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See Wei-Min He *et al.*, pp. 7983–7987.

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Inside cover
See Zongjie Dai *et al.*, pp. 7988–7997.

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TUTORIAL REVIEWS

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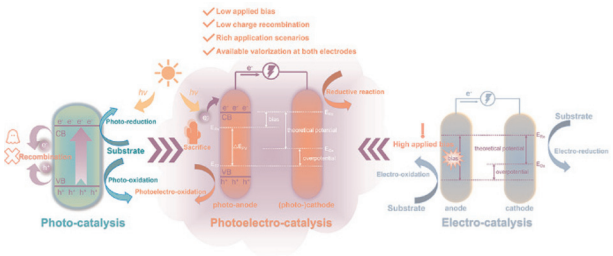
Sacrifice and valorization of biomass to realize energy exploitation and transformation in a photoelectrochemical way

Daobin Tang, Jianguo Liu,* Xinghua Zhang, Lungang Chen, Longlong Ma and Qi Zhang*



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Physico-chemical challenges on the self-assembly of natural and bio-based ingredients on hair surfaces: towards sustainable haircare formulations

Gustavo S. Luengo,* Fabien Leonforte, Andrew Greaves, Ramon G. Rubio and Eduardo Guzman*

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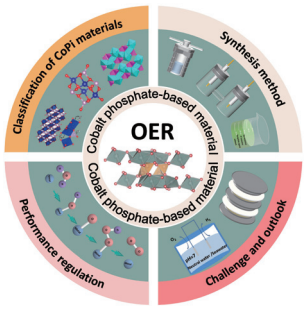
TUTORIAL REVIEWS

7883

Research status, opportunities, and challenges of cobalt phosphate based materials as OER electrocatalysts

Xingheng Zhang, Qi Hou, Shoufu Cao, Xiaojing Lin, Xiaodong Chen, Zhaojie Wang,* Shuxian Wei, Siyuan Liu, Fangna Dai and Xiaoqing Lu*



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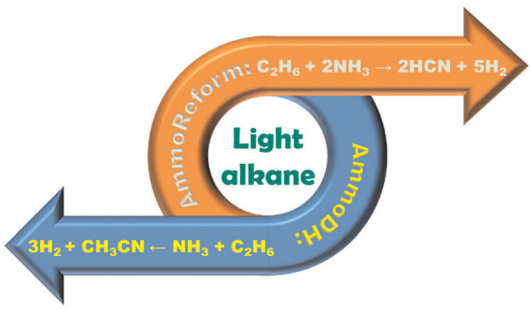
Ammonia-assisted reforming and dehydrogenation toward efficient light alkane conversion

Yizhi Xiang



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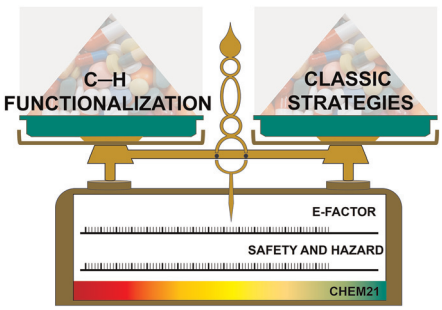
Classic *vs.* C–H functionalization strategies in the synthesis of APIs: a sustainability comparison

Francesco Ferlin, Giulia Brufani, Gabriele Rossini and Luigi Vaccaro*



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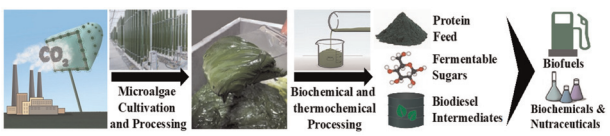
Potential of using microalgae to sequester carbon dioxide and processing to bioproducts

Venkatesh Balan,* James Pierson, Hasan Husain, Sandeep Kumar, Christopher Saffron and Vinod Kumar



