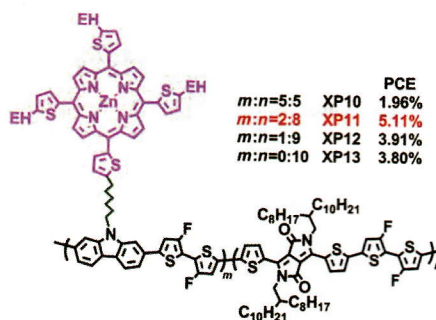
Two sets of heterometallic hosts with analogous open-ended cavities were demonstrated to self-fine-tune to encapsulate multi-heteroguest arrays *via* different interactions.

Comprehensive Reports

599

Synthesis and Photovoltaic Properties of the Copolymers Based on Carbazole with Tetrathiophene Porphyrin Side Chains Linked by a Flexible Alkyl-interval

Haibin Xiao, Yanghua Deng, Jingjun Yuan, Ping Gao,* Bin Zhao,* Songting Tan

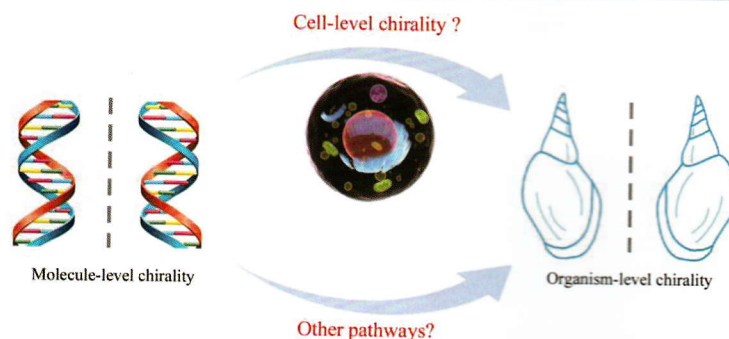


Four copolymers based on DPP and carbazole with tetrathiophene porphyrin (TTP) side chains linked by a flexible alkyl-interval were synthesized for polymer solar cells. The results showed that XP11 with the ratio (2/8) of TTP/DPP possesses the best PCE of 5.11%.

605

Left-Right Symmetry or Asymmetry of Cells on Stripe-Like Micropatterned Material Surfaces

Yiwen Hu, Xiang Yao, Qiong Liu, Yi Wang, Ruili Liu, Shuquan Cui, Jiandong Ding*

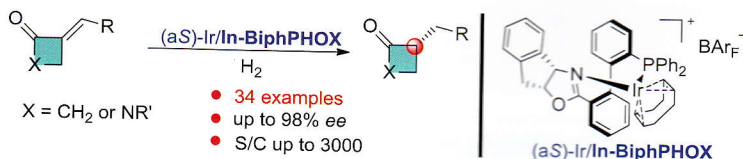


Concise Reports

612

Ir-Catalyzed Asymmetric Hydrogenation of α -Alkylidene β -Lactams and Cyclobutanones

Jingzhao Xia, Yu Nie, Guoqiang Yang, Yangang Liu, Ilya D. Gridnev, Wanbin Zhang*

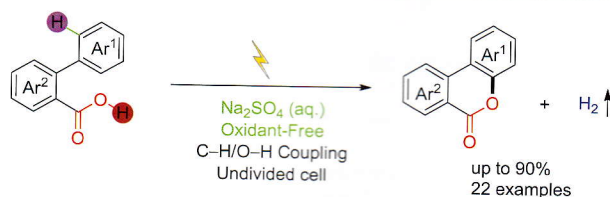


An asymmetric hydrogenation of α -alkylidene β -lactams and cyclobutanones was developed using the Ir complex of an axially-unfixed biphenyl phosphine-oxazoline ligand as a catalyst. The desired optically active four-membered ring carbonyl compounds were obtained with excellent enantioselectivities.

619

Electrochemical Intramolecular C—H/O—H Cross-Coupling of 2-Arylbenzoic Acids

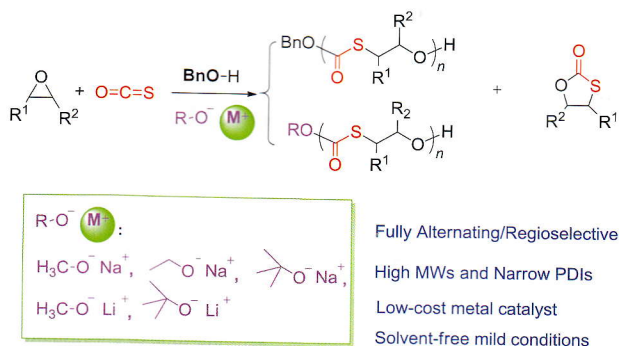
Ailong Shao, Na Li, Yong Gao, Jirui Zhan, Chien-Wei Chiang,* Aiwen Lei*



625

Anionic Copolymerization of Carbonyl Sulfide with Epoxides via Alkali Metal Alkoxides

