

Green Chemistry

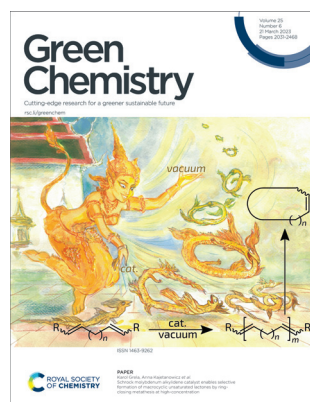
Cutting-edge research for a greener sustainable future

rsc.li/greenchem

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IN THIS ISSUE

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Cover

See Karol Grela,
Anna Kajetanowicz *et al.*,
pp. 2299–2304.

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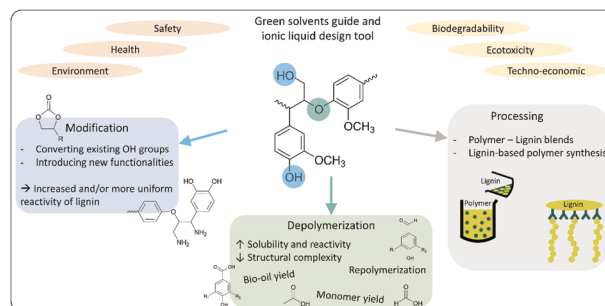
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CRITICAL REVIEWS

2042

Sustainable lignin modifications and processing methods: green chemistry as the way forward

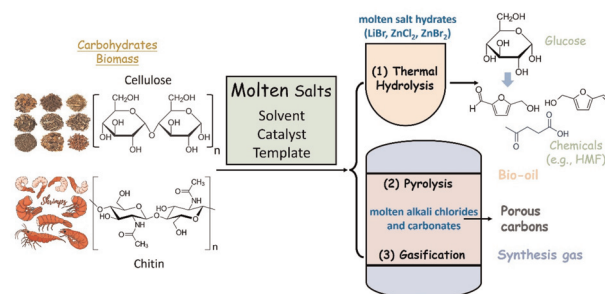
Bram Jacobs, Yawen Yao, Ine Van Nieuwenhove,
Dhanjay Sharma, Geert-Jan Graulus, Katrien Bernaerts*
and An Verberckmoes*



2087

Research advancement in molten salt-mediated thermochemical upcycling of biomass waste

Yafei Shen* and Xiangzhou Yuan



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Green Chemistry

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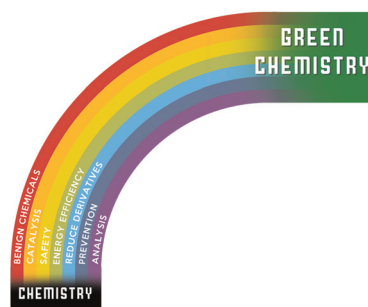


CRITICAL REVIEWS

2109

GreenMedChem: the challenge in the next decade toward eco-friendly compounds and processes in drug design

Carola Castiello, Pierre Junghanns, Annika Mergel, Claus Jacob, Christian Ducho, Sergio Valente, Dante Rotili, Rossella Fioravanti,* Clemens Zwerget* and Antonello Mai

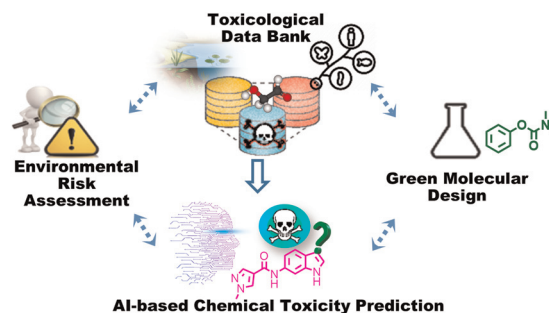


TUTORIAL REVIEWS

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Toxicological data bank bridges the gap between environmental risk assessment and green organic chemical design in One Health world

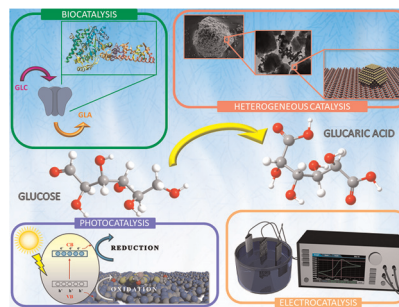
Xing-Xing Shi, Zhi-Zheng Wang, Xin-Lin Sun, Yu-Liang Wang, Huan-Xiang Liu, Fan Wang, Ge-Fei Hao* and Guang-Fu Yang*



