

Green Chemistry

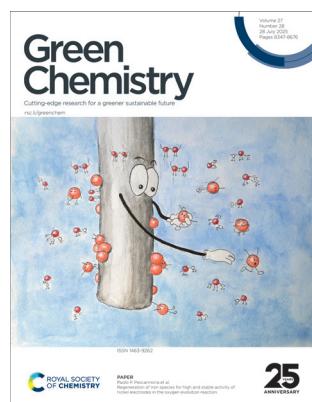
Cutting-edge research for a greener sustainable future

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ISSN 1463-9262 CODEN GRCHFJ 27(28) 8347–8676 (2025)



Cover

See Paolo P. Pescarmona *et al.*, pp. 8505–8516.

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Inside cover

See Xinhua Qi, Haixin Guo *et al.*, pp. 8414–8447.

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EDITORIAL

8357

From aspiration to action: evolving the mission of *Green Chemistry*

Javier Pérez-Ramírez and Michael A. Rowan

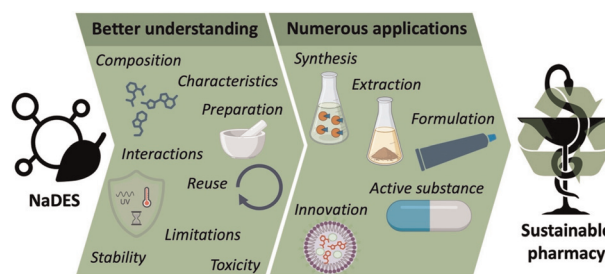


CRITICAL REVIEWS

8360

Natural deep eutectic solvents (NaDES): green solvents for pharmaceutical applications and beyond

Emma Chev -Kools,* Young Hae Choi, Catherine Roullier, Gwena l Ruprich-Robert, Rapha l Grougnet, Florence Chapeland-Leclerc* and Frank Hollmann



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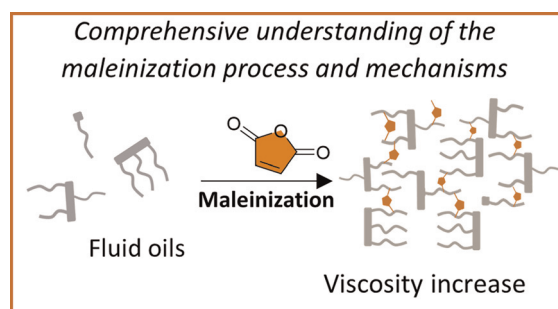


CRITICAL REVIEWS

8386

The reaction of maleic anhydride with alkenes: a review on the mechanisms involved in the reaction of maleic anhydride with lipids

Shamseldin A. Mohamed, Mildrède Debello, Justine Cantot, Stéphane Lavaud, Guillaume Chollet, Clémence Queffélec* and Emmanuel Chailleux

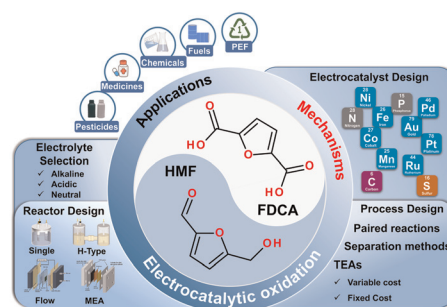


TUTORIAL REVIEWS

8414

Electrocatalytic oxidation of biomass-derived furans to 2,5-furandicarboxylic acid – a review

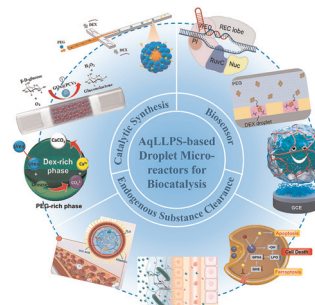
Bingkun Chen, Qidong Hou, Richard Lee Smith, Jr, Xinhua Qi* and Haixin Guo*



8448

Aqueous liquid–liquid phase separation (AqLLPS) droplet microreactors for biocatalysis

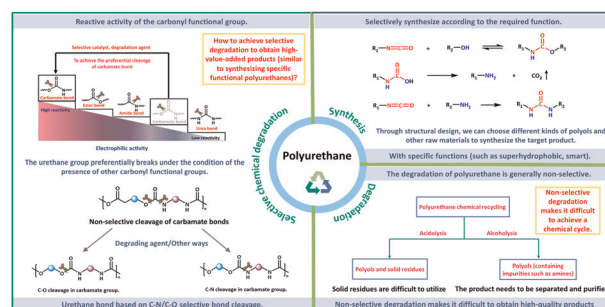
Futai Du, Huan Xin, Huiyuan Zheng, Weijiang Wang, Hao Yuan, Chaolong Liu,* Tao Meng and Qingming Ma*



