

Green Chemistry

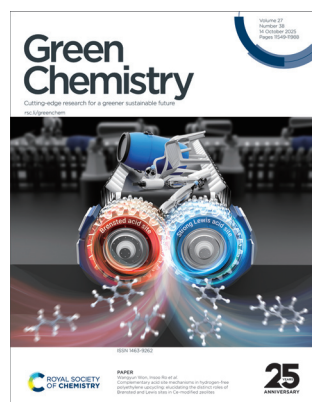
Cutting-edge research for a greener sustainable future

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See Wangyun Won, Insoo Ro *et al.*, pp. 11769–11781.

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Inside cover
See Yuan Pan *et al.*, pp. 11739–11768.

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EDITORIAL

11559

Introduction to green and sustainable batteries

Cristina Pozo-Gonzalo, Rebeca Marcilla, Maria-Magdalena Titirici and Theresa Schoetz

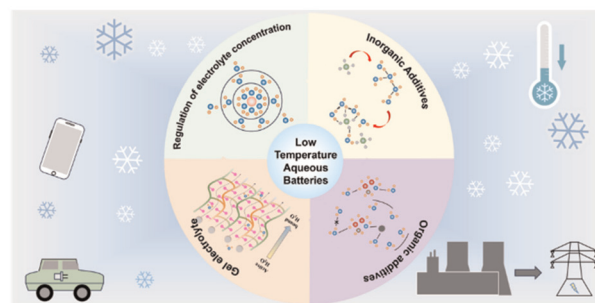


CRITICAL REVIEWS

11561

Electrolyte engineering for low-temperature aqueous batteries: strategies, mechanisms, and perspectives

Jian Wang, Linlong Zuo, Ya He, Ziming Wan, Pengfei Yao, Junrun Feng,* Lin Sheng* and Zhangxiang Hao*



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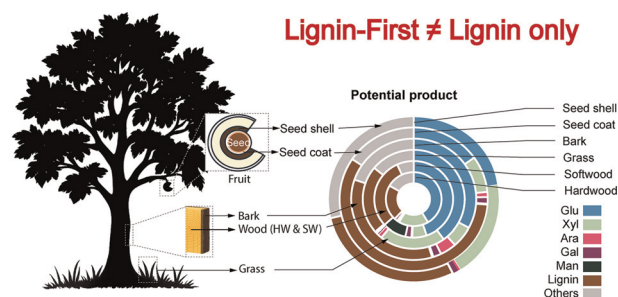


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11581

Strategic design principles for greener biorefineries: a substrate–process matrix emphasizing complete lignocellulose utilization from various biomass feedstocks

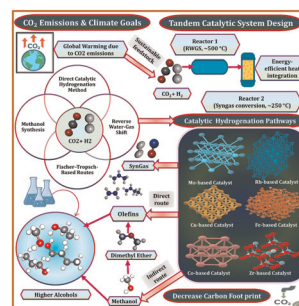
Jianguo Guan, Amir Khan, Yi Zhang, Yixing Zhou, Molly Meng-Jung Li, Raffel Dharma Patria* and Shao-Yuan Leu*



11607

Review on sequential catalysis for higher alcohols: overcoming barriers in direct CO₂ hydrogenation

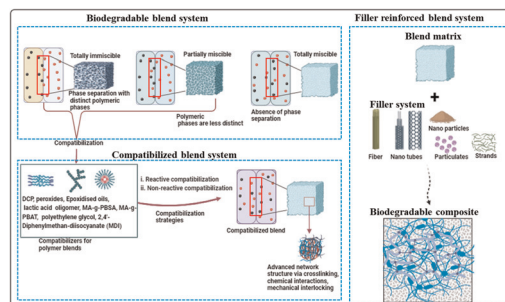
Abdulaziz A. M. Abahussain, Fahd A. Nasr, Ahmed S. Al-Fatesh, Padmanabhan Sambandam, Mohammed Al-zharani, Fekri Abdurqab Ahmed Ali, Nadavala Siva Kumar, Sulaiman A. Alsalamah, Ganesan Subbiah, Gunganathan Loganathan, Saravanan Palanivelu, Shoba Gunasekaran,* Kavitha Chandrasekaran and Tamizhdurai Perumat*