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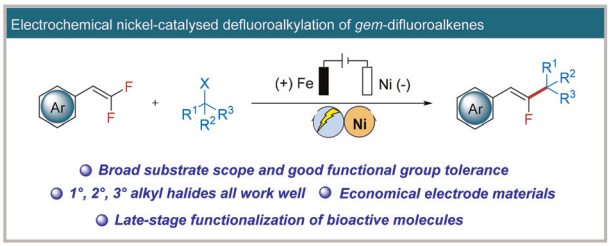

Electrochemical nickel-catalysed defluoroalkylation of *gem*-difluoroalkenes with alkyl halides

Yin Liu, Pengfei Li, Jun Tan, Guangsheng Kou, Dengke Ma* and Youai Qiu*

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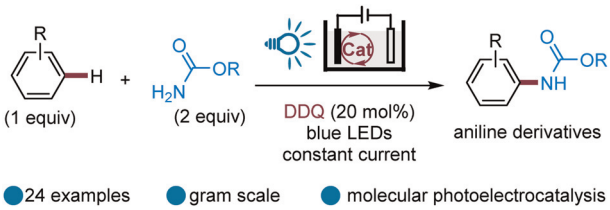

Photoelectrocatalytic C–H amination of arenes

Zhong-Wei Hou, Hong Yan, Jinshuai Song* and Hai-Chao Xu*

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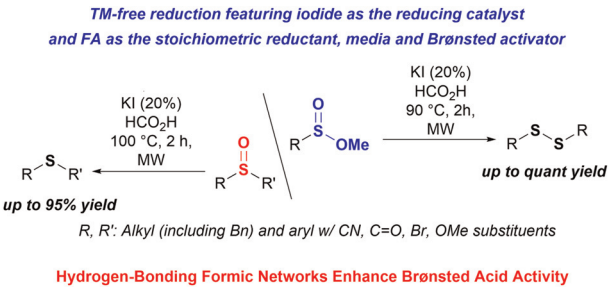

Introducing I^-/formic acid as a green reagent for the reduction of sulfinates and sulfoxides

J. Armando Luján-Montelongo,* Luis Javier García de la Cuesta, Alicia E. Cruz-Jiménez, Perla Hernández and Alberto Vela

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Fukun Cheng, Lulu Fan,* Qiyan Lv, Xiaolan Chen* and Bing Yu*

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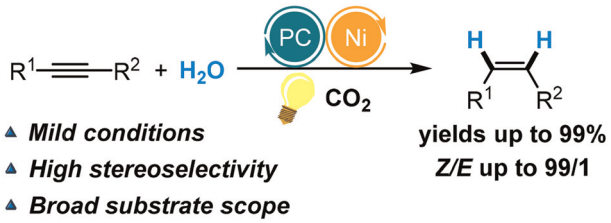
CO_2 promoted photoredox/Ni-catalyzed semi-reduction of alkynes with H_2O

Shenhao Chen and Chanjuan Xi*



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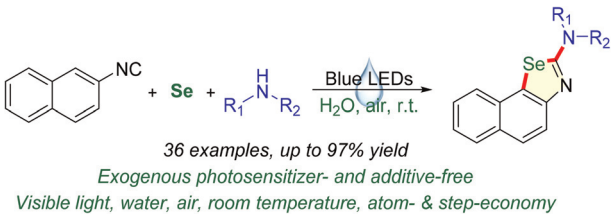
Photoinduced, additive- and photosensitizer-free multi-component synthesis of naphthoselenazol-2-amines with air in water

Hong-Tao Ji, Ke-Li Wang, Wen-Tao Ouyang, Qing-Xia Luo, Hong-Xia Li and Wei-Min He*



