

Green Chemistry

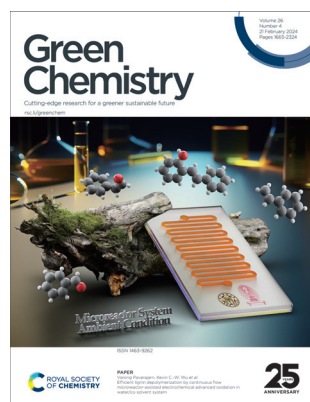
Cutting-edge research for a greener sustainable future

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See Varong Pavarajarn, Kevin C.-W. Wu *et al.*, pp. 1889–1900.

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Inside cover

See Seul-Yi Lee, Soo-Jin Park *et al.*, pp. 1901–1909.

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CRITICAL REVIEWS

1682

Basic comprehension and recent trends in photoelectrocatalytic systems

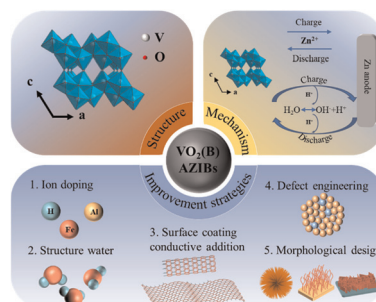
Jie Yu,* Jesús González-Cobos, Frederic Dappozze, Philippe Vernoux, Angel Caravaca* and Chantal Guillard*



1709

One-dimensional tunnel VO₂(B) cathode materials for high-performance aqueous zinc ion batteries: a mini review of recent advances and future perspectives

Lingjiang Kou, Yong Wang, Jiajia Song,* Taotao Ai,* Wenhui Li, Panya Wattanapaphawong and Koji Kajiyoshi*



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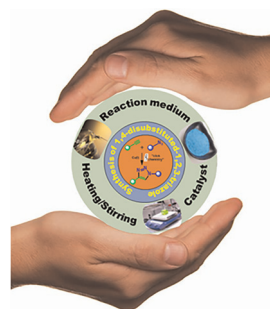
Fundamental questions
Elemental answers

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Green synthesis of 1,4-disubstituted 1,2,3-triazoles: a sustainable approach

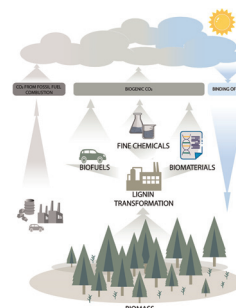
Sachin Kumar, Bajrang Lal and Ram Kumar Tittal*



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Biotransformation of lignin into 4-vinylphenol derivatives toward lignin valorization

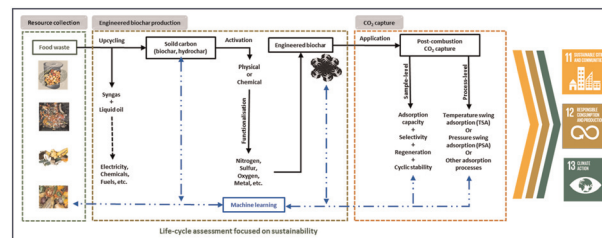
Ruo-Ying Liu, Zhi-Hua Liu,* Bing-Zhi Li* and Ying-Jin Yuan



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Sustainable valorisation of food waste into engineered biochars for CO₂ capture towards a circular economy

Wenhui Jia, Shuangjun Li, Junyao Wang, Jonathan T. E. Lee, Carol Sze Ki Lin, Ondřej Mašek, Huiyan Zhang and Xiangzhou Yuan*

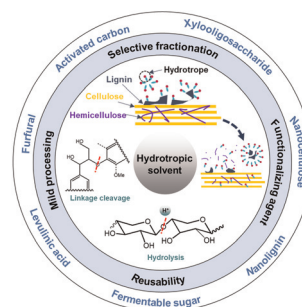


TUTORIAL REVIEWS

1806

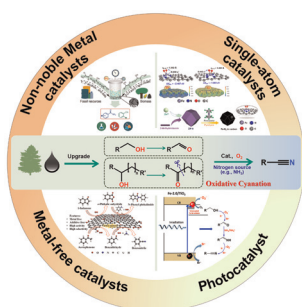
Recent advances in hydrotropic solvent systems for lignocellulosic biomass utilization

Soyeon Jeong, Jiae Ryu, Qiang Yang,* J. Y. Zhu* and Chang Geun Yoo*



TUTORIAL REVIEWS

1831



Thermo-/photo-catalysts for aerobic oxidative cyanation of diverse oxygen-containing feedstocks