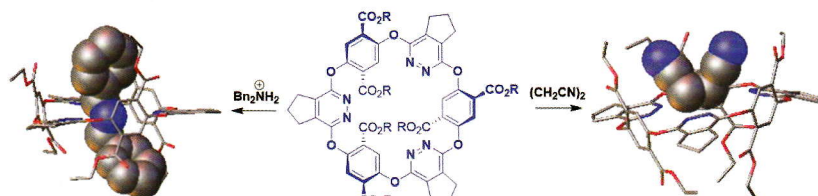
Cheng-Jian Zhang, Jia-Liang Yang, Lan-Fang Hu, Xing-Hong Zhang*



630

Synthesis of O₆-Corona[3]arene[3]pyridazines and Their Molecular Recognition Property in Organic and Aqueous Media

Yao Lu, Dong-Dong Liang, Zhan-Da Fu, Qing-Hui Guo, Mei-Xiang Wang*

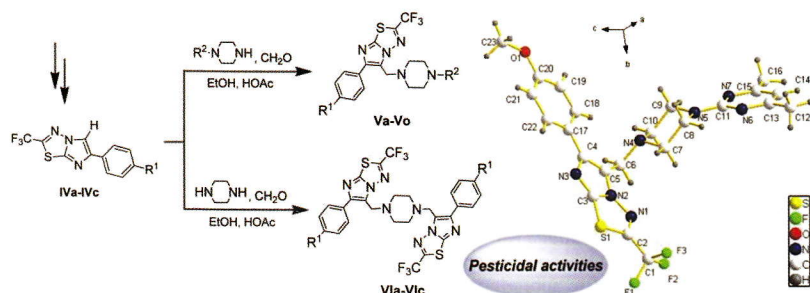


Lipophilic and hydrophilic O₆-corona[3]arene[3]pyridazines, which were synthesized from readily available O₆-corona[3]arene[3]tetrazines, acted as versatile and selective macrocyclic hosts to form complexes with ammonium guests in organic and aqueous media, respectively, with association constants ranging from $(2.96 \pm 0.10) \times 10^4$ to $(2.53 \pm 0.33) \times 10^5$ L·mol⁻¹.

635

Synthesis, Structure and Biological Activities of Novel 2-(Trifluoromethyl)-6-arylimidazo[2,1-b]-[1,3,4]-thiadiazole (bis-)Mannich Base Derivatives Containing Substitutedpiperazine Moiety

Yan Zhang, Zhengming Li, Haibin Song, Baolei Wang*

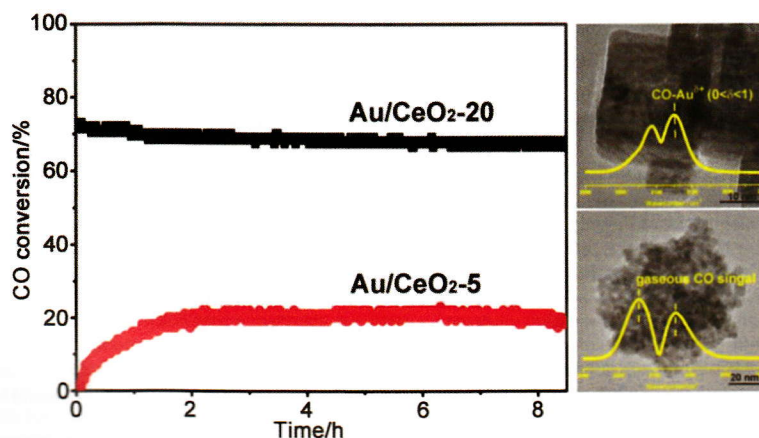


The synthesis, structures and pesticidal activities of eighteen novel piperazine-containing imidazo-thiadiazole (bis-)Mannich bases were studied.

639

Nanoceria Supported Gold Catalysts for CO Oxidation

Zhao Jin, Yang-Yang Song, Xin-Pu Fu, Qi-Sheng Song, Chun-Jiang Jia*



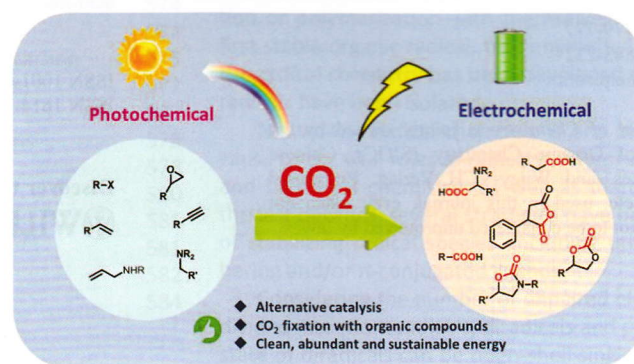
Au⁵⁺ ($0 < \delta < 1$) is more important than Au³⁺ to contribute the catalytic activity of Au/CeO₂ for CO oxidation reaction.

Recent Advances

644

Photochemical and Electrochemical Carbon Dioxide Utilization with Organic Compounds

Yu Cao, Xing He, Ning Wang, Hong-Ru Li, Liang-Nian He*



The current approaches for the photochemical and electrochemical carbon dioxide fixation with organic compounds are summarized in this mini-review.