8467

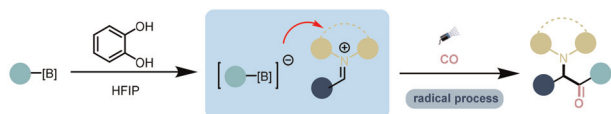
Prospects of high-value recycling methods for polyurethane based on the selective cleavage of C–O/C–N bonds

Hui-Wen He, Hang Hu, Kai-Ming Du, Ming Lu, Fan Yang, Ling-Xiao Cui, Meng Ma, Yu-Lu Zhu, Yan-Qin Shi, Si Chen* and Xu Wang*



COMMUNICATIONS

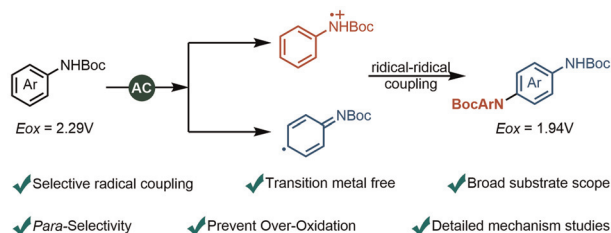
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A catechol-catalyzed photocatalytic carbonylative four-component reaction of alkylboronic acids with aldehydes and amines

Qiangwei Li, Le-Cheng Wang and Xiao-Feng Wu*

8498

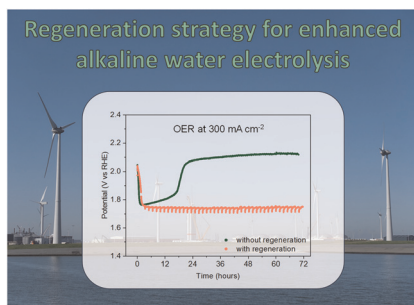


Alternating current enabled *para*-selective C(sp²)-H/N-H cross-coupling of aniline

Zhaoliang Yang,* Haiyan Du, Yuan Zhou, Mingming Yu and Jianye Zhang*

PAPERS

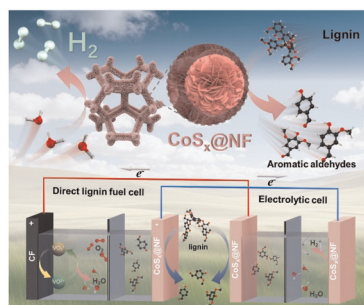
8505



Regeneration of iron species for high and stable activity of nickel electrodes in the oxygen evolution reaction

Stefano Poli, Claude Poleunis, Matteo Miola, Dominic Gerlach, Petra Rudolf, Arnaud Delcorte, Hans Lammers, Matheus T. de Groot, Dulce M. Morales and Paolo P. Pescarmona*

8517



Efficient harvesting of electricity, aromatic aldehydes and H₂ from lignin over nanoflower-like cobalt-based bifunctional electrocatalysts

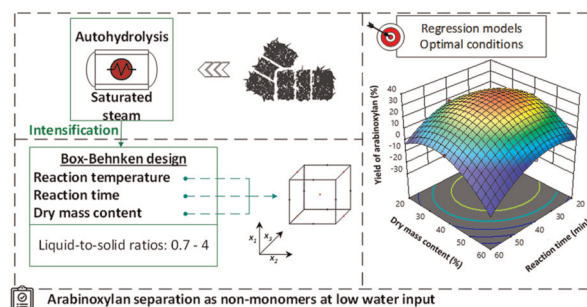
Yichen Zhang, Daihong Gao, Denghao Ouyang, Binhang Yan and Xuebing Zhao*



8532

Intensification of wheat straw autohydrolysis at minimal water input: Advancing a novel hemicellulose-first approach

Stanislav Parsin* and Martin Kaltschmitt



8549

Electrochemical Ni–H catalysis for selective tail-to-tail reductive dimerization of terminal alkynes to access 2,3-dibranched butadienes