Jie He, Peng Zhou, Shiyong Zhang, Jason Chun-Ho Lam, Yuhe Liao and Zehui Zhang*

1846

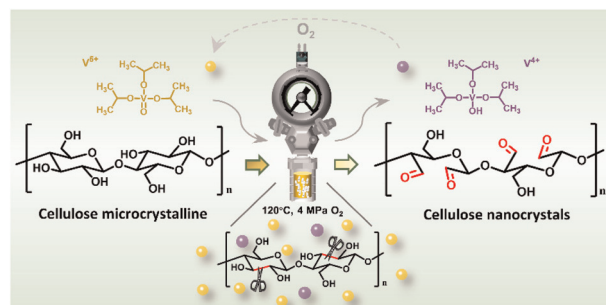


Enantioselective cross-dehydrogenative coupling enabled by organocatalysis

Quanbin Jiang, Jie Luo and Xiaodan Zhao*

COMMUNICATIONS

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Preparation of aldehyde-functionalized cellulose nanocrystals via aerobic oxidation of cellulose in a recyclable triisopropoxy vanadium oxidation system

Xianqing Lv, Chengke Zhao, Xiwei Zhang, Zhuotong Wu* and Li Shuai*

1883



Synthesis of 3-arylino-2-polyhydroxyalkyl-substituted indoles from unprotected saccharides and anilines

Jilai Wu, Likai Zhou, Song Xie, Chao Wei, Xiaoliu Li and Hua Chen*

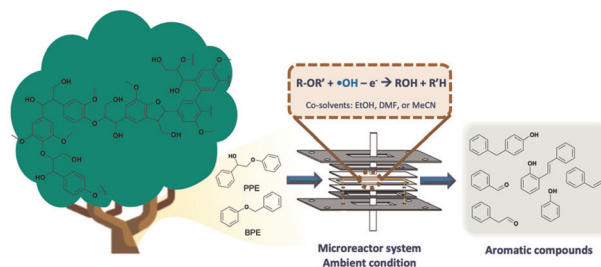


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1889

Efficient lignin depolymerization by continuous flow microreactor-assisted electrochemical advanced oxidation in water/co-solvent system

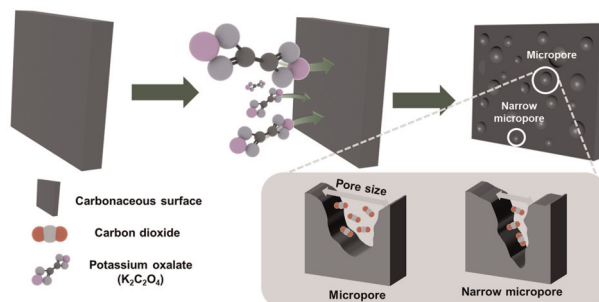
Lalida Waura-angkura, Babasaheb M. Matsagar, Kevin Lee, Varong Pavarajarn* and Kevin C.-W. Wu*



1901

Valorization of waste coffee grounds into microporous carbon materials for CO₂ adsorption

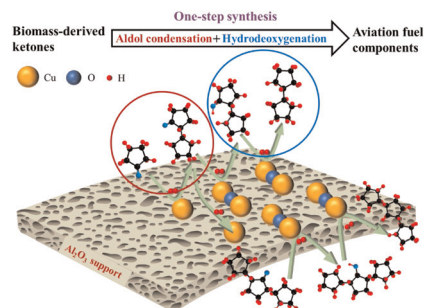
Choong-Hee Kim, Seul-Yi Lee* and Soo-Jin Park*



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The synergistic effect of Cu⁰ and Cu⁺ for one-step synthesis of aviation biofuel from biomass-derived ketones

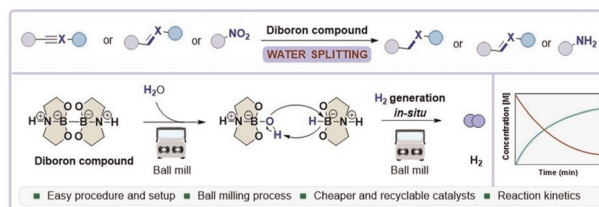
Tan Li, Jing Su, Linjia Yin, Xiangkun Zhang, Cong Wang, Xinbao Li,* Jing Zhang and Kaige Wang*



1927

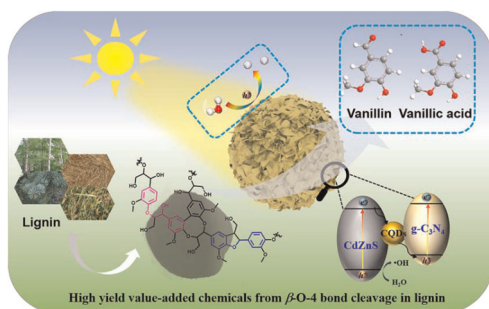
Mechanically accelerated catalytic hydrogenation: correlating physical state, reaction rate, and interface area

