

# Green Chemistry

Cutting-edge research for a greener sustainable future

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## 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.

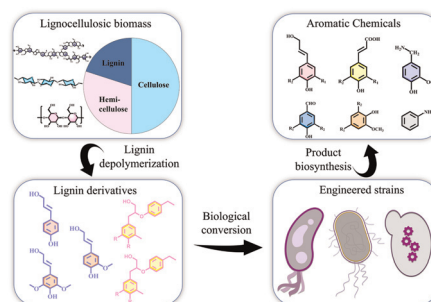
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## CRITICAL REVIEWS

11378

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

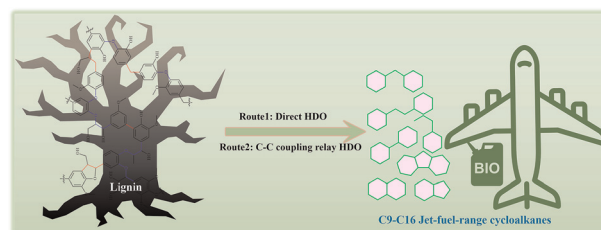
Xiao-Lei Zhang, Zhi-Hua Liu,\* Bing-Zhi Li\* and Ying-Jin Yuan



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\*



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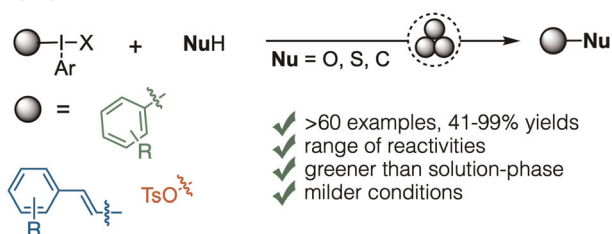
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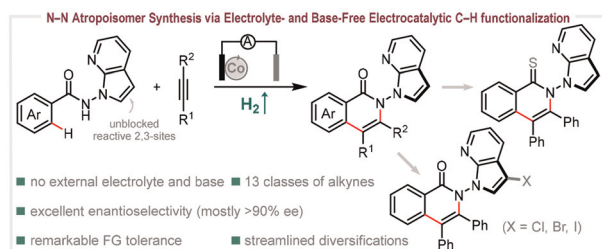
## COMMUNICATIONS

11518

**Hypervalent iodine chemistry with a mechanochemical twist**

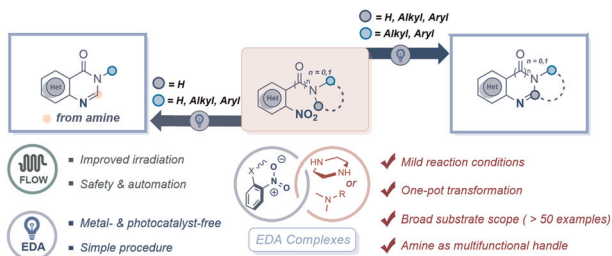
Sayad Doobary,\* Miguel M. de Vries Ibáñez and Berit Olofsson\*

11524

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

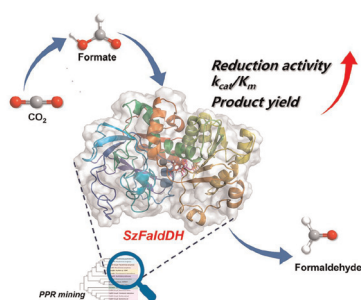
Jiating Cai, Linzai Li, Chuitian Wang, Shi Qin, Yuanyuan Li, Si-Yan Liao, Shengdong Wang, Hui Gao, Zhi Zhou, Yugang Huang,\* Wei Yi\* and Zhongyi Zeng\*

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 CO<sub>2</sub> bioactivation and conversion**