11656

Recent advances in biodegradable polymer blends and their biocomposites: a comprehensive review

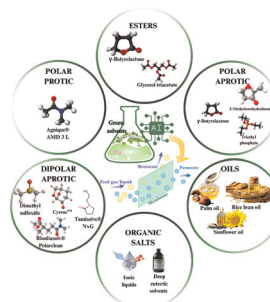
Kehinde Olonisakin, Amar K. Mohanty, Mahendra Thimmanagari and Manjusri Misra*



11705

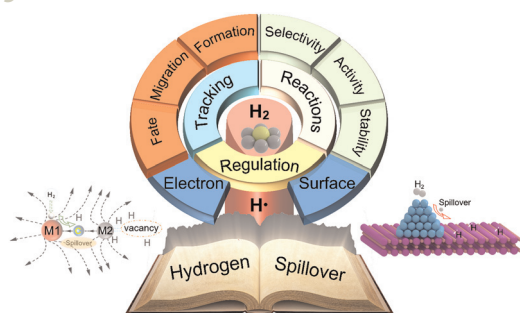
Green solvents in membrane separation: progress, challenges, and future perspectives for sustainable industrial applications

Boon Kee Voon, Yen Juin Yap and Wai Fen Yong*



TUTORIAL REVIEW

11739

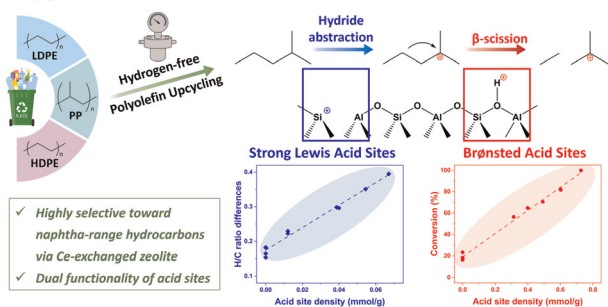


Tracking the hydrogen spillover of heterogeneous catalysts in hydrogenation: from formation, migration, and regulation to fate

Guangxun Sun, Peng Xue, Lei Wang, Xin Zhang, Guangzheng Sun, Zhidong Wang, Qian Zhang, Peng Zhang, Yunqi Liu and Yuan Pan*

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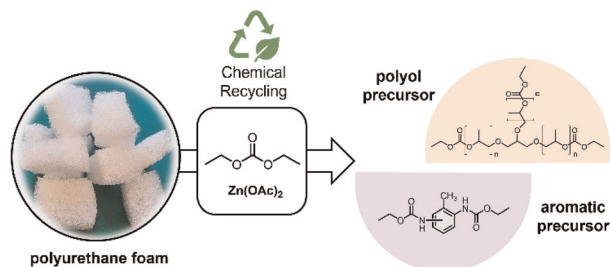
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Complementary acid site mechanisms in hydrogen-free polyethylene upcycling: elucidating the distinct roles of Brønsted and Lewis sites in Ce-modified zeolites

Taeun Kwon, Jonghyun Park, Ki Hyuk Kang, Dae Sung Jung, Wangyun Won* and Insoo Ro*

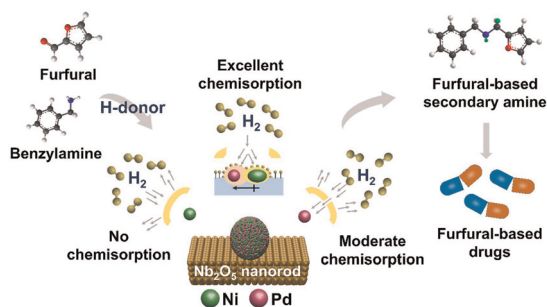
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Polyurethane depolymerization by dialkyl carbonates: toward sustainable chemical recycling

Ege Hosgor, Ricardo P. Martinho, Jip S. Hoogland, Yuqi Jia, Anahi Morales Gomez, Willem Verboom, Jean-Paul Lange* and Jurriaan Huskens*

11794



One-pot, *in situ* reductive catalytic approach for biomass furfural-based secondary amines under ambient conditions