Federico Cuccu, Francesco Basoccu, Claudia Fattuoni and Andrea Porcheddu*



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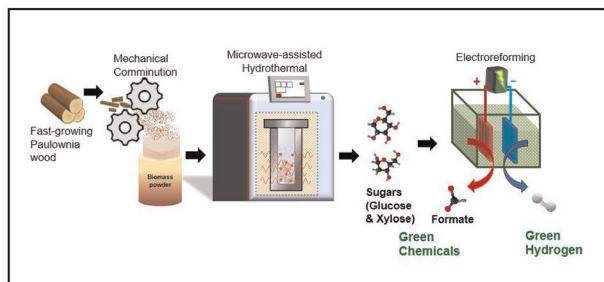
1935



Z-scheme heterojunction g-C₃N₄/CQD/CdZnS with high redox capability for enhancing visible light-driven photocatalytic depolymerization of lignin into aromatic monomers

Xutang Liu, Zhijie Jiang, Xiru Cao, Zhen Shen,*
Wei Zhao,* Fei Wang, Mingyu Cui and Chong Liang

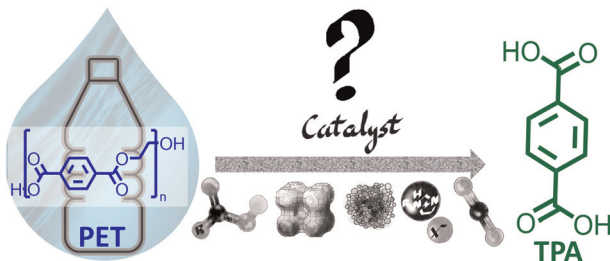
1949



Valorization of fast-growing Paulownia wood to green chemicals and green hydrogen

Li Quan Lee, Hu Zhao, Junyu Ge, Yan Zhou* and Hong Li*

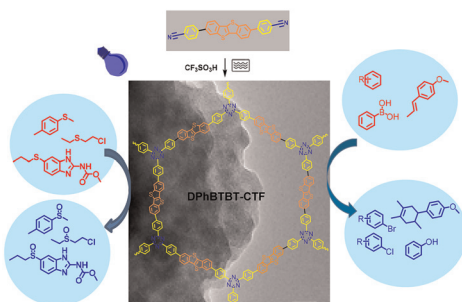
1964



Acid catalyst screening for hydrolysis of post-consumer PET waste and exploration of acidolysis

Patrícia Pereira, Phillip E. Savage* and Christian W. Pester*

1975



Unveiling the potential of a covalent triazine framework based on [1]benzothieno[3,2-*b*][1]benzothiophene (DPbBTBT-CTF) as a metal-free heterogeneous photocatalyst

M. Carmen Borrallo-Aniceto, Mercedes Pintado-Sierra,
Antonio Valverde-González, Urbano Díaz,
Félix Sánchez, Eva M. Maya* and Marta Iglesias*

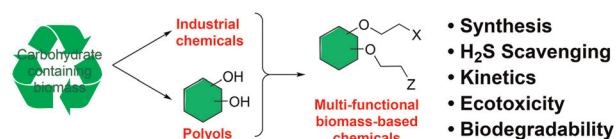


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1984

Multifunctional biomass-based chemicals: H₂S scavenging

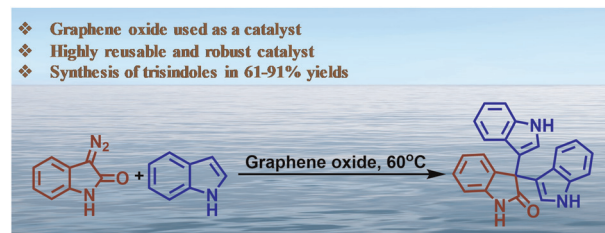
Asger M. Koue, Fernando Montero, Lars M. Skjolding, Sergey Kucheryavskiy, Marco Maschietti and Christian M. Pedersen*



1990

Graphene oxide-catalysed carbene-transfer reaction in water: a highly "green" and selective approach to access 3,3',3''-trisindoles

