

Green Chemistry

Cutting-edge research for a greener sustainable future

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Cover

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

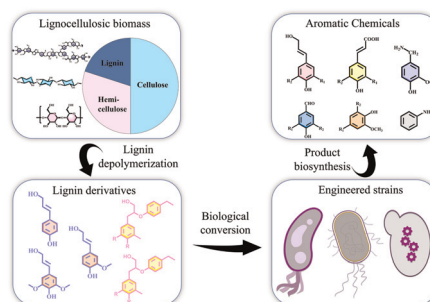
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CRITICAL REVIEWS

11378

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

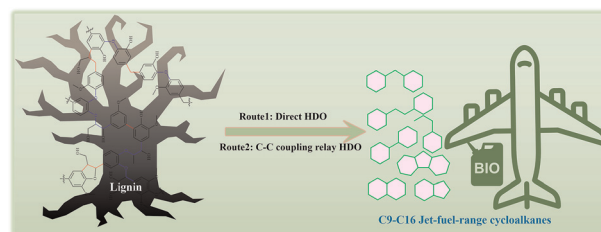
Xiao-Lei Zhang, Zhi-Hua Liu,* Bing-Zhi Li* and Ying-Jin Yuan



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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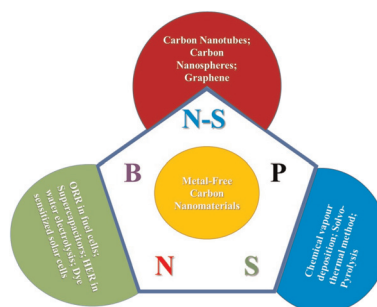
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CRITICAL REVIEWS

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

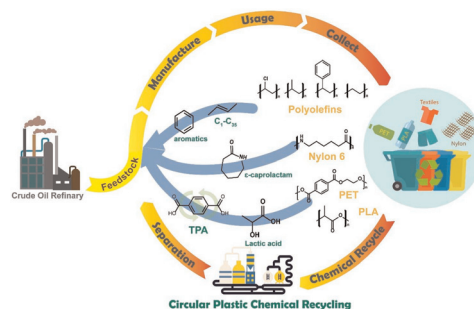


TUTORIAL REVIEWS

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Fundamental, technical and environmental overviews of plastic chemical recycling

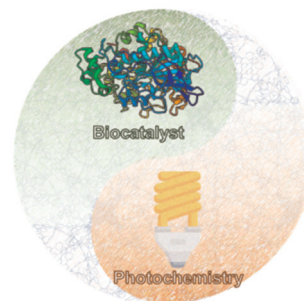
Hui Luo,* Helen Tyrrell, Jingyang Bai, Rukayya Ibrahim Muazu and Xiangyi Long*



11468

The role of reticular chemistry in photoenzymatic reaction

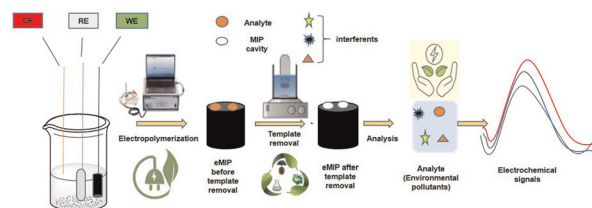
Ying Shu, Jimin Lee, Weibin Liang* and Jun Huang*

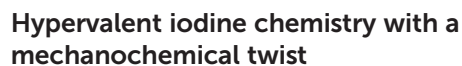


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Advancing green chemistry in environmental monitoring: the role of electropolymerized molecularly imprinted polymer-based electrochemical sensors

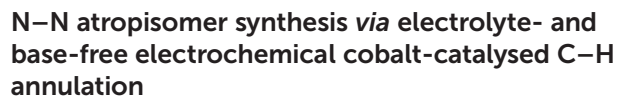
Christopher Mwanza, Wei-Zhi Zhang, Kalulu Mulenga and Shou-Nian Ding*





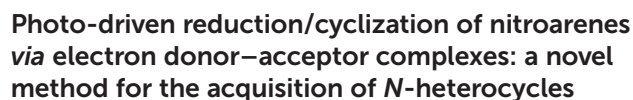
Sayad Doobary,* Miguel M. de Vries Ibáñez and Berit Olofsson*