2220

Selective oxidation of biomass-derived carbohydrate monomers

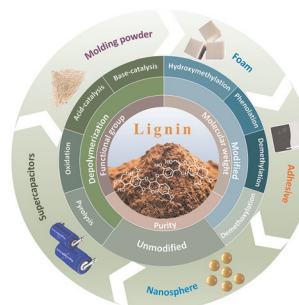
Janvit Teržan,* Anja Sedminek, Žan Lavrič, Miha Grilc, Matej Huš and Blaž Likozar

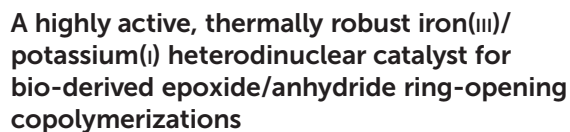


2241

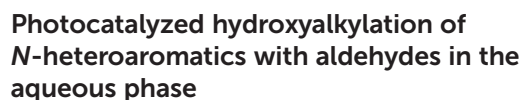
Lignin as a green and multifunctional alternative to phenol for resin synthesis

Wei Li, Hao Sun, Guanhua Wang,* Wenjie Sui, Lin Dai* and Chuanling Si*

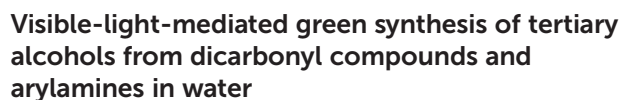




2268



- Abundant feedstocks
- Cheap and easy-to-synthesize photocatalyst
- Mild reaction conditions in aqueous phase under air atmosphere
- New strategy for hydroxyalkylation



Xin Hui, Dan Zhang, Chunying Wu, Yifan Ma,
Huihui Zhou and Yunbo Zhu*



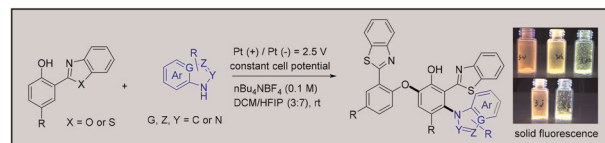
Yanan Hou, Hui Wang, Juan Xi, Ruonan Jiang,
Lizhi Zhang, Xinjin Li, Fenggang Sun, Qing Liu,*
Zengdian Zhao* and Hui Liu*

COMMUNICATIONS

2287

Consecutive cross-dehydrogenative C–O and C–N construction for the synthesis of polyarene with AIE properties under electrochemical condition involving oxygen radical species

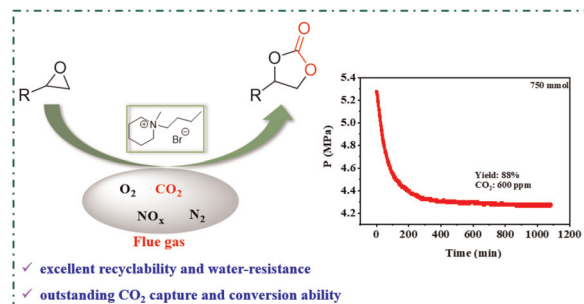
Zhicheng Zhang, Linzi Wen, Shihai Xu, Yu Tang,*
Xiaohui Cao* and Pengju Feng*



2293

In situ CO₂ capture and transformation into cyclic carbonates using flue gas

Haiying Ma, Shujuan Liu, Hongli Wang, Guomin Li,
Kang Zhao, Xinjiang Cui and Feng Shi*

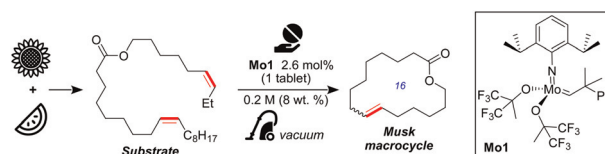


PAPERS

2299

Schrock molybdenum alkylidene catalyst enables selective formation of macrocyclic unsaturated lactones by ring-closing metathesis at high-concentration

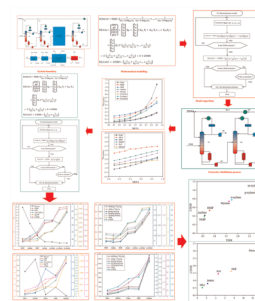
Adrian Sytniczuk, Mariusz Milewski, Michał Dąbrowski,
Karol Grela* and Anna Kajetanowicz*