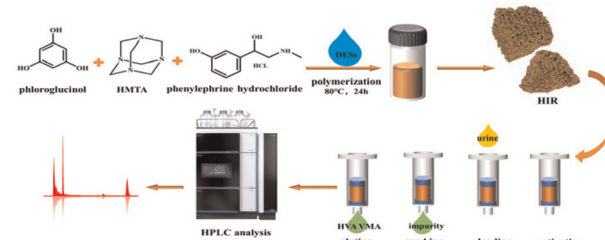
Priya Kamboj and Vikas Tyagi*



2000

Facile and green synthesis of a hydrophilic imprinted resin in a deep eutectic solvent–water medium for the specific molecular recognition of tumor biomarkers in complex biological matrices

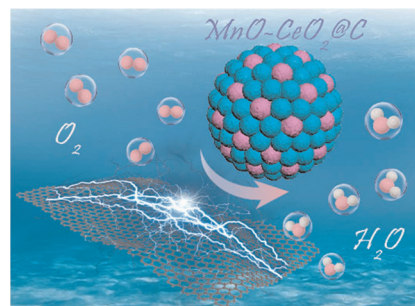
Mingwei Wang, Liang Zhou, Fengxia Qiao and Hongyuan Yan*



2011

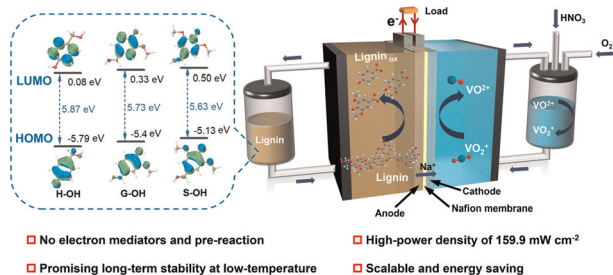
Engineering built-in electric fields in oxygen-deficient MnO–CeO₂@Cs catalysts: enhanced performance and kinetics for the oxygen reduction reaction in aqueous/flexible zinc–air batteries

Lixia Wang, Xinran Hu, Huatong Li, Zhiyang Huang, Jia Huang, Tayirjan Taylor Isimjan* and Xiulin Yang*



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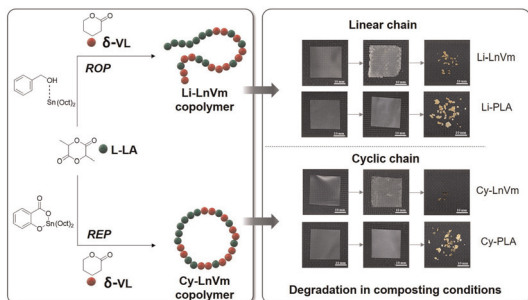
2021



A high-performance lignin flow fuel cell based on self-generating electricity of lignin at low temperature via a privileged structure and redox chemistry

Zixin Xie, Xihong Zu,* Jinxin Lin, Xueqing Qiu,* Tengda Liang and Liheng Chen

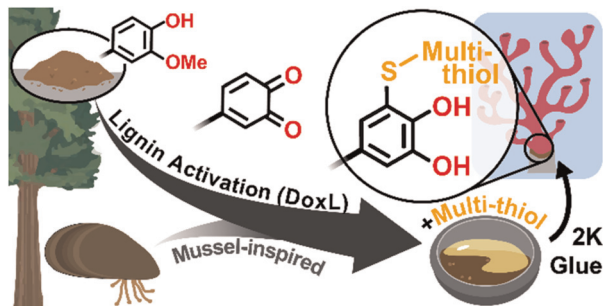
2031



Effect of chain architecture and comonomer ratio on the biodegradability and thermal stability of biodegradable copolymers of L-lactide and delta-valerolactone

Phornwan Nanthananon and Yong Ku Kwon*

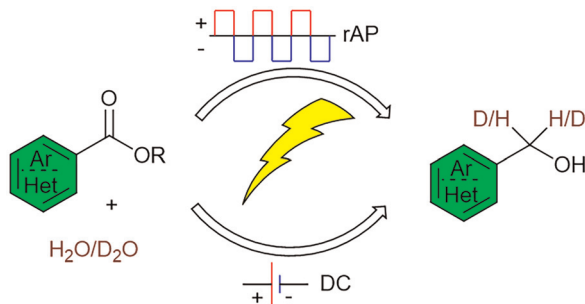
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Organic transformation of lignin into mussel-inspired glues: next-generation 2K adhesive for setting corals under saltwater

Ching-Yi Choi, Francisco Lossada, Keven Walter, Tom Fleck-Kunde, Sascha Behrens, Thomas Meinelt, Jana Falkenhagen, Matthias Hiller, Hartmut Oschkinat, André Dallmann, Andreas Taden and Hans G. Börner*

