

# Green Chemistry

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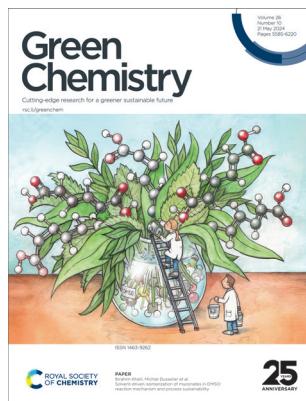


### Cover

See Indrajit Ghosh,  
Burkhard König et al.,  
pp. 5845–5851.

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### Inside cover

See Ibrahim Khalil,  
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pp. 5852–5861.

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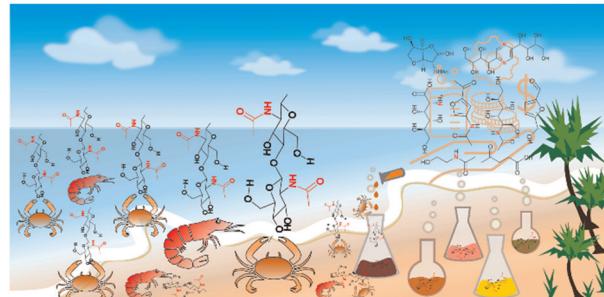
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## CRITICAL REVIEWS

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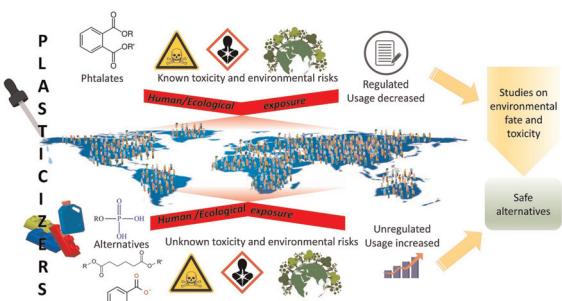
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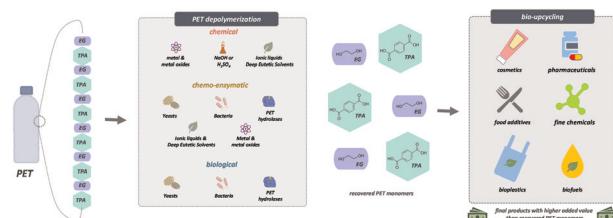
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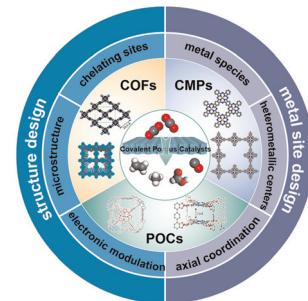


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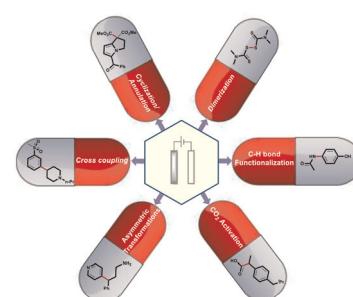
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## Challenges and opportunities on sustainable electrochemical transformations: application towards the synthesis of pharmaceuticals and precursors of drug-like molecules

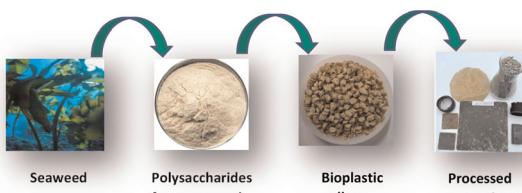
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## Bioplastics from seaweeds- promoting circular economies

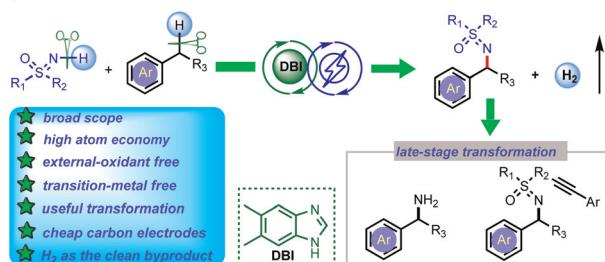


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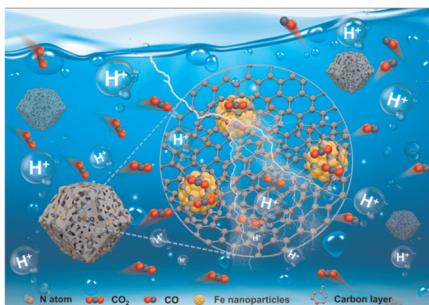
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Electrochemical N(sp<sup>2</sup>)–H/C(sp<sup>3</sup>)–H cross-coupling reaction between sulfoximines and alkylarenes