2305

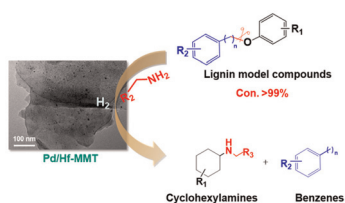
A heuristic predictive model for screening green entrainers comparing life cycle assessment indexes and economics

Qinggang Xu, Jiafu Xing, Yuyang Jiao, Zihao Su,
Yanli Zhang, Peizhe Cui, Jianguang Qi, Zhaoyou Zhu,
Yinglong Wang* and Yixin Ma



PAPERS

2318

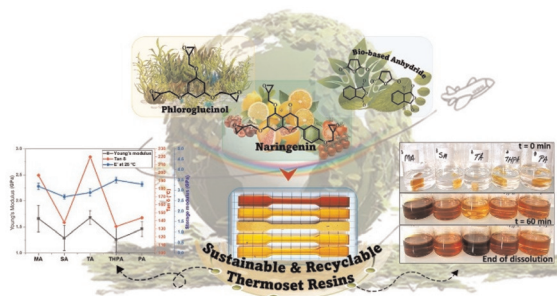


- This work:**
- ✓ Without using any acidic additives
 - ✓ Low hydrogen pressure (0.3 MPa)
 - ✓ Extensive applicability (at least 24 examples)
 - ✓ Suitable for various amine sources

Hf⁴⁺-exchanged montmorillonite-boosted Pd-catalyzed reductive aminolysis of aryl ethers to efficiently synthesize cyclohexylamines

Jiao Xu, Bingxiao Zheng, Jinliang Song,* Haihong Wu,*
Xuelei Mei, Kaili Zhang, Wanying Han, Chunyu Li,
Mingyuan He and Buxing Han*

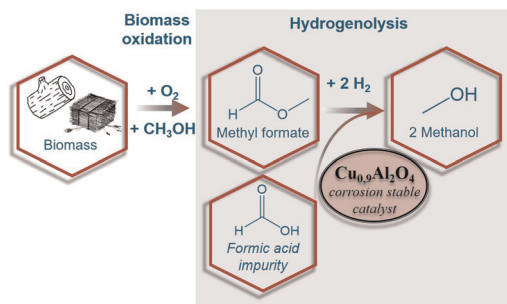
2327



High performance, recyclable and sustainable by design natural polyphenol-based epoxy polyester thermosets

Roxana Dinu, Anastasiia Pidvoronia, Ugo Lafont,
Olivier Damiano and Alice Mija*

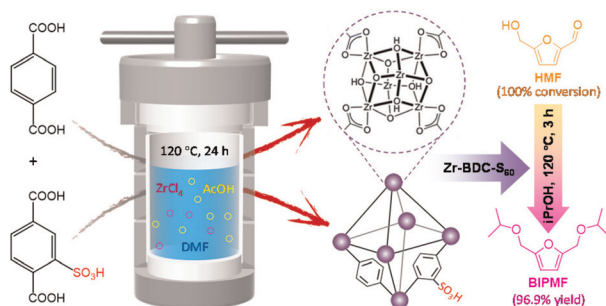
2338



Synthesis of methanol by hydrogenolysis of biobased methyl formate using highly stable and active Cu-spinel catalysts in slurry and gas phase reactions

Vera Haagen, Jakob Iser, Markus Schörner,
Dennis Weber, Tanja Franken, Peter Wasserscheid and
Patrick Schühle*

2349



One-pot reductive etherification of biomass-derived 5-hydroxymethylfurfural to 2,5-bis(isopropoxymethyl)furan over a sulfonic acid-functionalized zirconium-based coordination catalyst

Aiyong He, Qinyin Gu, Xinming Shen, Jingyi Zheng,
Lei Hu,* Xiaoyu Wang, Yetao Jiang, Zhen Wu,*
Jiaxing Xu and Jinliang Song*

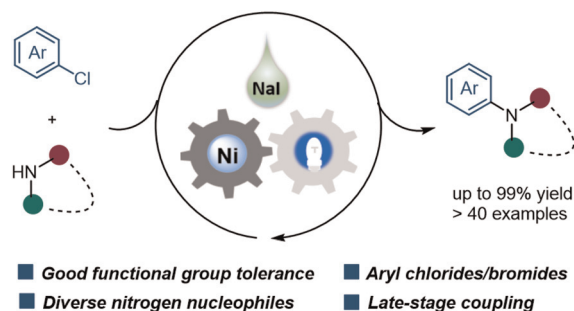


PAPERS

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Sodium-iodide-promoted nickel-catalyzed C–N cross-coupling of aryl chlorides and N-nucleophiles under visible-light irradiation