2059



Electrochemical reduction of benzoic acid esters using water as a H/D source

Lei Zhang, Mengfan Li, Yin Yang, Xu Cheng* and Qi-Lin Zhou*

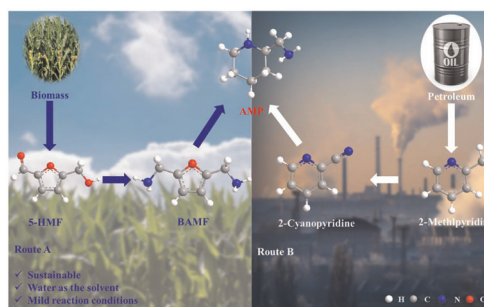


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A new method for green production of 2-aminomethylpiperidine from bio-renewable 2,5-bis(aminomethyl)furan

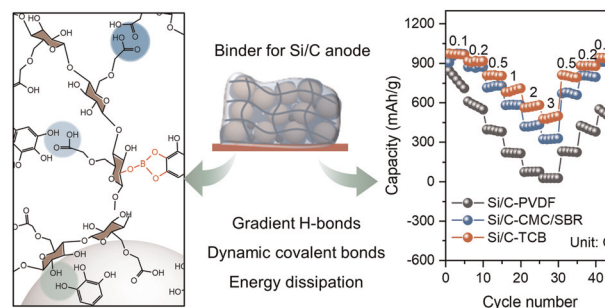
Shuxing Zhang, Xiaoshu Ding* and Yanji Wang*



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Co-operation of hydrogen bonds and dynamic covalent bonds enables an energy-dissipative crosslinked binder for silicon-based anodes

Xiangyu Lin, Yong Wen, Jie Wang, Shanshan Wang, Xingshen Sun, He Liu* and Xu Xu*



2087

Chemical recycling of polycarbonate and polyester without solvent and catalyst: mechanochemical methanolysis

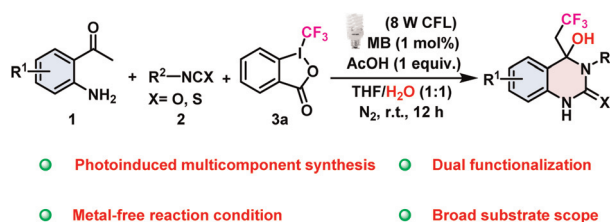
Hyo Won Lee, Kwangho Yoo, Lars Borchardt* and Jeung Gon Kim*



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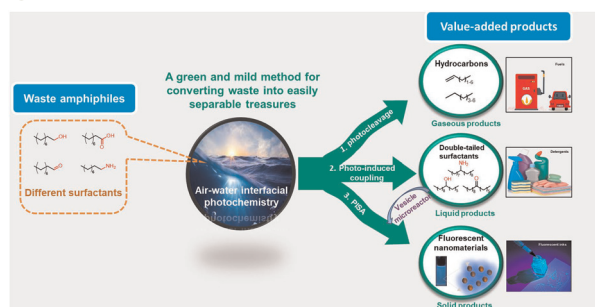
A photoinduced multicomponent intramolecular cyclization/hydroxytrifluoromethylation cascade: facile access to polyfunctionalized 3,4-dihydroquinazolinones

Changjun Zhang,* Yuxin Ding, Wenkai Huang, Hao Zhang, Xue Yang, Yuan Shi, Hongmei Luo, Dingyuan Lou and Yuanyuan Xie*



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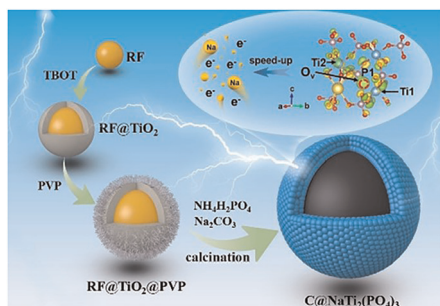
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Photoconverting waste amphiphiles at the mild air–water interface into easily separable value-added products

Qin Dai, Xiaoyu Zhang, Jingyi Lin, Tao Cui, Wenbo Wang, Guangfei Yu, Hongbin Cao and He Zhao*

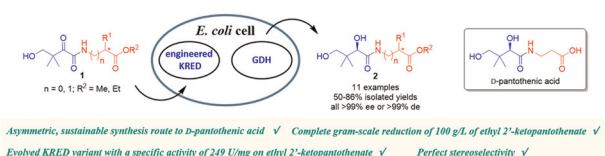
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Tailoring the electronic structure of the $\text{NaTi}_2(\text{PO}_4)_3$ anode for high-performing sodium-ion batteries via defect engineering