Palanivel Subha, Qizhi Luo, Hu Li* and Putla Sudarsanam*

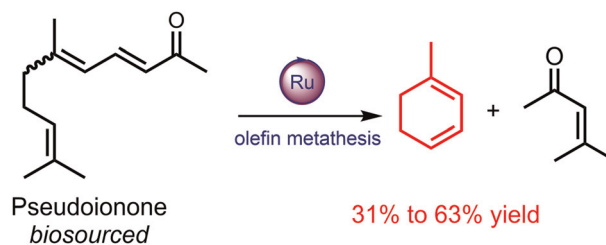


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Adding value to terpenoids: from pseudoionone to 1-methyl-1,3-cyclohexadiene

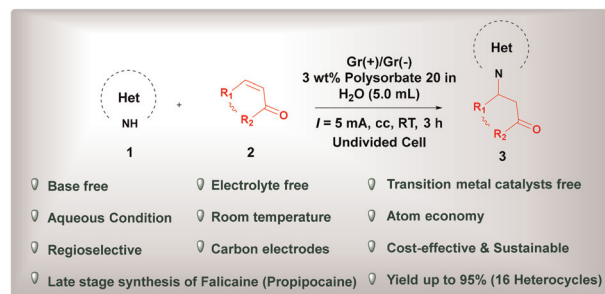
Alexandre Damiani, Lars Faber, Batoul Karim, Christian Bruneau, Wagner A. Carvalho, Dalmo Mandelli* and Cédric Fischmeister*



11816

Non-ionic micelle-inspired electrochemical functionalization of diverse NH-heterocycles for the synthesis of β -aminoketones

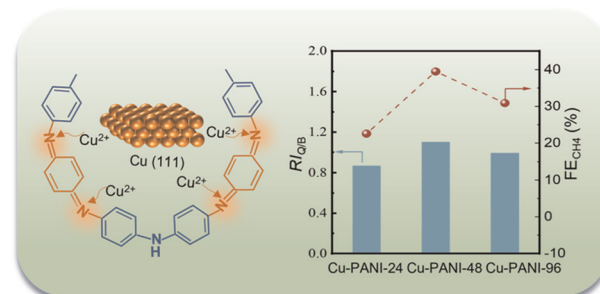
Sanjay M. Madurkar,* Kuldeep Singh Bhati, Girdhar Pal Singh, Renu Rathore, Dinesh Kumar Yadav and Siddharth Sharma*



11825

Modulating the Cu (111) facet for selective CO₂ electroreduction via tuning the oxidation state of polyaniline

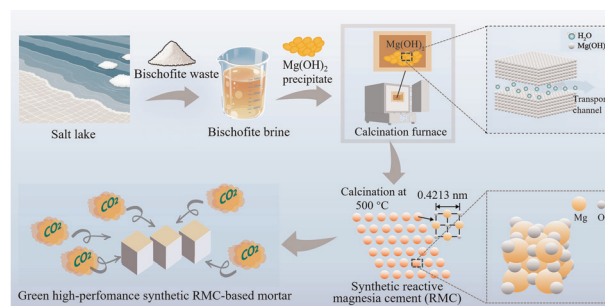
Yeqing Xu, Chong-Yong Lee,* Yong Zhao, Yu Yang, Xin Wang, Zhiqi Chen, Klaudia Wagner, Wei Kong Pang, Gordon G. Wallace and Caiyun Wang*



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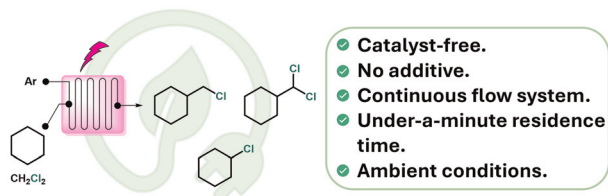
Technical and carbon footprint assessment of mortars derived from CO₂ and magnesia recovered from bischofite

Yufeng Song, Jiase Wang, Xinpeng Wang, Jiahao Zhou, Cise Unluer, Tao Shi, Aoyun Zhang, Chenggong Chang and Shaoqin Ruan*



