

Green Chemistry

Cutting-edge research for a greener sustainable future

rsc.li/greenchem

The Royal Society of Chemistry is the world's leading chemistry community. Through our high impact journals and publications we connect the world with the chemical sciences and invest the profits back into the chemistry community.

IN THIS ISSUE

ISSN 1463-9262 CODEN GRCHFJ 26(23) 11367-11736 (2024)



Cover

See Camilla Maria Cova, Nouredine Khair, and Alessio Zuliani *et al.*, pp. 11563–11575.

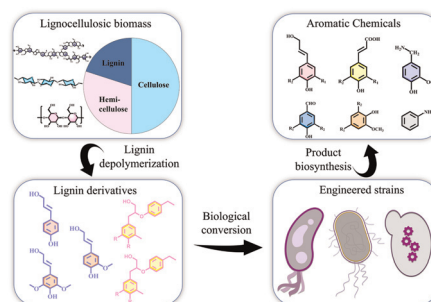
Image reproduced by permission of Alessio Zuliani, Camilla Maria Cova and Nouredine Khair from *Green Chem.*, 2024, **26**, 11563.

CRITICAL REVIEWS

11378

Tapping into the natural aromatic potential of microbial lignin valorization towards aromatic fine chemicals

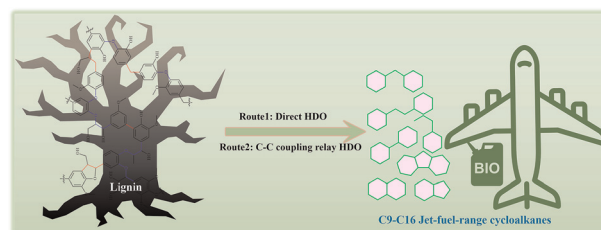
Xiao-Lei Zhang, Zhi-Hua Liu,* Bing-Zhi Li* and Ying-Jin Yuan



11406

Catalytic hydrodeoxygenation and C–C coupling of lignin and its derivatives into renewable jet-fuel-range cycloalkanes

Xinyong Diao, Ying Xiong, Yawen Shi, Longlong Ma, Chenglong Dong, Shengbo Zhang and Na Ji*



**GOLD
OPEN
ACCESS**

EES Batteries

**Exceptional research on
batteries and energy storage**

Part of the EES family

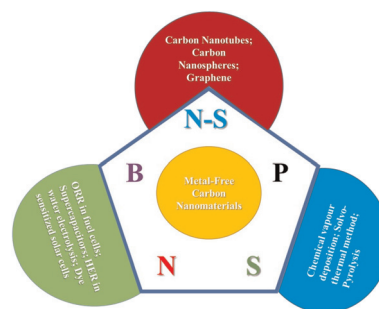
**Join
in** | Publish with us
rsc.li/EESBatteries

CRITICAL REVIEWS

11427

Biomass-derived metal-free heteroatom doped nanostructured carbon electrocatalysts for high-performance rechargeable lithium–air batteries

Molla Asmare Alemu,* Muluken Zegeye Getie, Hailemariam Mulugeta Wassie, Mulat Shitye Alem, Addisu Alemayehu Assegie, Mustafa İlbaş and Rafat Al Afif

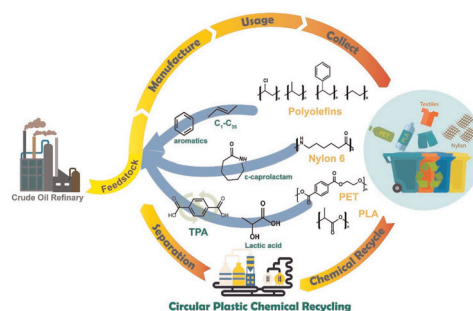


TUTORIAL REVIEWS

11444

Fundamental, technical and environmental overviews of plastic chemical recycling

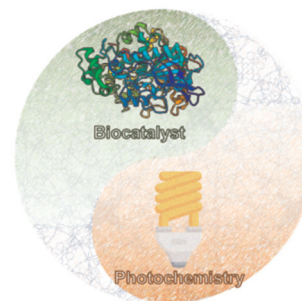
Hui Luo,* Helen Tyrrell, Jingyang Bai, Rukayya Ibrahim Muazu and Xiangyi Long*



