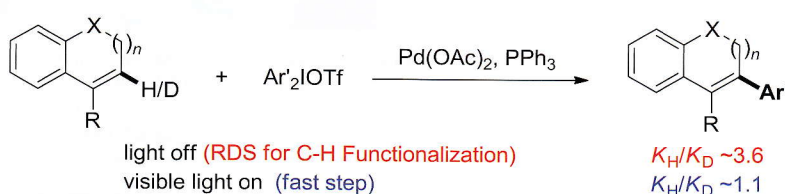


Breaking Reports

11

Visible Light Accelerated Vinyl C–H Arylation in Pd-Catalysis: Application in the Synthesis of *ortho* Tetra-substituted Vinylarene Atropisomers

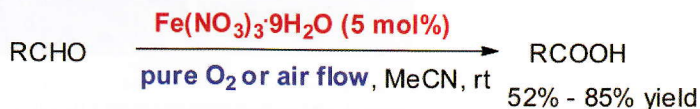


Jia Feng, Bin Li, Julong Jiang, Mingkai Zhang, Wenbai Ouyang, Chunyu Li, Yao Fu,* Zhenhua Gu*

Palladium-catalyzed vinyl C–H functionalization with diaryliodonium was promoted by the irradiation of visible light. Under darkness the C–H activation step is the rate determining step, and kinetic isotope effect (KIE) is around 3.6. With the aid of visible light, the C–H activation step was significantly accelerated and KIE was changed to 1.1.

15

Iron-Catalyzed Aerobic Oxidation of Aldehydes: Single Component Catalyst and Mechanistic Studies



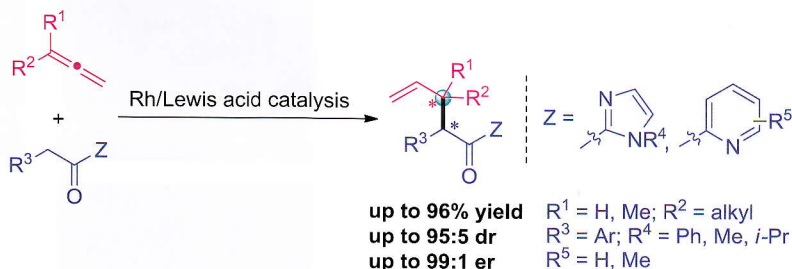
- 1) single component iron catalyst
- 2) room temperature
- 3) tolerating useful functional groups

Xingguo Jiang, Yizhan Zhai, Junyu Chen, Yulin Han, Zheng Yang, Shengming Ma*

Comprehensive Reports

20

Rh/Lewis Acid Catalyzed Regio-, Diastereo- and Enantioselective Addition of 2-Acyl Imidazoles with Allenes

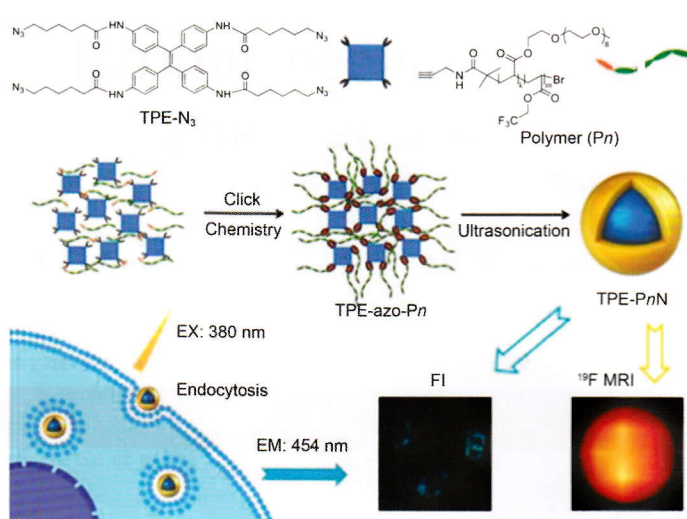


- # High regio-, diastereo- and enantioselectivity
- # Atom-economic asymmetric allylic alkylation
- # Access to acyclic all carbon quaternary centres

A highly regio-, diastereo- and enantioselective addition of 2-acyl imidazoles or 2-acyl pyridines with allenes promoted by Rh/Lewis acid synergistically catalytic system is described which leads to the formation of the branched allylic alkylated products including acyclic quaternary all-carbon stereogenic centres in good yields with good to excellent diastereo- and enantioselectivities.