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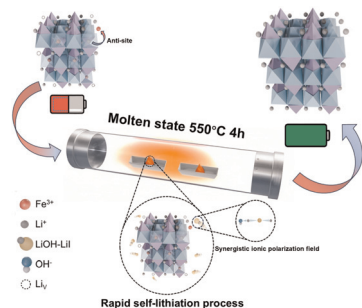
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Direct C(sp³)-H chloromethylation through CH₂Cl₂ activation using non-thermal plasma

Fabian Bruel, Gabriel Morand,* Stéphanie Ognier, Pierre Dedieu, Alain Favre-Réguillon, Cyril Ollivier, Louis Fensterbank and Michael Tatoulian

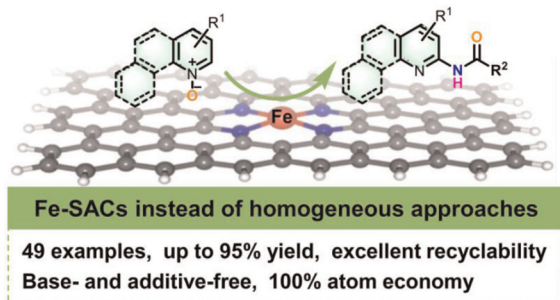
11870



Dipole modulation engineering for the recycling of spent lithium iron phosphate

Lin Liu, Wenzhi Huang, Haoshen Liang, Zexin Su, Kaixiang Shi,* Jie Ren,* Lichao Tan, Yonggang Min and Qianbing Liu*

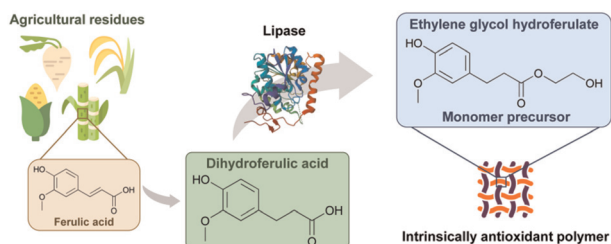
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Heterogeneous Fe single-atom catalysis for C₂-H amidation of pyridine/quinoline N-oxides: streamlined synthesis of pharmaceutical scaffolds

Jinhua Ou, Song Yu, Duoduo Liu, Han Jiang, Can Lyu, Keyi Chen, Jie Li, Zhuobin Yu, Kaijian Liu* and Jinxuan Liu*

11892



Maximized lipase-catalysed production of a monoester of ferulic acid derivatives and ethylene glycol: a key step toward intrinsically antioxidant biosourced polymers

Felipe D. Blanco, Melissa P. M. Geever, Ulf Hanefeld, Jean-Luc Six, Latifa Chebil, Catherine Humeau and Yann Guivarc'h*

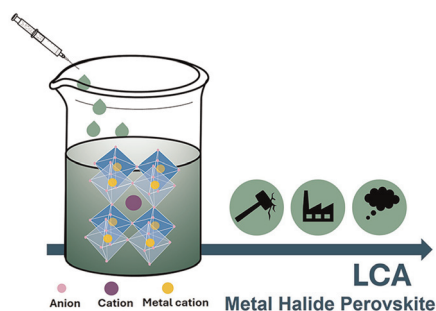


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Assessment of the environmental and human health impact in the synthesis and processing of metal halide perovskite active layers using GVL

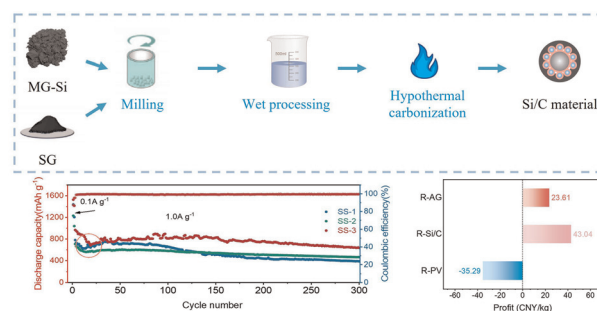
Filippo Campana, Daniela Lanari, Filippo De Angelis and Luigi Vaccaro*



11914

Upcycling of long-term Si/C composites by introducing interfacial chemical bonds from spent solar photovoltaic and lithium-ion batteries