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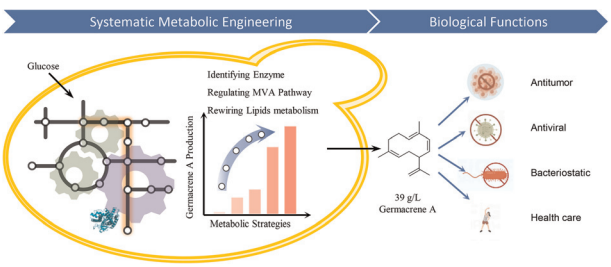
Reprogramming the metabolism of oleaginous yeast for sustainably biosynthesizing the anticarcinogen precursor germacrene A

Qi Liu, Ge Zhang, Liqiu Su, Pi Liu, Shiru Jia, Qinhong Wang and Zongjie Dai*



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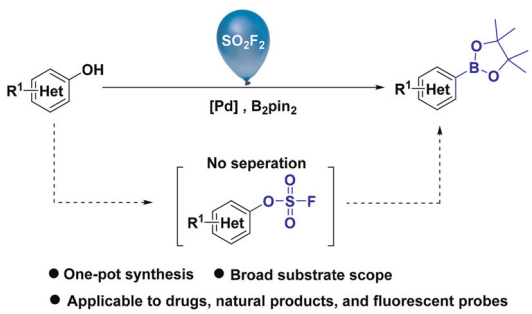
Borylation of phenols using sulfuryl fluoride activation

Zhengjun Chen, Yan Liu, Chunhua Zeng, Changyue Ren, Hongyu Li, Rajenahally V. Jagadeesh,* Zeli Yuan* and Xinmin Li*



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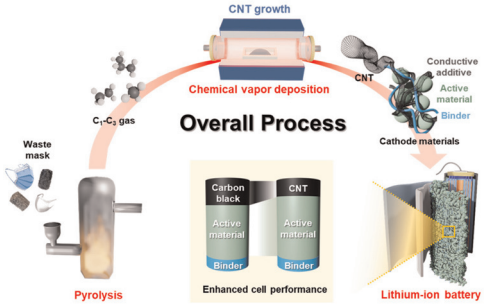

Upcycling of plastic waste into carbon nanotubes as efficient battery additives

Eonu Nam, Gyori Park, Ji Young Nam, Sooryun Park, Yoonjeong Jo, Jihun Kim, Byung Gwan Park, Kyungeun Baek, Seok Ju Kang, Ho Won Ra, Youngsoo Park, Myung Won Seo,* Kyung Jin Lee* and Kwangjin An*

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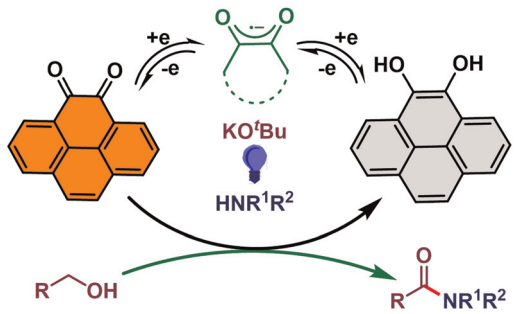

Organophotocatalytic dehydrogenative preparation of amides directly from alcohols

Shyamali Maji, Monojit Roy, Kanchan Shaikh and Debashis Adhikari*

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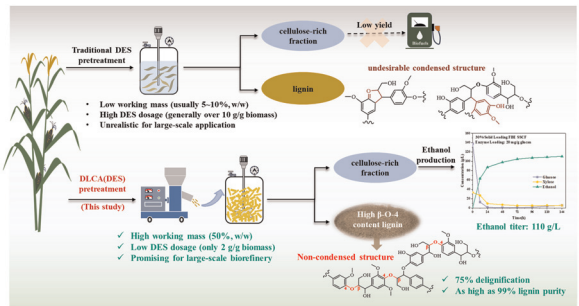

Densification pretreatment with a limited deep eutectic solvent triggers high-efficiency fractionation and valorization of lignocellulose

Guannan Shen, Xinchuan Yuan, Yin Cheng, Sitong Chen, Zhaoxian Xu and Mingjie Jin*