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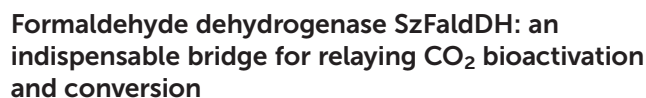
Jiating Cai, Linzai Li, Chuitian Wang, Shi Qin,
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Zhi Zhou, Yugang Huang,* Wei Yi* and Zhongyi Zeng*

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

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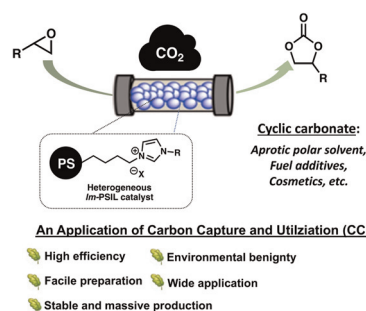
Boxia Guo, Xiuling Ji, Yaju Xue and Yuhong Huang*

COMMUNICATIONS

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

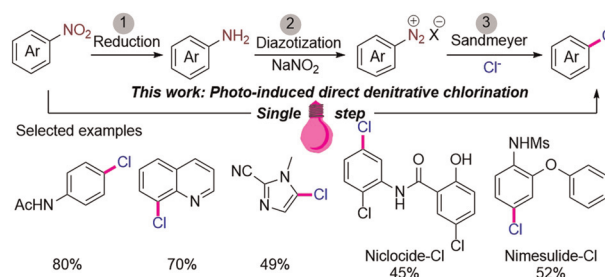
Zhibo Yu, Haruro Ishitani* and Shu Kobayashi*



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Photo-Induced FeCl_3 -catalysed direct denitrative chlorination of (hetero)nitroarenes at room temperature

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

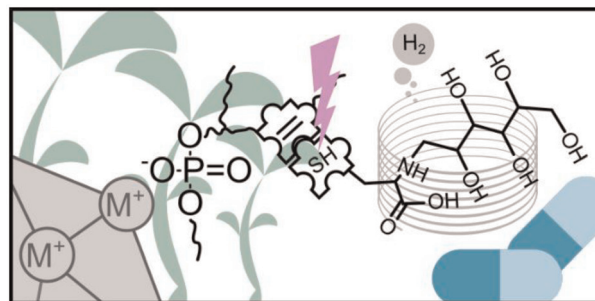


PAPERS

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

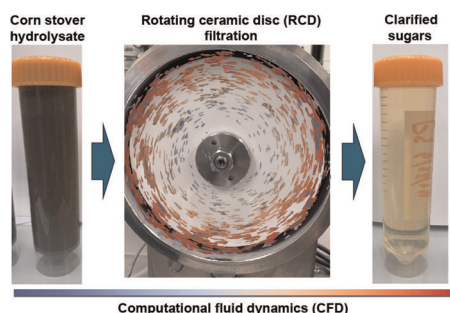
Thymol: nature's solvent for sustainable hollow fiber fabrication

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



PAPERS

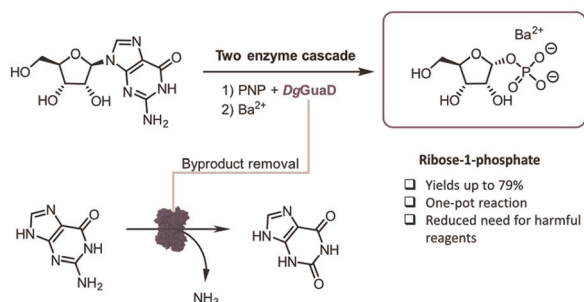
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Solid-liquid separation of lignocellulosic sugars from biomass by rotating ceramic disc filtration

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*

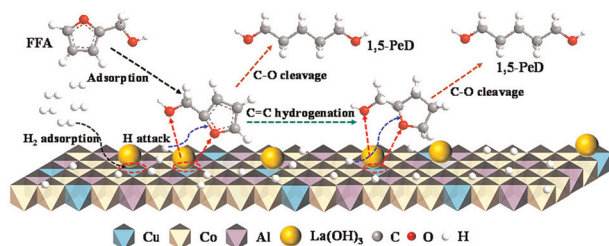
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A deamination-driven biocatalytic cascade for the synthesis of ribose-1-phosphate