11468

The role of reticular chemistry in photoenzymatic reaction

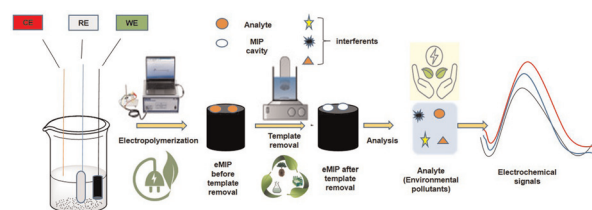
Ying Shu, Jimin Lee, Weibin Liang* and Jun Huang*



11490

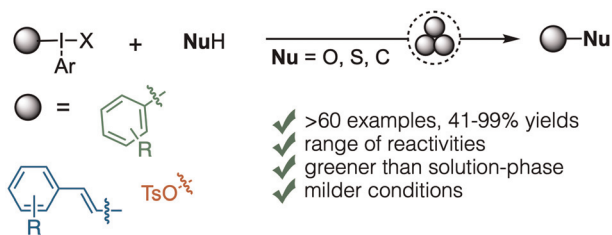
Advancing green chemistry in environmental monitoring: the role of electropolymerized molecularly imprinted polymer-based electrochemical sensors

Christopher Mwanza, Wei-Zhi Zhang, Kalulu Mulenga and Shou-Nian Ding*



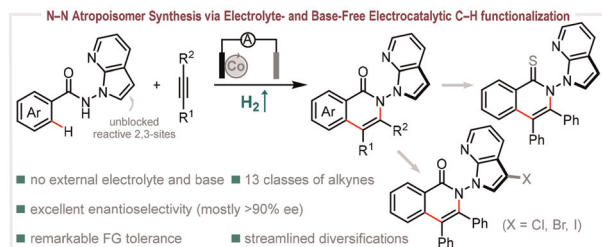
COMMUNICATIONS

11518

**Hypervalent iodine chemistry with a mechanochemical twist**

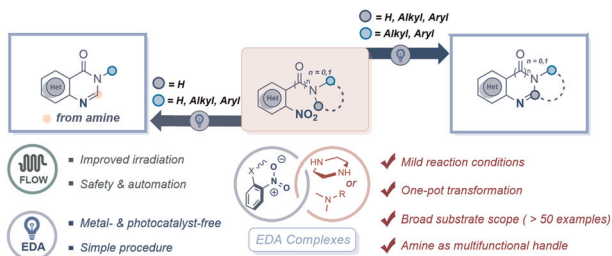
Sayad Doobary,* Miguel M. de Vries Ibáñez and Berit Olofsson*

11524

**N-N atropisomer synthesis via electrolyte- and base-free electrochemical cobalt-catalysed C-H annulation**

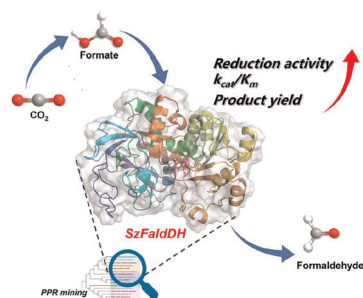
Jiating Cai, Linzai Li, Chuitian Wang, Shi Qin, Yuanyuan Li, Si-Yan Liao, Shengdong Wang, Hui Gao, Zhi Zhou, Yugang Huang,* Wei Yi* and Zhongyi Zeng*

11531

**Photo-driven reduction/cyclization of nitroarenes via electron donor-acceptor complexes: a novel method for the acquisition of N-heterocycles**

Bin Sun, Chun Lv, Xiaohui Zhuang, Yan Xu, Haijing Song, Jiayin Wang, Zhaokang Zhang, Jiayang Wang and Can Jin*