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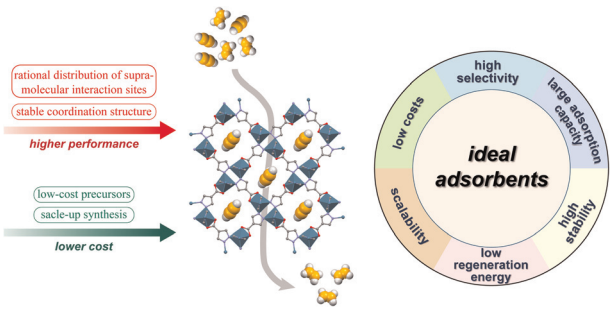

A scalable stable porous coordination polymer synthesized from low-cost precursors for efficient C_2H_2/C_2H_4 separation

Hengcong Huang, Yifan Gu, Luyao Wang, Tao Jia, Susumu Kitagawa and Fengting Li*

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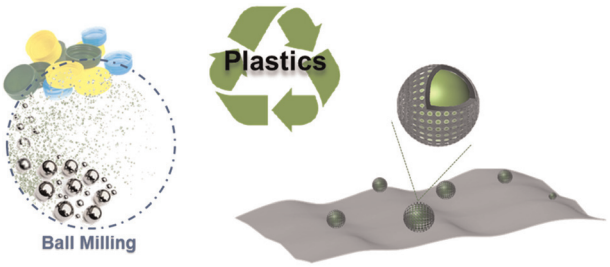
Core–shell construction of metal@carbon by mechanochemically recycling plastic wastes: towards an efficient oxygen evolution reaction

Jiahua Zhao, Qiang Niu, Junjun Zhang* and Pengfei Zhang*



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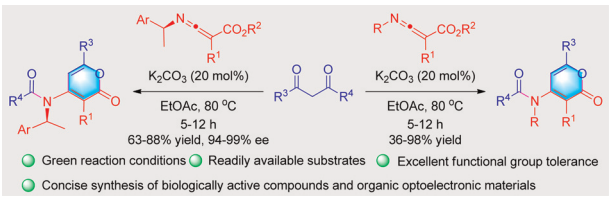
Green and effective synthesis of multisubstituted α-pyrones *via* K_2CO_3 catalyzed formal insertion of ketenimines into C(CO)–C bonds of 1,3-diketones

Jian Luo, Ai-Qing Zhong, Jia-Hao Qiu, Xiong-Wei Liu,* You-Ping Tian, Bao-Hua Zhang,* Guo-Shu Chen, Wei Shu and Yun-Lin Liu*



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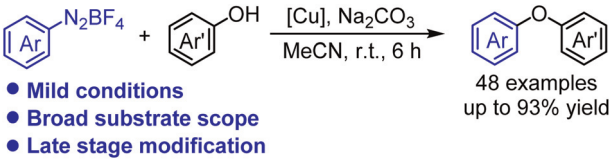
Copper-catalyzed *O*-arylation of phenols with diazonium salts

Xin Fang, Chengning Qi, Xiangqian Cao, Zhi-Gang Ren, David James Young and Hong-Xi Li*



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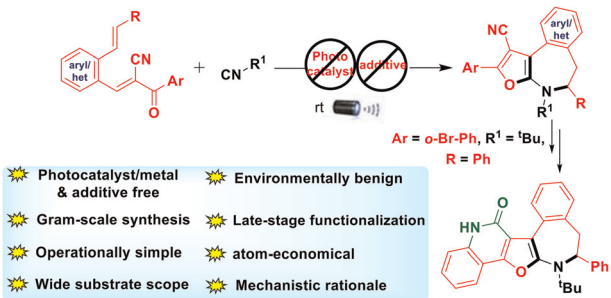
Photocatalyst- and transition-metal-free syntheses of furan-fused dihydroazepines by visible light