Pranjal P. Bora, Gui-Jun Sun, Wei-Feng Zheng, Qiang Kang*

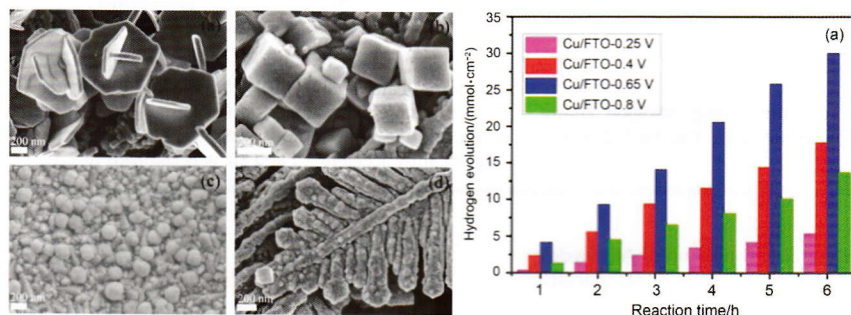
25
Organic Nanoprobes for Fluorescence and ^{19}F
Magnetic Resonance Dual-Modality Imaging



A polymeric nanocomposite probe for simultaneous fluorescence and ^{19}F magnetic resonance dual-modality imaging has been fabricated by means of integrating the hydrophobic fluorescence organic core with the hydrophilic fluorinated copolymer shell, which demonstrates high water stability, good biocompatibility, strong fluorescence and excellent ^{19}F MRI performance.

Minmin Xu, Chang Guo, Gaofei Hu, Suying Xu, Leyu Wang*

31
Morphology-controlled Electrodeposition of
Copper Nanospheres onto FTO for Enhanced
Photocatalytic Hydrogen Production

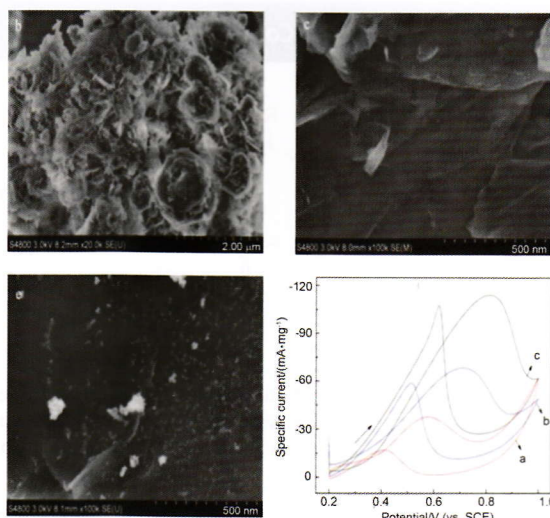


This manuscript describes a new kind of photocatalyst Cu/FTO prepared by electrodeposition method. The morphology of Cu on FTO can be nanoparticle, nanoslices or nanodendrites which varied with the depositing potential. Cu/FTO presented stable photocatalytic H_2 evolution ability. Electrodeposition potential and time have a significant effect on the amount of H_2 evolution.

Jieyun He, Heshan Feng, Ting Wang, Tingting Wang,* Heping Zeng*

Concise Reports

37
Enhanced Electrocatalytic Activity of Dual Tem-
plate Based Pt/Cu-zeolite A/graphene for
Methanol Electrooxidation



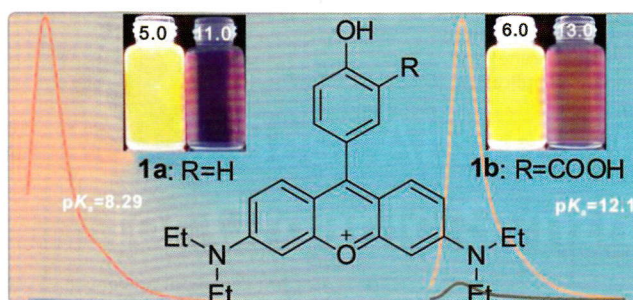
A novel Pt/Cu-zeolite A/graphene based electrocatalyst was successfully prepared by chemical reduction method for methanol electrooxidation. The upper and lower left are SEMs of Cu-ZEA, RGO and Pt/Cu-ZEA/RGO, respectively. The lower right is CVs of Pt/RGO/GCE (a), Pt/ZEA/RGO (b) and Pt/Cu-ZEA/RGO/GCE (c) at 0.5 V in 0.10 mol/L H_2SO_4 + 0.50 mol/L CH_3OH solution.

Shuai Wang, Ping He,* Mingqian He, Faqin Dong, Huanhuan Liu, Hong Lei, Xiaojuan Zhang, Shaoying He

42

Fluorescence Responses of the Protonation and Deprotonation Processes between Phenolate and Phenol within Rosamine

Ling Yang, Jinyun Niu, Yanhua Zhan, Yujie Xu,*
Ru Sun, Jianfeng Ge*

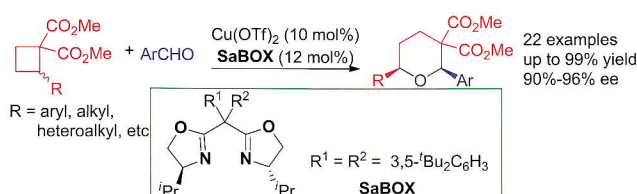


Two rosamine-based pH probes **1a** and **1b** exhibit near OFF-ON fluorescence responses around 550–750 nm towards the hydrogen ions. Protonation and deprotonation processes between phenolate and phenol within rosamine were evaluated. The pK_a of the probe **1a** is 8.29, while that of the probe **1b** increases to 12.1 because of the hydrogen bond inside it. And probe **1a** was found to be a mitochondria biomarker for HeLa and Ges-1 cells.