Shide Lv, Mingming Yu,* Yinglong Ni, Tiantian Huang, Hong Yi* and Aiwen Lei*



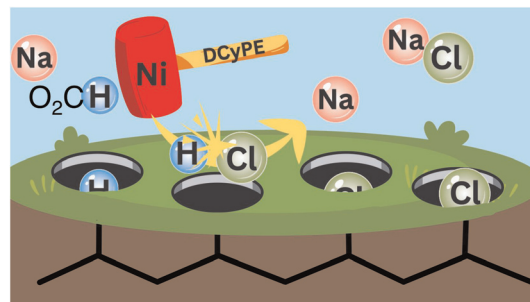
Highlights

- ✓ Earth-abundant Ni catalyst
- ✓ New strategy for obtaining Ni-H
- ✓ General H donor
- ✓ Detailed mechanistic studies: CV, SWV and kinetic

8559

Nickel catalyzed hydrodechlorination and CO functionalization of polyvinyl chloride

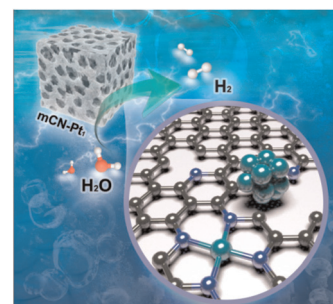
Ayon Das and Megan E. Fieser*



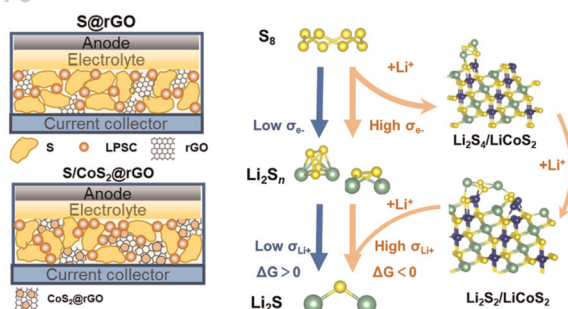
8569

Covalent organic framework-derived highly dispersed Pt single atoms collaborate with Pt nanoclusters electrocatalyst for acid hydrogen evolution

Huihui Zhao, Xinghao Zhang, Chengcheng Yu, Wenya Gao, Xiuxiu Chen, Haikuo Lan, Xiaorong Xin, Kang Liu and Dingxuan Ma*



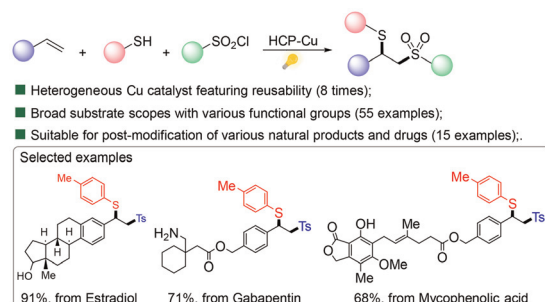
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Overcoming the conversion reaction limitation with a dual-phase sulfide-based cathode for all-solid-state lithium–sulfur batteries

Ruojian Ma, Yingzuo He, Minghao Ruan, Ruyi Fang,* Xinxu Wang, Jun Zhang, Yongping Gan, Xinping He, Hui Huang, Xinhui Xia, Wenkui Zhang, Xinyong Tao, Min Fan and Yang Xia*

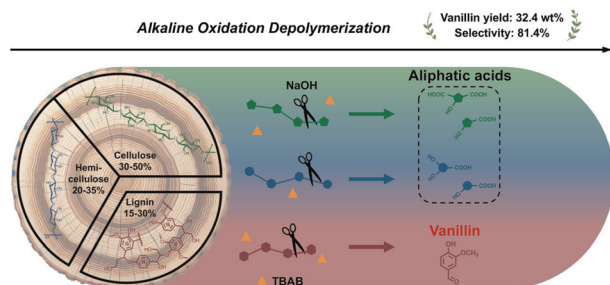
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Photocatalytic 1,2-thiosulfonylation of alkenes with thiophenols and sulfonyl chlorides promoted by directly knitted copper polymers

Lijie Chen, Kai Zhang, Yajing Shen,* Zhen Chen* and Weiwei Fang*

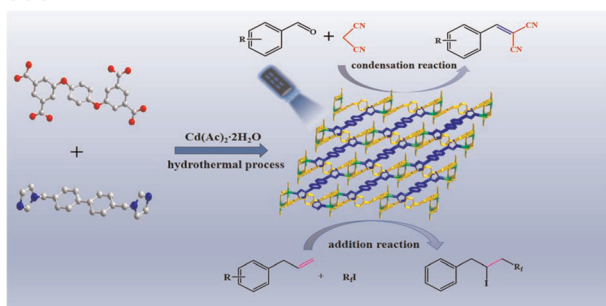
8594



A phase-transfer-assisted strategy for oxidation-based biomass valorization

Junhao Wang, Baoyin An, Pengfei Li, Huili Zhang and Yunming Fang*

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Dual enabling photomediated Knoevenagel condensation and alkene perfluoroalkylation reactions by a photoresponsive cadmium–organic framework