Babasaheb Sopan Gore,* Chiao-Ying Kuo and Jeh-Jeng Wang*



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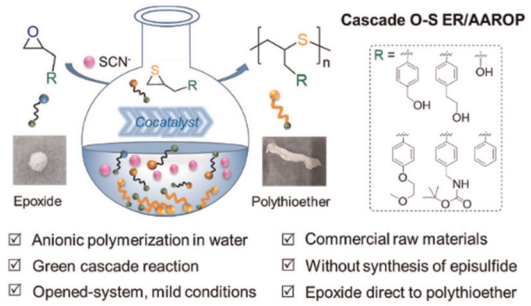

Green synthesis of well-defined linear poly(hydroxyl thioether) direct from epoxide in water

Ying Quan, Cuihong Ma, Qiancai Liu, Zhiying Han, Huijing Han, Xiaojuan Liao,* Ruyi Sun* and Meiran Xie*

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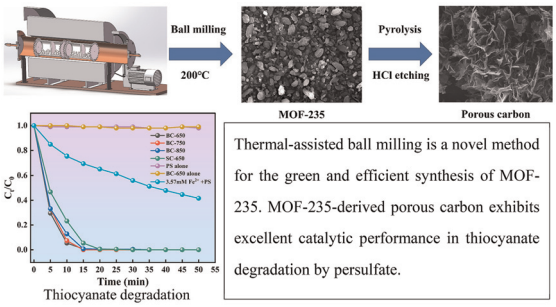

Green and efficient synthesis of hierarchical porous carbon derived from MOF-235 for catalytic degradation of thiocyanate

Yang Yang, Binchuan Li, Daxue Fu, Jianshe Chen, Shuang Cui, Xiaocai He, Kuiren Liu, Shicheng Wei, Da Li and Qing Han*

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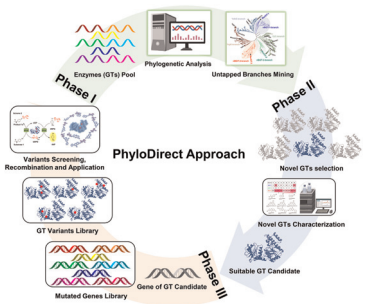

A phylogeny-based directed evolution approach to boost the synthetic applications of glycosyltransferases

Peng Zhang, Yu Ji,* Shuaiqi Meng, Zhongyu Li, Dennis Hirtz, Lothar Elling and Ulrich Schwaneberg*

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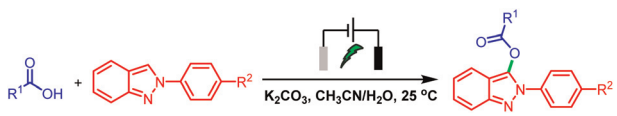

Electrochemical C3 acyloxylation reactions of 2*H*-indazoles with carboxylic acids *via* C(sp^2)–O coupling

Xin Liu, Yibin Hu, Yuanbin She, Meichao Li* and Zhenlu Shen*

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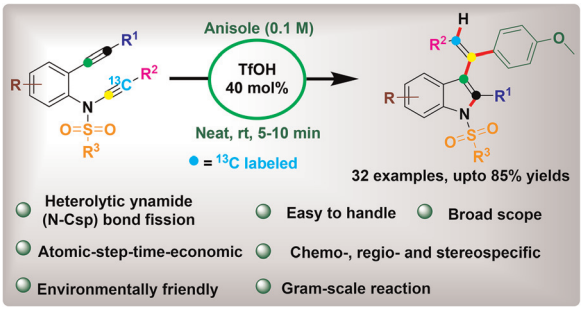
Green and rapid acid-catalyzed ynamide skeletal rearrangement and stereospecific functionalization with anisole derivatives