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

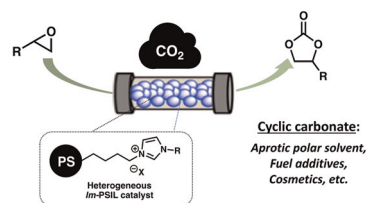


## COMMUNICATIONS

11548

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

Zhibo Yu, Haruro Ishitani\* and Shu Kobayashi\*



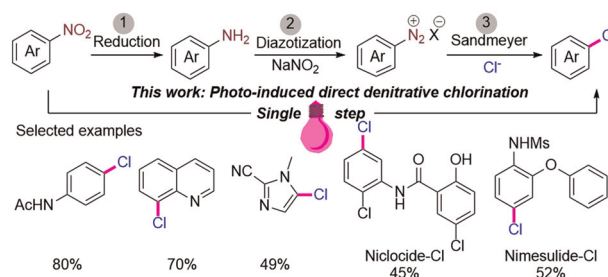
#### An Application of Carbon Capture and Utilization (CCU)

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

11556

### Photo-Induced FeCl<sub>3</sub>-catalysed direct denitrative chlorination of (hetero)nitroarenes at room temperature

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

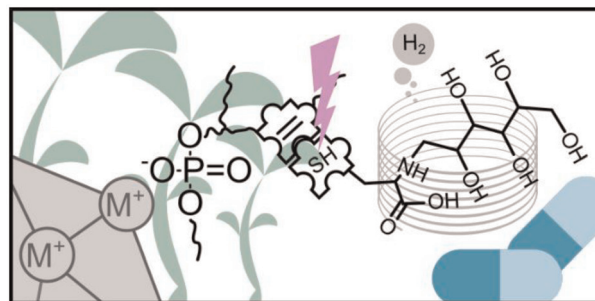


## PAPERS

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 Khair\* and Alessio Zuliani\*