11540

**Formaldehyde dehydrogenase SzFaldDH: an indispensable bridge for relaying CO₂ bioactivation and conversion**

Boxia Guo, Xiuling Ji, Yaju Xue and Yuhong Huang*

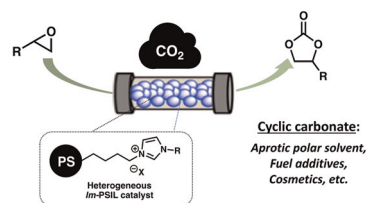


COMMUNICATIONS

11548

Continuous-flow synthesis of cyclic carbonates with polymer-supported imidazolium-based ionic liquid (Im-PSIL) catalysts

Zhibo Yu, Haruro Ishitani* and Shu Kobayashi*



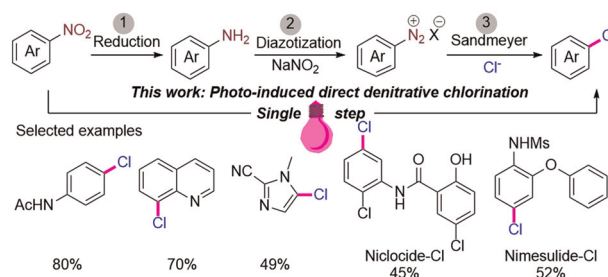
An Application of Carbon Capture and Utilization (CCU)

- High efficiency
- Environmental benignity
- Facile preparation
- Wide application
- Stable and massive production

11556

Photo-Induced FeCl₃-catalysed direct denitrative chlorination of (hetero)nitroarenes at room temperature

Mingjing Deng, Ke Liu, Zhaolun Ma, Guanzhong Luo and Longyang Dian*

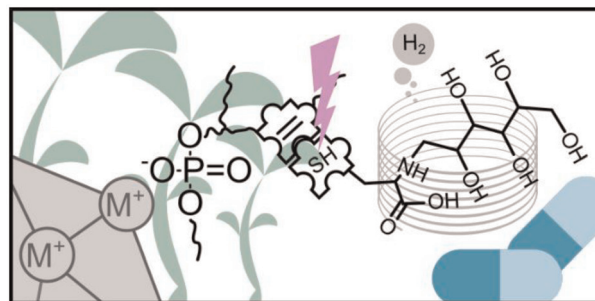


PAPERS

11563

A sustainable lecithin-based ligand for the bio-functionalization of iron and hybrid metal organic frameworks (MOFs) nanoparticles with the sugar mannose

Camilla M. Cova, Víctor Ramos, Alberto Escudero, Juan P. Holgado, Noureddine Khier* and Alessio Zuliani*



11576

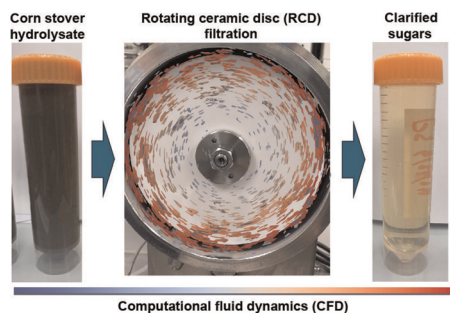
Thymol: nature's solvent for sustainable hollow fiber fabrication

Usman T. Syed, Lakshmeesha Upadhyaya, Livia M. D. Loiola, Abdul-Hamid Emwas, Alexey Volkov and Suzana P. Nunes*



PAPERS

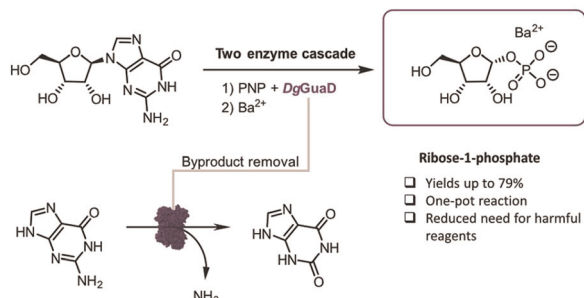
11587



Solid-liquid separation of lignocellulosic sugars from biomass by rotating ceramic disc filtration

Patrick O. Saboe, Yudong Li, Emily G. Tomashek, Eric C. D. Tan, Xiaowen Chen, Louis A. Chirban, Yian Chen, Daniel J. Schell, Eric M. Karp and Gregg T. Beckham*