Mohana Reddy Mutra,* T. L. Chandana, Yun-Jou Wang and Jeh-Jeng Wang*



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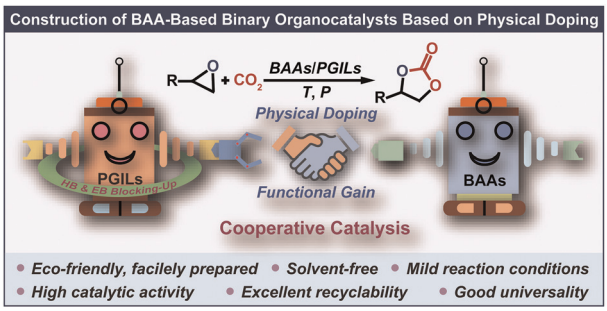
Functionally enhanced basic amino acid-based binary organocatalysts based on physical doping for efficient coupling of CO_2 with epoxides

Fan Wang, Congxia Xie, Hongbing Song and Xin Jin*



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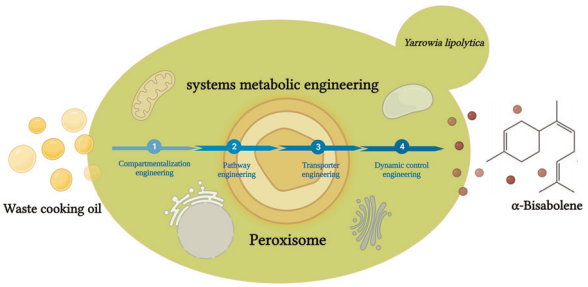
Biosynthesis of α-bisabolene from low-cost renewable feedstocks by peroxisome engineering and systems metabolic engineering of the yeast *Yarrowia lipolytica*

Baixiang Zhao, Yahui Zhang, Yaping Wang, Zhihui Lu, Lin Miao, Shuhui Wang, Zhuo Li, Xu Sun, Yuqing Han, Sicheng He, Ziyuan Zhang, Dongguang Xiao, Cuiying Zhang,* Jee Loon Foo,* Adison Wong* and Aiqun Yu*



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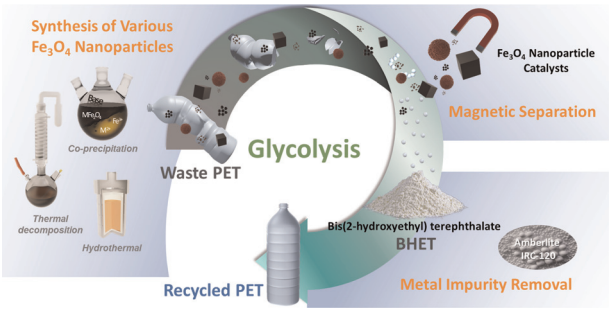
Efficient Fe_3O_4 nanoparticle catalysts for depolymerization of polyethylene terephthalate

Yoonjeong Jo, Eun Jeong Kim, Jueun Kim and Kwangjin An*



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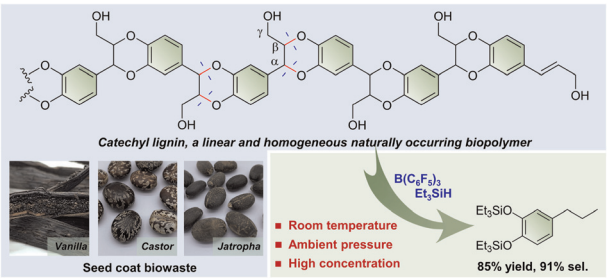

Organoborane-catalysed reductive depolymerisation of catechyl lignin under ambient conditions

Shihao Su, Fan-shu Cao, Shuizhong Wang,* Qingru Shen, Gen Luo,* Qiang Lu and Guoyong Song*

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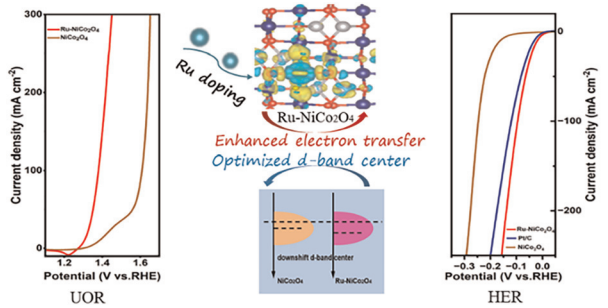