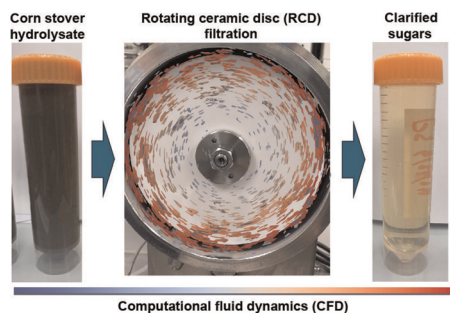
11576

### 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\*



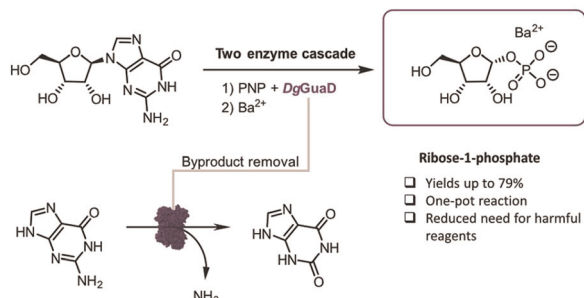
11587



### 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\*

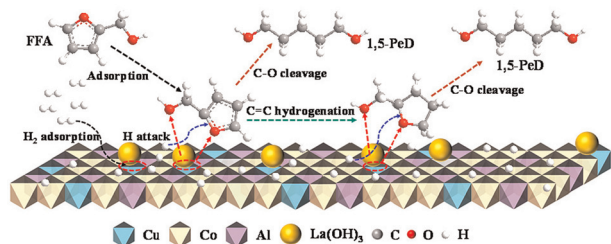
11600



### 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\*

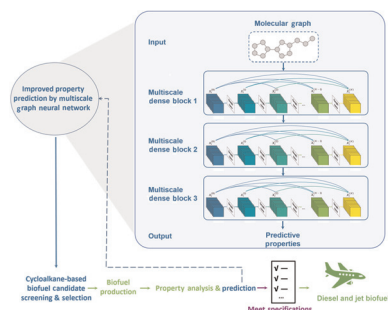
11608



### 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\*

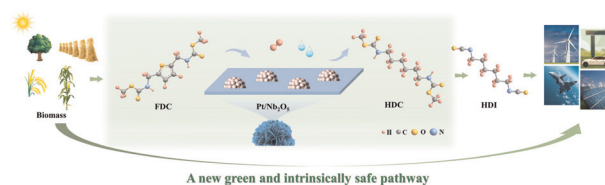


## PAPERS

11636

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

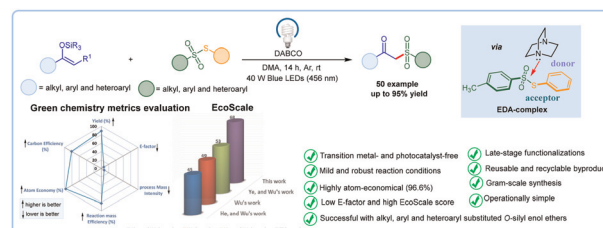
Yunhan Bai, Dule Huhe, Xinyu Du, Yucong Song, Xiaoshu Ding,\* Dongsheng Zhang, Xinqiang Zhao and Yanji Wang\*



11650

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

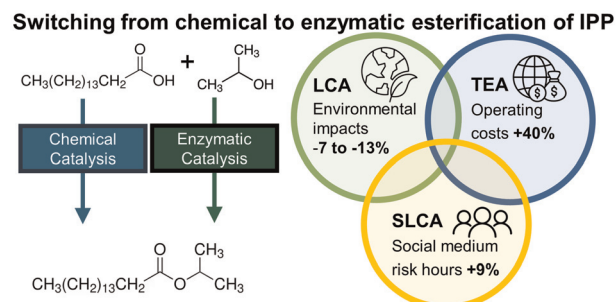
Barakha Saxena, Roshan I. Patel and Anuj Sharma\*



11662

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

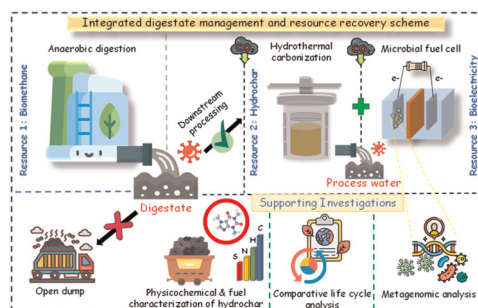
Pieter Nachtergaele,\* Ozan Kocak, Yblin Roman Escobar, Jordy Motte, Dries Gabriels, Leopold Mottet and Jo Dewulf



11673

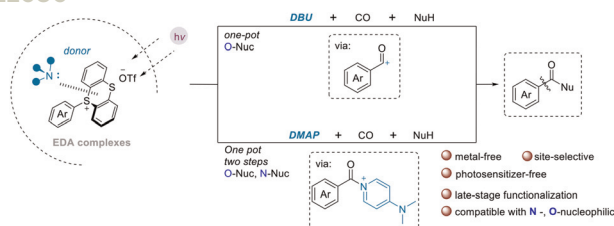
## Postliminary treatment of food-waste digestate via combined hydrothermal carbonization and microbial fuel cell for bio-energy recovery: a comparative life cycle impact assessment

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



## PAPERS

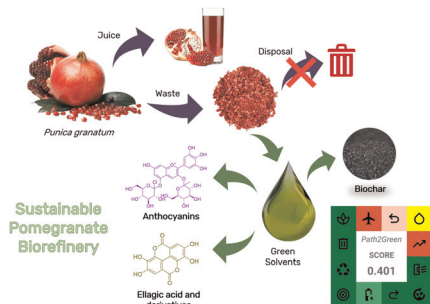
11686



### 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\*

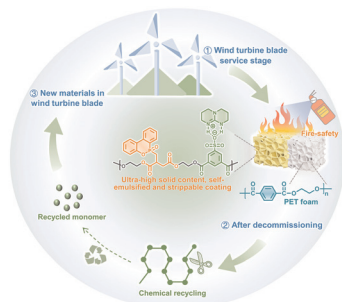
11695



### 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 Sônia P. M. Ventura\*

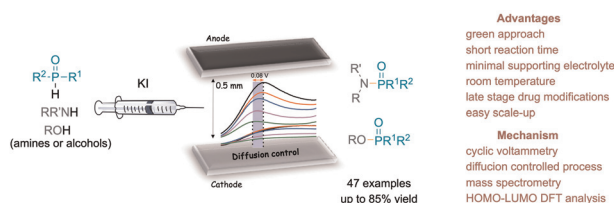
11713



### 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\*