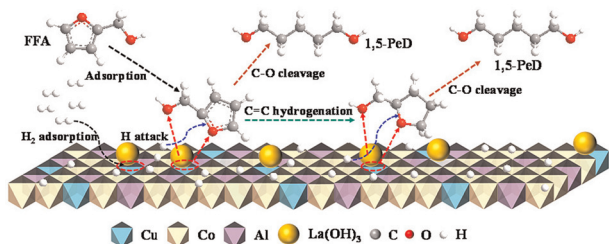
11600



A deamination-driven biocatalytic cascade for the synthesis of ribose-1-phosphate

Jonas Motter, Sarah Westarp, Jonas Barsig, Christina Betz, Amin Dagane, Felix Kaspar, Lena Neumair, Sebastian Kemper, Peter Neubauer and Anke Kurreck*

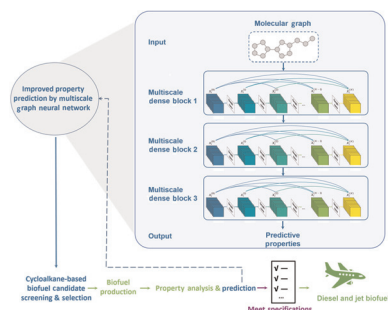
11608



Rational design of the La-doped CuCoAl hydrotalcite catalyst for selective hydrogenation of furfuryl alcohol to 1,5-pentanediol

Jingjing Tan,* Hailong Huang, Yuanna Zhang, Jinglei Cui,* Jing Zhang, Long Huang, Yongzhao Wang and Yulei Zhu*

11625



A multiscale graph neural network for predicting the properties of high-density cycloalkane-based diesel and jet range biofuels

Yanqiu Yao, Yizhuo Wang, Zhanchao Li, Jing Wang* and Hong Wang*

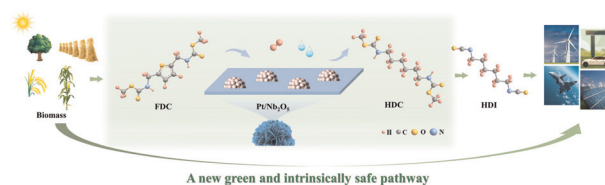


PAPERS

11636

A novel method for the green synthesis of biobased hexamethylene-1,6-dicarbamate

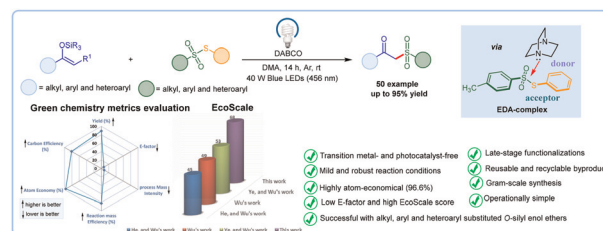
Yunhan Bai, Dule Huhe, Xinyu Du, Yucong Song, Xiaoshu Ding,* Dongsheng Zhang, Xinqiang Zhao and Yanji Wang*



11650

Visible light-driven α -sulfonylation of ketone-derived silyl enol ethers via an electron donor–acceptor complex

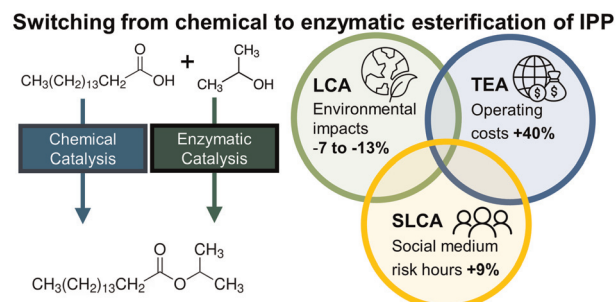
Barakha Saxena, Roshan I. Patel and Anuj Sharma*



11662

Does enzymatic catalysis lead to more sustainable chemicals production? A life cycle sustainability assessment of isopropyl palmitate