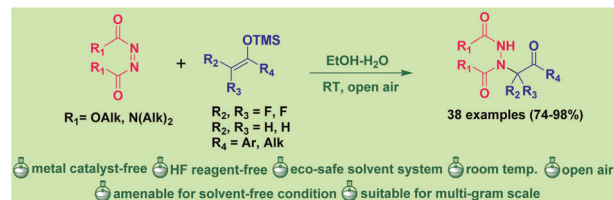
Yunhui Feng, Hang Luo, Fangnian Yu, Qian Liao and Luqing Lin*



2368

Developing a transition-metal-free green protocol for the electrophilic hydrazination of silyl enol ethers using diazo electrophiles with EtOH–H₂O as a safe solvent

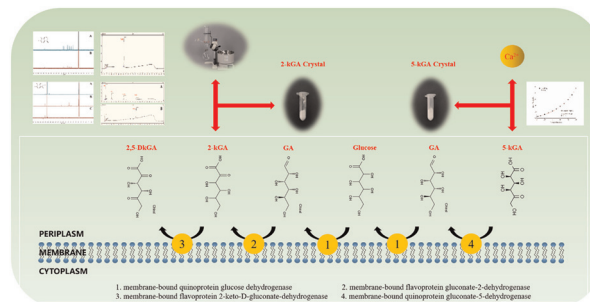
Subba Rao Polimera, Andivelu Ilangoan and Murugaiah A. M. Subbaiah*



2378

Cascading and precise regulation of the selective bio-production of 2- or 5-ketogluconic acid from glucose with whole-cell catalysis technology

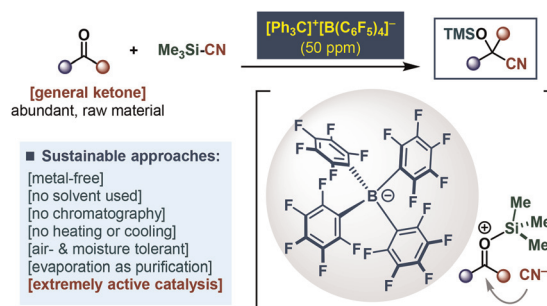
Xia Hua, Jian Han, XinLu Liu and Yong Xu*



2387

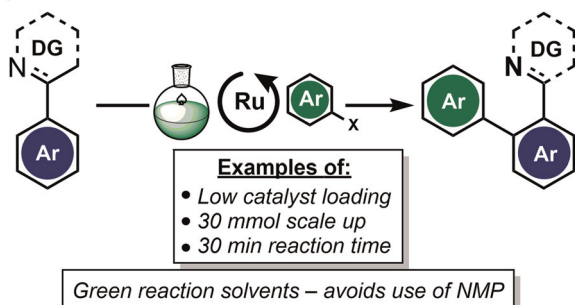
Sustainable organocatalytic cyanosilylation of ketones by PPM-level loading of triphenylcarbenium tetrakis(pentafluorophenyl) borate

Muhammad Israr and Han Yong Bae*



PAPERS

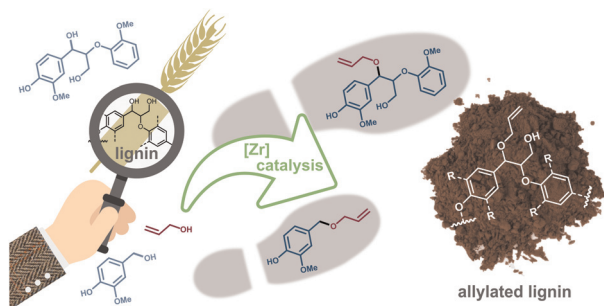
2394



Improving the sustainability of the ruthenium-catalysed *N*-directed C–H arylation of arenes with aryl halides

Michael T. Findlay, Ashley S. Hogg, James J. Douglas and Igor Larrosa*

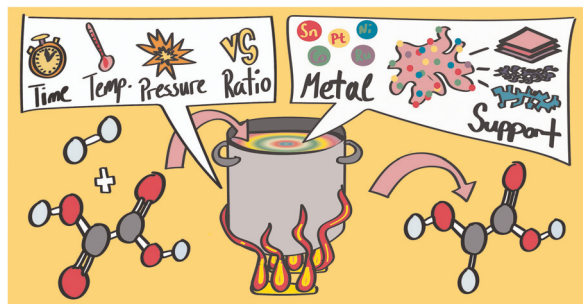
2401



Mild and selective etherification of wheat straw lignin and lignin model alcohols by moisture-tolerant zirconium catalysis