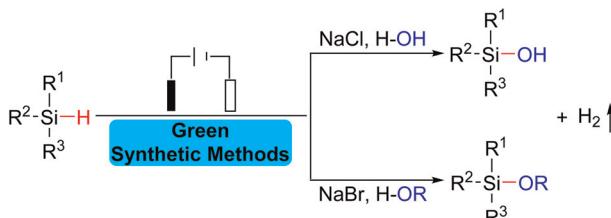
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## Electrochemical strategies for NaX-mediated hydrolysis and alcoholysis of hydrosilanes under mild conditions

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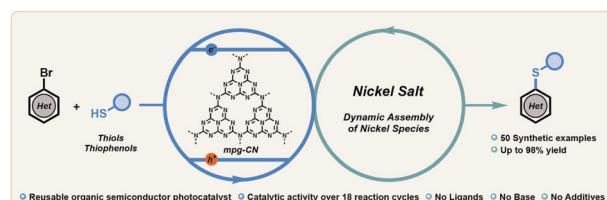


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**C(sp<sup>2</sup>)–S cross-coupling reactions with nickel, visible light, and mesoporous graphitic carbon nitride**

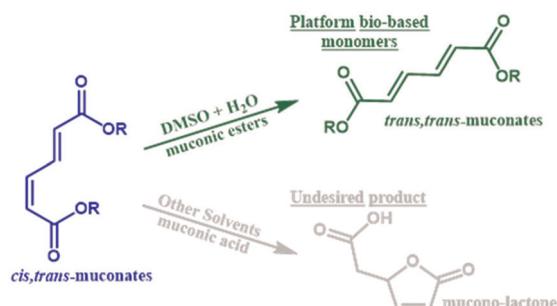
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**Solvent-driven isomerization of muconates in DMSO: reaction mechanism and process sustainability**

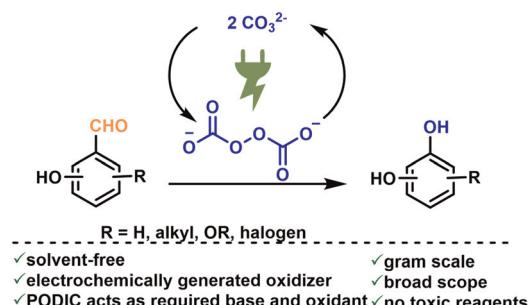
Ibrahim Khalil,\* Fatima Rammal, Lisa De Vriendt, An Sofie Narmon, Bert F. Sels, Sebastian Meier and Michiel Dusselier\*



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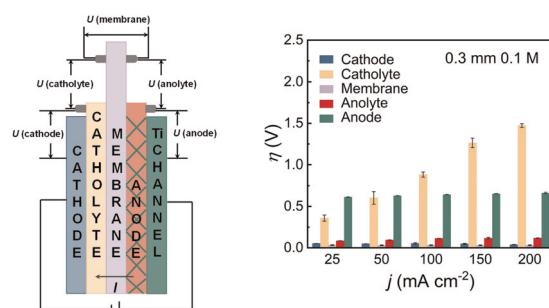
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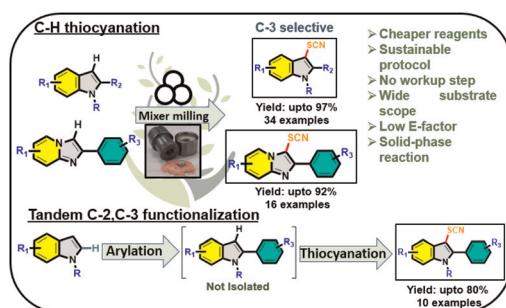
**Low-cell-voltage electrosynthesis of hydrogen peroxide**

Junyu Yan, Jing Xia and Kai Wang\*



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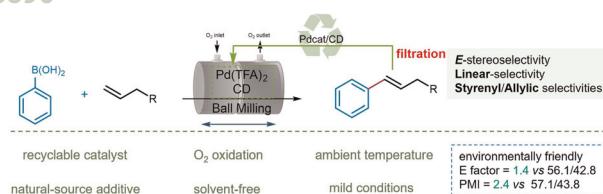
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**A solvent-free mechanochemical electrophilic C–H thiocyanation of indoles and imidazo[1,2-a]pyridines using a cost-effective combination of *N*-chlorosuccinimide–NaSCN and tandem C–C and C–S bond formation**