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

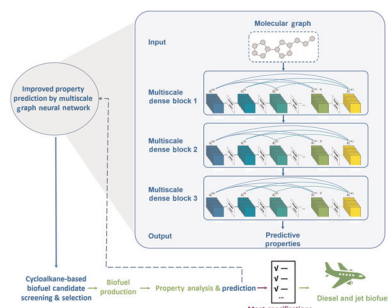
11608



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*

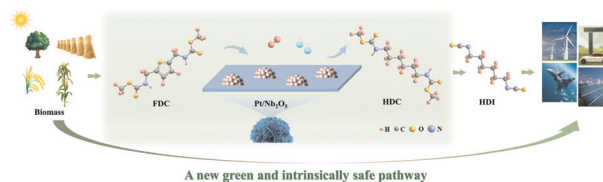


PAPERS

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

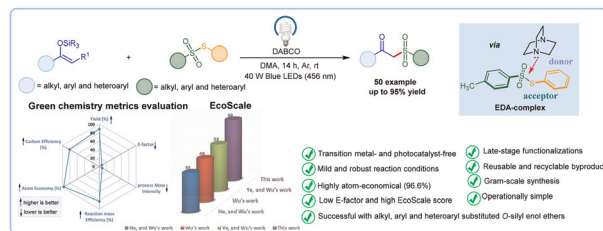
Yunhan Bai, Dule Huhe, Xinyu Du, Yucong Song, Xiaoshu Ding,* Dongsheng Zhang, Xinqiang Zhao and Yanji Wang*



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

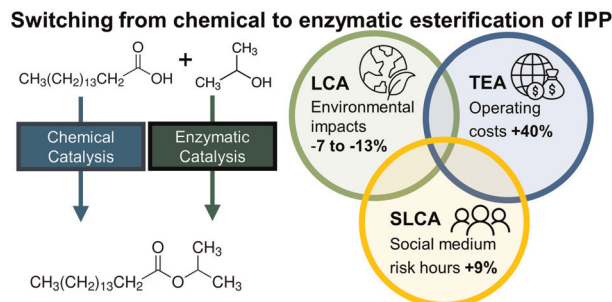
Barakha Saxena, Roshan I. Patel and Anuj Sharma*



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

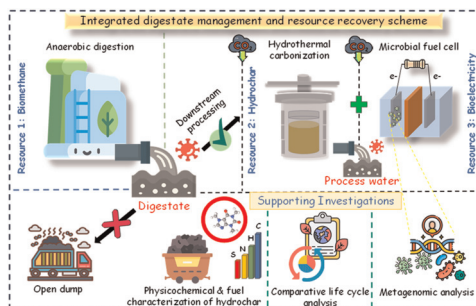
Pieter Nachtergaele,* Ozan Kocak, Yblin Roman Escobar, Jordy Motte, Dries Gabriels, Leopold Mottet and Jo Dewulf



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



The reaction scheme illustrates the synthesis of N- and O-nucleophilic aromatic ketones. It begins with the formation of an EDA complex between a donor (D) and an acceptor (A) molecule, which is irradiated with UV light (hv) to generate a triplet state. This triplet state then reacts with an O-nucleophile (O-Nuc) in a one-pot process using DBU, CO, and NuH as reagents. Alternatively, the reaction can proceed via a two-step process using DMAP, CO, and NuH, where the intermediate is an N-nucleophile (N-Nuc). The final product is an aromatic ketone where the nucleophile (Nu) is attached to the aromatic ring (Ar) via a carbonyl group.

Legend:

- metal-free
- site-selective
- photosensitizer-free
- late-stage functionalization
- compatible with N-, O-nucleophilic

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

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

Juice

Waste

Disposal

Punica granatum

Biochar

Anthocyanins

Green Solvents

Ellagic acid and

Sustainable Pomegranate Biorefinery

Path2Green	SCORE
8.401	8.401

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*

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*

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

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

Advantages

- green approach
- short reaction time
- minimal supporting electrolyte
- room temperature
- late stage drug modifications
- easy scale-up

Mechanism

- cyclic voltammetry
- diffusion controlled process
- mass spectrometry
- HOMO-LUMO DFT analysis

47 examples
up to 85% yield

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

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*