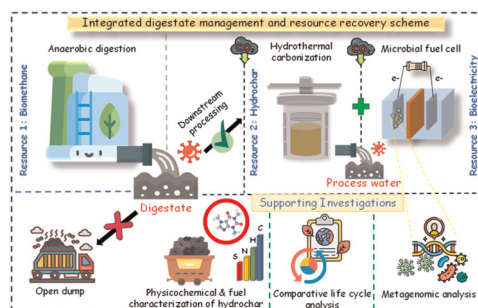
Pieter Nachtergaele,* Ozan Kocak, Yblin Roman Escobar, Jordy Motte, Dries Gabriels, Leopold Mottet and Jo Dewulf



11673

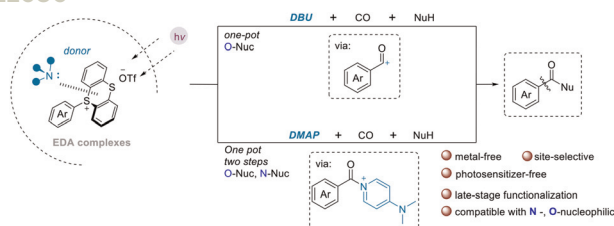
Postliminary treatment of food-waste digestate via combined hydrothermal carbonization and microbial fuel cell for bio-energy recovery: a comparative life cycle impact assessment

Shraddha Yadav, Manikanta M. Doki, Makarand M. Ghangrekar* and Brajesh K. Dubey



PAPERS

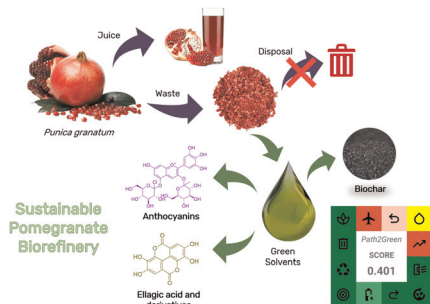
11686



Controllable tertiary amine-promoted photoactivation metal-free carbonylation of aryl sulfonium salts to aryl carboxylic acid derivatives

Jiajun Zhang, Le-Cheng Wang, Yuanrui Wang and Xiao-Feng Wu*

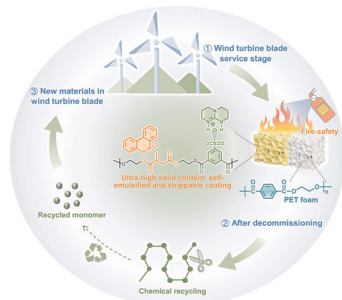
11695



Valorization of pomegranate waste through green solvent extraction and biochar production: a zero-waste biorefinery approach

Leonardo M. de Souza Mesquita,* Leticia S. Contieri, Bárbara M. C. Vaz, Vitor Sencadas, Filipe H. B. Sosa, João A. P. Coutinho, Maurício A. Rostagno and Sónia P. M. Ventura*

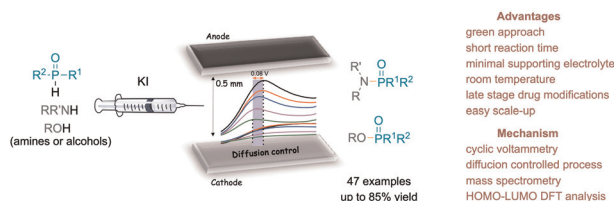
11713



A solvent-free, self-emulsified and heat-responsive polyester coating enables chemically-recyclable and fire-safe PET foam

Bei-Bei Zhang, Li-Xia Fan, Lin Chen,* Xiu-Li Wang and Yu-Zhong Wang*

11722



Flow electro-synthesis of phosphinamides and phosphoramidates through P–N coupling

Tribani Boruah, Ren Ishizeki, Alberto Roldan, Rebecca L. Melen* and Thomas Wirth*



11728

Modular access to multi-substituted allenones via environmentally friendly organocatalytic C–H allenylation of aldehydes

Xinying Hu, Ayisenbati Jialingbieke, Yuzhi Ren, Yifan Yang, Donghui Wei,* Jian Gao and Ding Du*