Elaborately tailored $NiCo_2O_4$ for highly efficient overall water splitting and urea electrolysis

Yamei Wang, Lanli Chen, Huaming Zhang,* Muhammad Humayun, Junhong Duan, Xuefei Xu, Yanjun Fu, Mohamed Bououdina and Chundong Wang*

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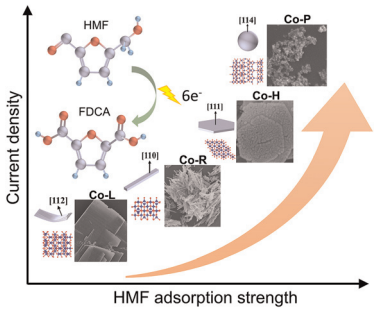

Facet-dependent electrocatalytic oxidation activity of Co_3O_4 nanocrystals for 5-hydroxymethylfurfural

Zhenchuan Zhang, Zhaohui Yang, Chenyang Wei, Zhenghui Liu and Tiancheng Mu*

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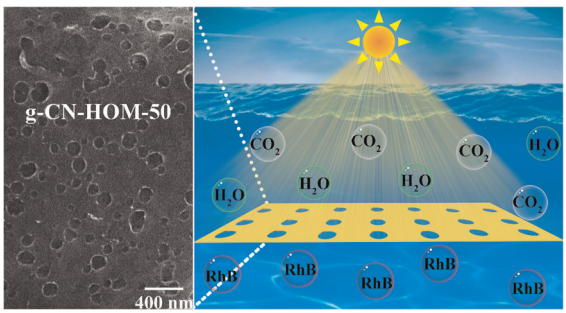

Controllable construction of graphitic carbon nitride with highly-ordered macropores for boosting photodegradation

Ruxia Li, Xiaoxiang Fan, Jianqi Meng, Jie Wu, Jinjuan Zhao, Ruifa Jin, Honglei Yang* and Shuwen Li*

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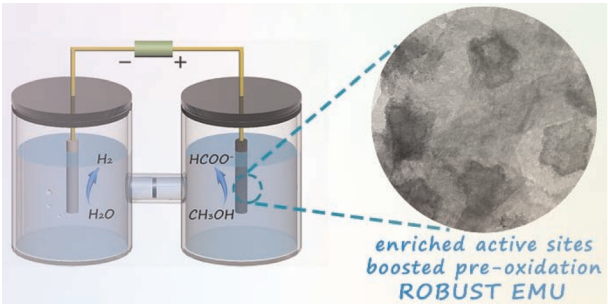
Tailoring the catalytically active sites in Co-based catalysts for electrochemical methanol upgrading to produce formate

Yameng Wang, Xue Yang, Kexin Wang, Zimeng Liu, Xiaoning Sun, Jinyue Chen, Shanshan Liu, Xu Sun, Junfeng Xie* and Bo Tang*



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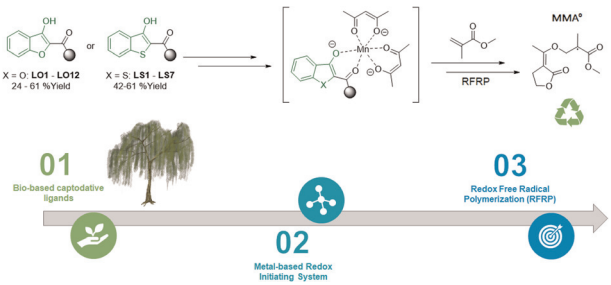
Bio-based captodative ligands for redox polymerization of Elium® thermoplastic composites under mild conditions

Nicolas Giacoletto, Marie Le Dot, Hizia Cherif, Fabrice Morlet-Savary, Bernadette Graff, Valérie Monnier, Didier Gigmes, Frédéric Dumur, Hamza Olleik, Marc Maresca, Pierre Gerard, Malek Nechab* and Jacques Lalevée*