Soumik Saha, Abigail B. Pinheiro, Amrita Chatterjee,\*  
Zigmee T. Bhutia and Mainak Banerjee\*

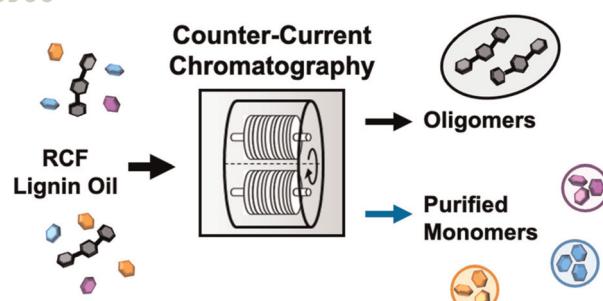
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**Mechanochemical aerobic oxidative Heck coupling by polymer-assisted grinding: cyclodextrin additive facilitating regioselectivity control**

Keyu Xiang, Haowen Shou, Chenhui Hu, Weike Su and Jingbo Yu\*

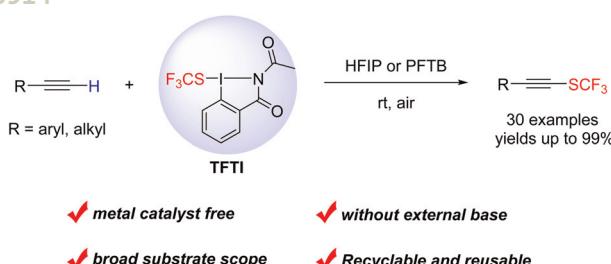
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**Counter-current chromatography for lignin monomer–monomer and monomer–oligomer separations from reductive catalytic fractionation oil**

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**Direct trifluoromethylthiolation of terminal alkynes mediated by a hypervalent trifluoromethylthio-iodine(III) reagent; boosting effect of fluorinated alcohol**

Yu-Xin Cheng, Xiao-Guang Yang, Feng-Huan Du and Chi Zhang\*

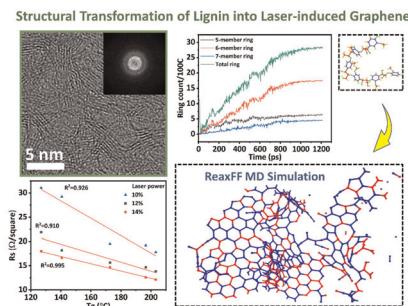


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**Probing laser-induced structural transformation of lignin into few-layer graphene**

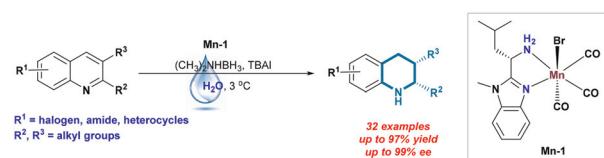
Hanwen Zhang, Qianwei Li, Karl D. Hammond, Xiaoqing He, Jian Lin and Caixia Wan\*



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**Manganese-catalyzed asymmetric transfer hydrogenation of quinolines in water using ammonia borane as a hydrogen source**

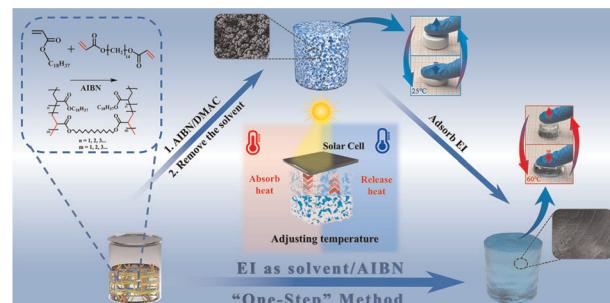
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**Octadecyl acrylate-based self-supporting elastic phase change framework materials for the enhancement of photovoltaic conversion efficiency**