Qinchao Wang,* Sha He, Hao Chen, Zhaoquan Peng, Zhixin Xu, Zhiyong Zeng, Chao Wang, Pan Xue, Lubin Ni, Xiaoge Li* and Jie Han*

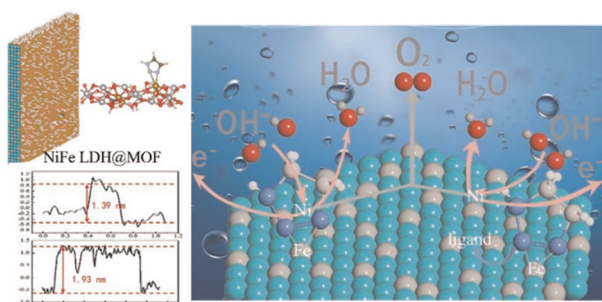
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Engineered ketoreductase-catalyzed stereoselective reduction of ethyl 2'-ketopantothenate and its analogues: chemoenzymatic synthesis of D-pantothenic acid

Pan Hu, Xiaofan Wu, Yajiao Zhang, Minjie Liu, Yuan Tao, Zedu Huang* and Fener Chen*

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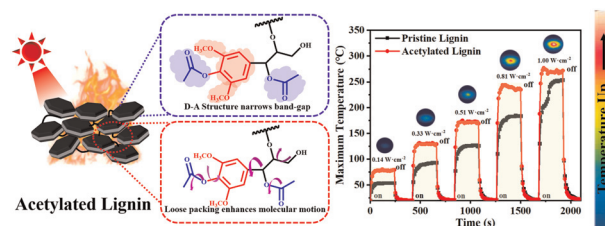
Atomic-layered metal–organic framework on NiFe LDH for enhanced electrocatalytic oxygen evolution reaction

Dan Xu, Yingying Gao, Sheng Qian, Yu Fan and Jingqi Tian*



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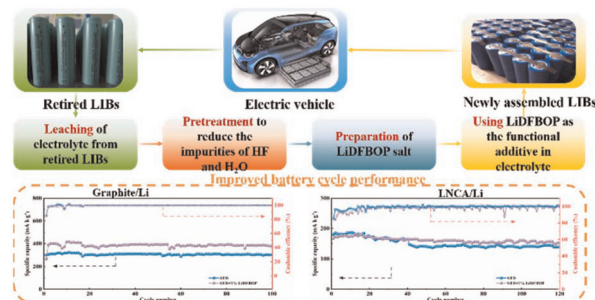
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Mechanism study of the photothermal function of lignin: the effect of electron-withdrawing groupsJunjie Lei, Liheng Chen, JinXin Lin, Weifeng Liu,*
Qingang Xiong and Xueqing Qiu*

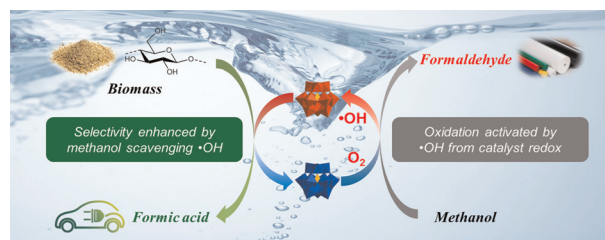
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Seminormal-BrCH₂CH₂OH-mediated electrochemical epoxidation of unactivated olefinsHong He, Yanxia Lv, Jing Hu, Zhong-Wei Hou* and
Lei Wang*

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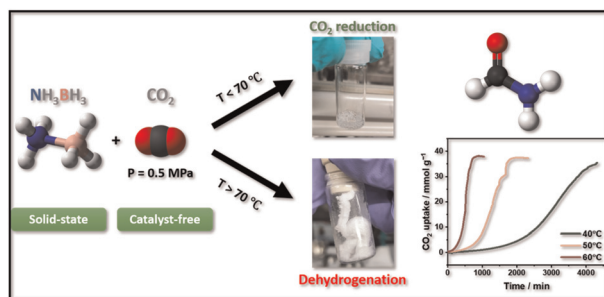
High-value utilization of recovered LiPF₆ from retired lithium-ion batteriesJie Wang, Xiaoling Cui, Linhu Song, Junlong Zhu,
Yinong Wang, Feifei Zong, Ningshuang Zhang,
Dongni Zhao and Shiyu Li*

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Efficient catalytic oxidation of biomass to formic acid coupled with low-energy formaldehyde production from methanolZhuosen He, Yucui Hou, Jian Wei, Shuhang Ren and
Weize Wu*