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Feedstock agnostic upcycling of industrial mixed plastic from shredder residue pragmatically through a composite approach

Kanjanawadee Singkronart, Andre Gaduan, Siti Rosminah Shamsuddin, Keeran Ward and Koon-Yang Lee*

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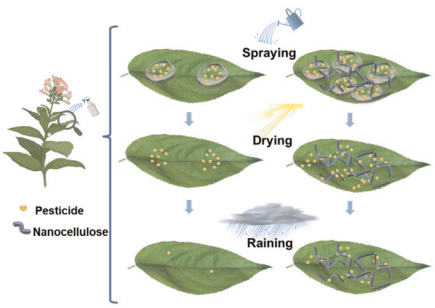
Effectively enhancing topical delivery of agrochemicals onto plant leaves with nanocelluloses

Shangxu Jiang, Peng Li,* Li Li, Nasim Amiralian, Divya Rajah and Zhi Ping Xu*



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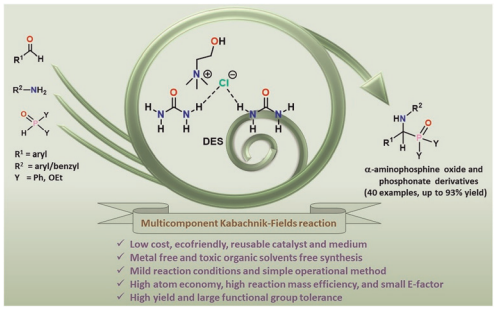

Synthesis of α-aminophosphorous derivatives using a deep eutectic solvent (DES) in a dual role

Susmita Mandal, Rajrani Narvariya, Shiva Lall Sunar, Ishita Paul, Archana Jain* and Tarun K. Panda*

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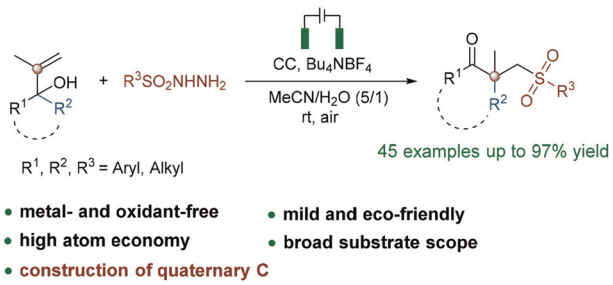


Electrochemical synthesis of γ-keto sulfones containing a β-quaternary carbon center *via* 1,2-migration

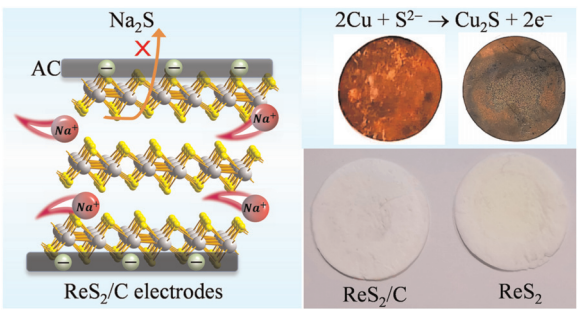
Wen Xia, Yawen Yang, Xiaohui Zhang, Liangzhen Hu* and Yan Xiong*

8280

Catalyst-free defluorinative alkylation of trifluoromethyls

Yan Huang, Yuan-Cui Wan, Yu Shao, Le-Wu Zhan, Bin-Dong Li* and Jing Hou*

8286



Carbon-coated ReS_2 hierarchical nanospheres to inhibit polysulfide dissolution in ether-based electrolytes for high-performance Na-ion batteries

Jun Xu,* Xuhui Zhang, Fang Cao, Zilin Mao, Junbao Jiang, Junwei Chen, Yan Zhang* and Kun Xing*