47

Copper Catalyzed Asymmetric [4+2] Annulations of D-A Cyclobutanes with Aldehydes

Jiang-Lin Hu, Li Zhou, Lijia Wang, Zuwei Xie,*
Yong Tang*

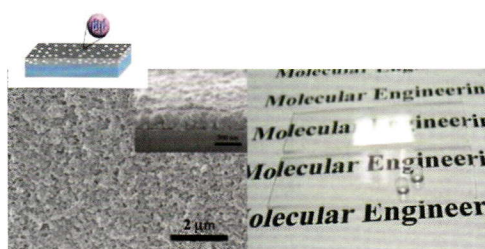


Copper catalyzed enantioselective [4+2] annulations of D-A cyclobutanes and aldehydes have been developed, leading to the corresponding products with various functional groups in 41%–99% yields with >99/1 dr and 90%–96% ee.

51

Layer-by-layer Approach to Superhydrophobic Zeolite Antireflective Coatings

Jianan Zhang, Jihong Yu*

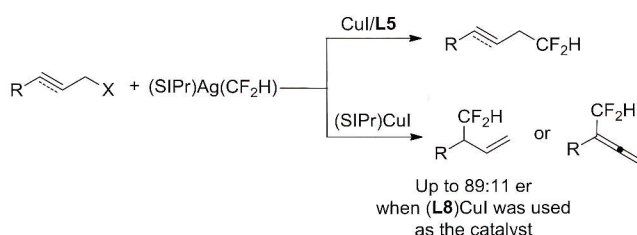


Zeolite antireflective (ZAR) coatings have been successfully prepared by LBL assembly method with silicalite-1 nano-crystals and polyelectrolyte, followed by calcination to eliminate the organic component. A superhydrophobic ZAR coating can be obtained by chemical modification. The present work demonstrates that zeolites are excellent materials for highly transparent superhydrophobic coatings.

55

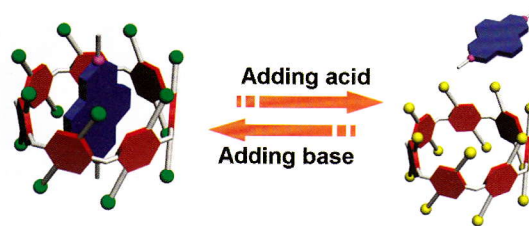
Ligand-Controlled Copper-Catalyzed Highly Regioselective Difluoromethylation of Allylic Chlorides/Bromides and Propargyl Bromides

Yang Gu, Changhui Lu, Yucheng Gu, Qilong Shen*



Highly regiodivergent copper-catalyzed allylic/propargylic difluoromethylation reactions by employing different ligands are described. When 5,6-dimethyl-1,10-phenanthroline was used as the ligand, exclusively α-difluoromethylated products were obtained, while γ-selective difluoromethylated products were generated when *N*-heterocyclic carbene-SIPr was used as the ligand. Likewise, high α- vs. γ-selectivities were achieved in the presence of similar copper catalysts for the reactions of propargyl bromides.

59
pH-Responsive Host–Guest Complexation between a Water-soluble Pillar[7]Arene and a 2,7-Diazapyrenium Salt and Its Application in Controllable Self-assembly

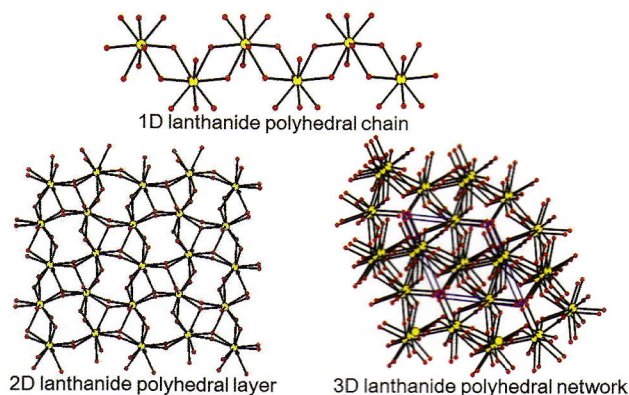


The host–guest complexation between a water-soluble pillar[7]arene and a 2,7-diazapyrenium salt was studied. Based on this novel recognition motif, a pH-responsive supra-amphiphile was successfully fabricated. Its controllable self-assembly in water was also investigated.

Zhengtao Li, Jie Yang,* Feihe Huang*

Critical Review

63
Lanthanide Inorganic Solids Based on Main Group Borates and Oxyanions of Lone Pair Cations



Lanthanide borates containing Ga(III), Ge(IV), Sb(V) or Te(VI), and lanthanide oxyanions of lone pair cations, such as I(V), Se(IV) and Te(IV), were reviewed. The connectivity style of the Ln polyhedra is miscellaneous. Compounds with multifunction, such as magnetic, photoluminescent and SHG properties, were found in these systems.

Fang Kong, Yunxiang Ma, Jianggao Mao*