Nana Yuan, Jia Cao, Yixia Ren,* Xiufang Hou and Sanping Chen*

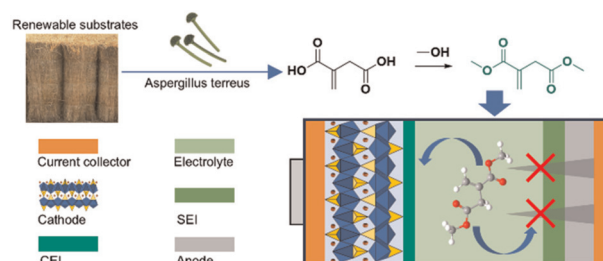


PAPERS

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Bio-derived dimethyl itaconate: a sustainable, low-cost electrolyte additive for high-performance lithium batteries

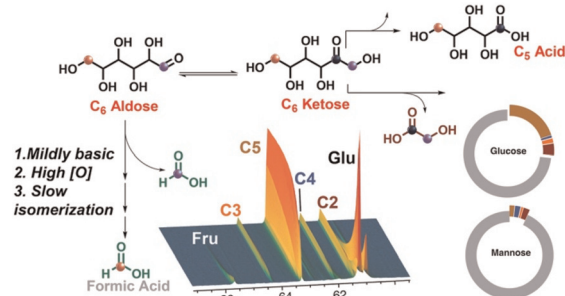
Chengliang Wang, Mingming Zhou, Lintong Zhou, Le Chang, Jianjiang He, Wei Zhao, Jingjiang Sun* and Qingfu Wang*



8625

Base-catalyzed cascades of monosaccharide conversion to formic acid: isotope tracking reveals pathways and their optimal usage under mild conditions in water

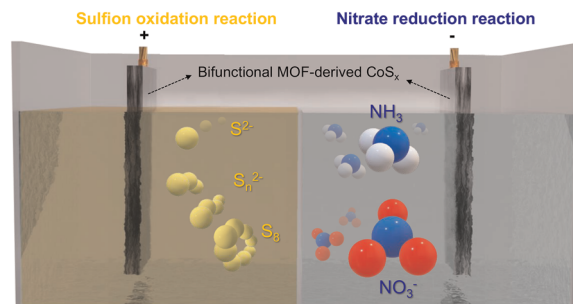
Stefan S. Warthegau, Mette-Maya Siewertsen, Robert Madsen and Sebastian Meier*



8637

MOF-derived CoS_x as a bifunctional electrocatalyst for efficient sulfide oxidation and coupled ammonia synthesis

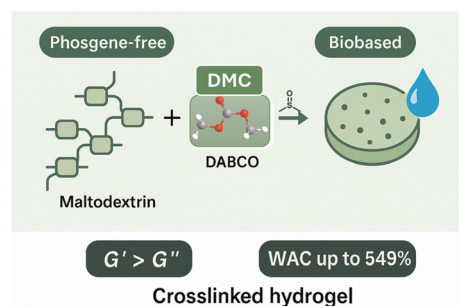
Kwangyeol Baek, Tianlei Li, Changsoo Lee, Wenzhen Li* and Kwiyong Kim*

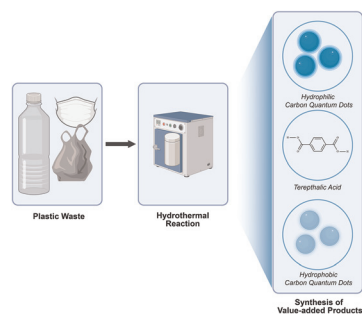


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Green synthesis of scalable non-soluble hydrogels: rapid transesterification of maltodextrin with dimethylcarbonate using DABCO/DMSO

Mohamed M. H. Desoky,* Gjyljije Hoti, Arshak Tsaturyan, Claudio Cecone, Fabrizio Caldera and Francesco Trotta





Single step, one-pot, catalyst-free upcycling of polyethylene terephthalate into biphasic carbon dots and high-purity terephthalic acid

Kevin Brian, Mahmoud Elbeh,
Mohammed Abdelhameed, Batoul Khaifat,
Fatma Alrebh, Liaqat Ali, Batool Abedrabbo,
Brijith Thomas and Khalil B. Ramadi*