Cristiana Margarita, Davide Di Francesco, Hernando Tuñón, Ivan Kumaniaev, Carlos Jansson Rada and Helena Lundberg*

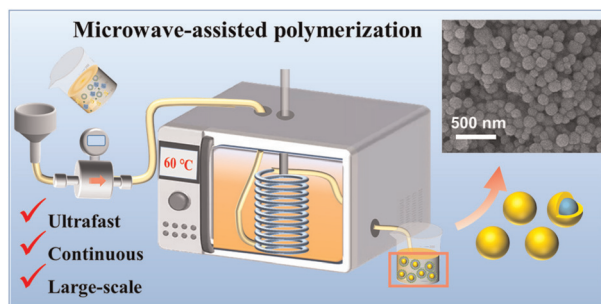
2409



Oxalic acid hydrogenation to glycolic acid: heterogeneous catalysts screening

Eric Schuler, Lars Grooten, Mohanreddy Kasireddy, Santosh More, N. Raveendran Shiju, Setrak K. Tanielyan, Robert L. Augustine and Gert-Jan M. Gruter*

2427



Ultrafast and continuous synthesis of phase change nanocapsules using salt-accelerated microwave-assisted polymerization

Dan Li, Xin Li, Jun Yan, Yongqiang Qian, Guxia Wang, Yen Wei and Shengwei Guo*

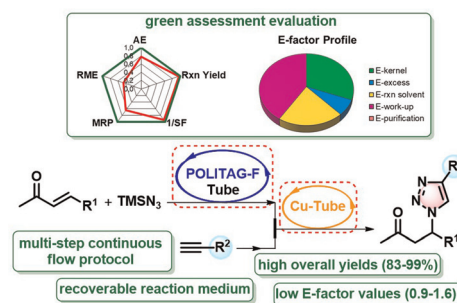


PAPERS

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Continuous flow synthesis of 1,4-disubstituted 1,2,3-triazoles via consecutive β -azidation of α,β -unsaturated carbonyl compounds and CuAAC reactions

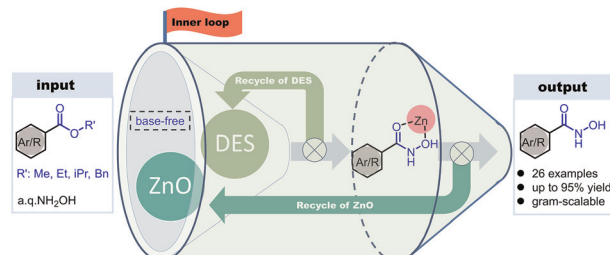
Giulia Brufani, Federica Valentini, Gabriele Rossini, Luigi Carpisassi, Daniela Lanari* and Luigi Vaccaro*



2446

A base-free hydroxylaminolysis protocol promoted by ZnO in deep eutectic solvents

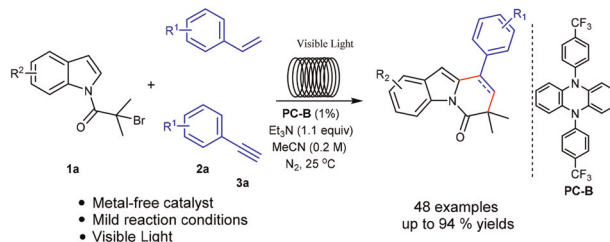
Xinjie Liang, Bingqing Lv, Shitao Sun, Zhixuan Wu, Bin Lin, Xuefei Bao* and Guoliang Chen*



2453

Synthesis of pyrido[1,2-a]indol-6(7H)-ones via a visible light-photocatalyzed formal (4 + 2) cycloaddition of indole-derived bromides and alkenes or alkynes

Minghui Wei, Chengkou Liu, Chang-Sheng Wang, Yuguang Li, Peng Qiu, Quanxiao Dong, Zhao Yang, Zheng Fang* and Kai Guo*



2458

Herbaceous plants-derived hydroxycinnamic units for constructing recyclable and controllable copolyesters

Jia Shi, Shuizhong Wang, Helong Li* and Guoyong Song*