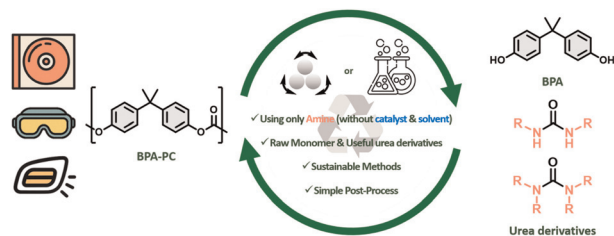
Zeyu Dong, JieXiang Li, Peng Ge and Yue Yang*



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Catalyst- and solvent-free depolymerization of poly(bisphenol A carbonate): aminolysis

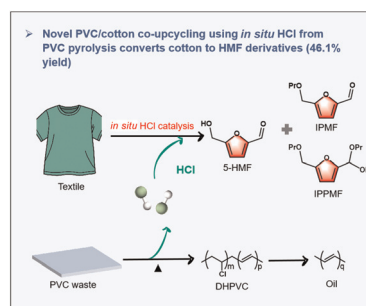
Hyo Won Lee, Ji Yeong Lee, Lars Borchardt and Jeung Gon Kim*



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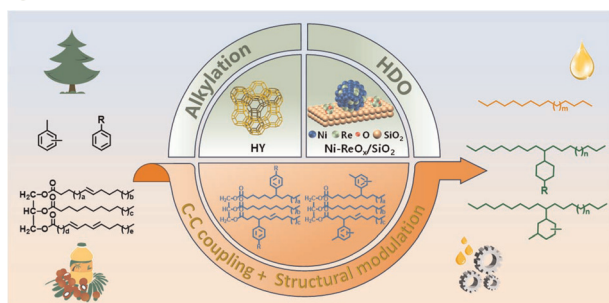
Co-upcycling of polyvinyl chloride/cotton mixed waste into 5-isopropoxymethylfurfural

Dawang Chu, Jiali Weng, Xu Liu, Hongkun Wang, Yanran Cui, Lei Nie* and Zhenglong Li*



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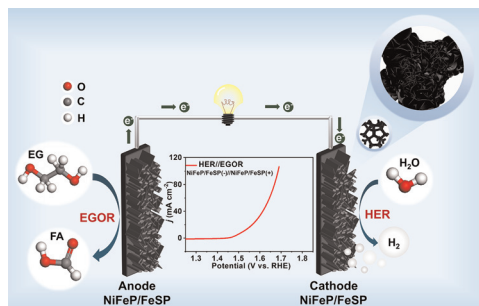
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Catalytic coproduction of renewable lubricant base oils and diesel fuels from bio-lipids and aromatics *via* alkylation and hydrodeoxygenation

Binbin Zhou, Nan Wang, Yixin Fan, Yuanyang Lin, Sibao Liu* and Guozhu Liu*

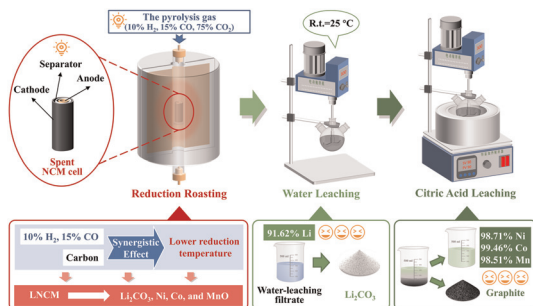
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Sulfur-doped bimetallic phosphides with regulated intermediate adsorption for efficient polyethylene terephthalate upgrading

Xiaofen Huang, Zhiyong Ye, Kaige Yu, Xingchen Zhou, Xianglong Hu, Yixuan Jin, Xueliang Jiang* and Huan Yang*

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The recovery of valuable metals from spent ternary lithium-ion batteries by repurposing the pyrolysis gas

Zhen Xiong, Hairong Zhang,* Can Wang, Haijun Guo, Mengkun Wang, Hailong Li, Xuefang Chen, Lian Xiong and Xinde Chen*

CORRECTION

11985

Correction: Recycling of anhydride-cured epoxy resin-based carbon fiber-reinforced composites *via* a β -phenethyl alcohol/TBD catalytic system

Renlong Min, Chenyu Zhang,* Haijuan Kong, Shuo Liu and Ziyao Peng