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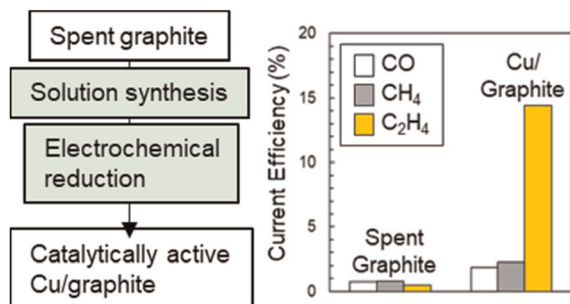
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Solvent- and catalyst-free reduction of CO₂ with ammonia borane

Loris Lombardo,* Taichi Nishiguchi, Youngdon Ko, Liping Zhong, Nao Horike, Andreas Züttel and Satoshi Horike*

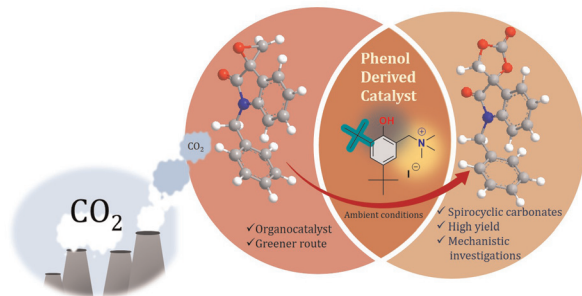
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Facile synthesis of electrocatalytically active Cu/graphite using the negative electrode of spent Li-ion batteries

Hiroshi Itahara,* Naonari Sakamoto, Naoko Takahashi, Satoru Kosaka and Yasuhiro Takatani

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Modular synthesis of spirocyclic carbonates: unravelling the synergistic interplay of electronic and electrostatic sites on phenolic catalyst

Shilpa Dabas, Brijesh Patel, Sanjay Mehra, Manas Barik, Prabhakar Murugan, Arvind Kumar* and Saravanan Subramanian*

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Transition-metal-free access to benzyl ethers via aerobic cross-dehydrogenative coupling of benzylic C(sp³)–H bonds with alcohols

Xiao Zhang, Wenjie Li, Yang Yu, Min Luo, Hua Bai, Lei Shi and Hao Li*

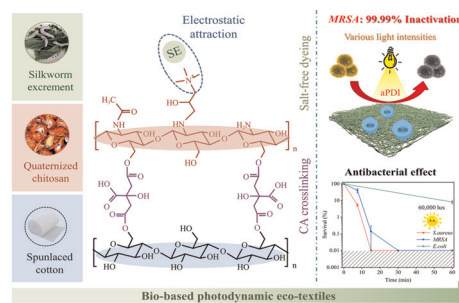


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A facile and scalable strategy for fabricating bio-based photodynamic antimicrobial nonwoven eco-textiles

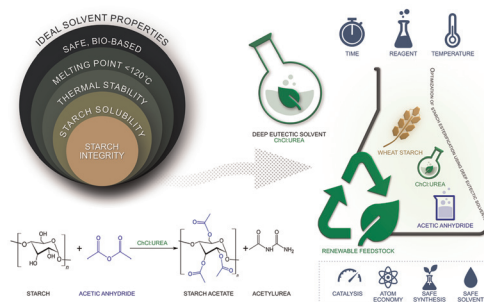
Zihao Lv, Qingqing Wang,* Yang Wang, Xiaohong Yuan, Xin Xia, Shiqin Liao and Qufu Wei



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Starch esterification using deep eutectic solvents as chaotropic agents and reaction promoters

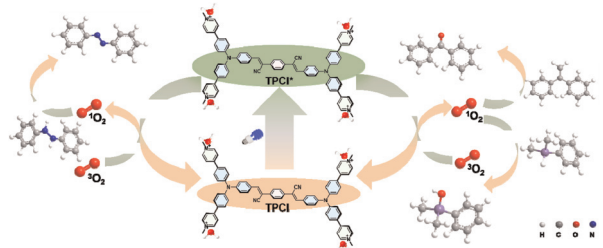
Guillermo A. Portillo-Perez, Kasper B. Skov and Mario M. Martinez*



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A water-soluble type II photosensitizer for selective photooxidation reactions of hydroazaobenzenes, olefins, and hydrosilanes in water

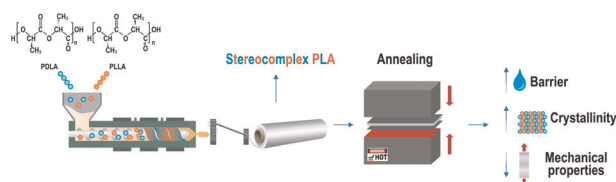
Rong-Zhen Zhang, Kai-Kai Niu,* Yu-Song Bi, Hui Liu, Sheng-Sheng Yu, Yue-Bo Wang and Ling-Bao Xing*



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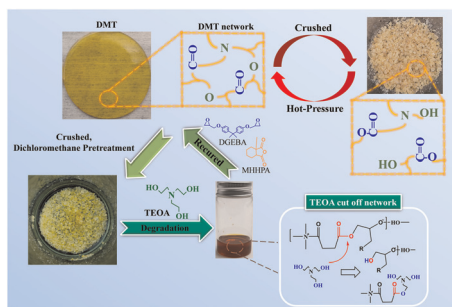
Unlocking the secrets of high-water barrier stereocomplex poly(lactide) blend extrusion films

James F. Macnamara, Jr., Maria Rubino, Matthew Daum, Ajay Kathuria and Rafael Auras*



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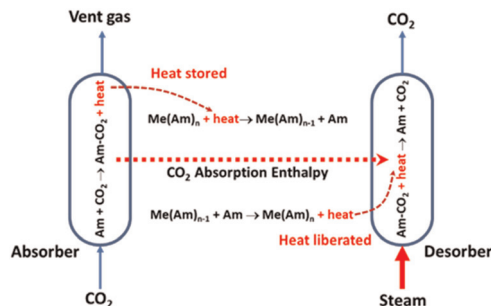
2258



An anhydride -cured degradable epoxy insulating material exhibiting recyclability, reusability, and excellent electrical performance

Yunjian Wu, Yiran Hu, Hui Lin and Xiaoxing Zhang*

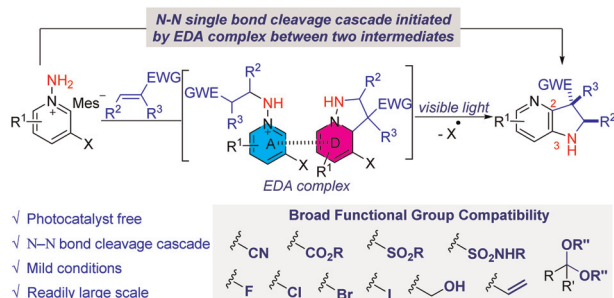
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Tuning CO₂ reaction enthalpy via metal complexes for advanced amine technology

Kangkang Li,* Jian Chen, Simeng Li, Yang Liu, Paul Feron, Hai Yu, Hanming Liu, Yong Cai and Kaiqi Jiang*

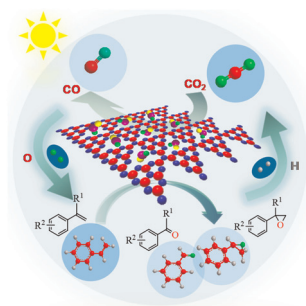
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An electron-donor–acceptor complex between two intermediates enables a N–N bond cleavage cascade process to access 2,3-difunctionalized pyridines

Ya-Zhou Liu, Yu Chen, Amu Wang, Zhongke Shen, Xueting Zhou, Jichao Zhang, Yinxian Jian and Xiaofeng Ma*

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Efficient photocatalytic CO₂ reduction coupled with selective styrene oxidation over a modified g-C₃N₄/BiOBr composite with high atom economy

Peng Bai, Yicheng Zhao* and Yongdan Li

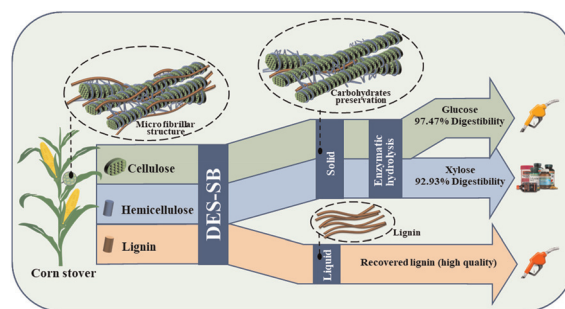


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A novel green biorefinery strategy for corn stover by pretreatment with weak alkali-assisted deep eutectic solvents

Zhaobao Wang,* Jie Zhou, Yating Yin, Mengqian Mu, Yanzhou Liu, Disheng Zhou, Weitao Wang, Xinyun Zuo and Jianming Yang*



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Rapid production of the anaesthetic mepivacaine through continuous, portable technology

Pablo Díaz-Kruik and Francesca Paradisi*