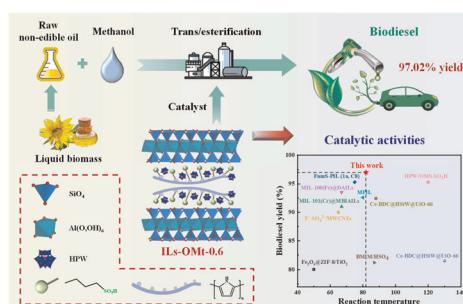
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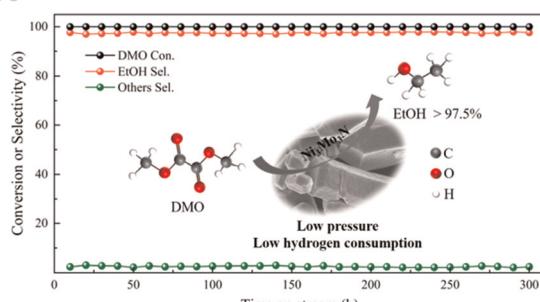
**A practical approach for enhanced biodiesel production using organic modified montmorillonites as efficient heterogeneous hybrid catalysts**

Lijuan He, Long Chen, Yingxia Nie, Minglu He, Guiyang Wu, Yan Li, Hanjing Tian\* and Heng Zhang\*



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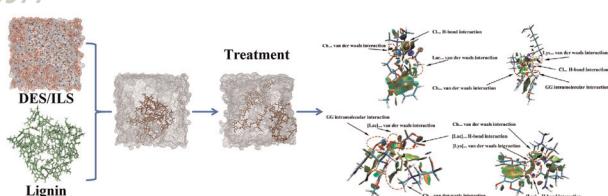
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**Bimetallic nickel molybdenum nitride catalyst with low pressure and reduced hydrogen consumption for hydrogenation of dimethyl oxalate to ethanol: the impact of reduction temperature on catalytic performance**

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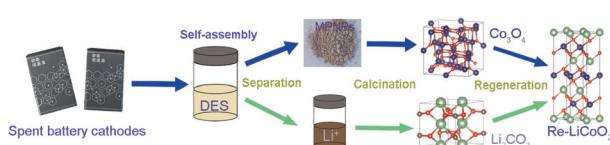
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**Tailoring a suitable partner system for cholinium cation to build effective solvents for biomass deconstruction**

Xuedan Hou, Guojian Feng, Zishi Chen, Hongjie Wu, Hengyun Zhao, Shilin Cao\* and Jason P. Hallett\*

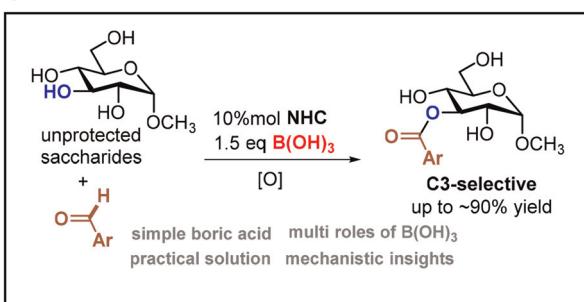
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**Upcycling spent lithium-ion battery cathodes into cobalt-polyphenol networks by DES dissolution and solvent-induced crystallization**

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**NHC/B(OH)<sub>3</sub>-mediated C3-selective acylation of unprotected monosaccharides: mechanistic insights and toward simpler/greener solutions**

Jiamiao Jin, Jiangtao Guo, Feng Xu, Ya Lv, Guanjie Wang, Jia Song, Wen-Xin Lv, Tingting Li\* and Yonggui Robin Chi\*



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## Driving multicolor lignin-based carbon quantum dots into selective metal-ion recognition and photocatalytic antibiotic decomposition

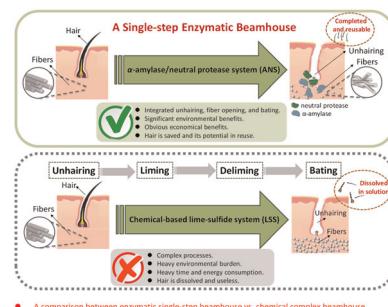
Pengfei Zhou, Jikun Xu,\* Jun Guo, Xinyan Hou, Lin Dai, Xiao Xiao and Kaifu Huo



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## Optimization of a single-step enzymatic beamhouse: toward eco-friendly leather manufacturing

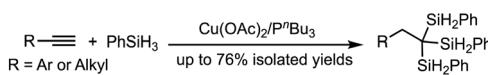
Mingrui Zhang, Chao Tang, Hui Liu, Shufa Qin, Jie Liu, Mădălina Georgiana Albu Kaya and Keyong Tang\*



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## Solvent-free copper-catalyzed trisilylation of alkynes: a practical and atom-economical approach for accessing 1,1,1-trisilylalkanes

Jia Li and Shaozhong Ge\*

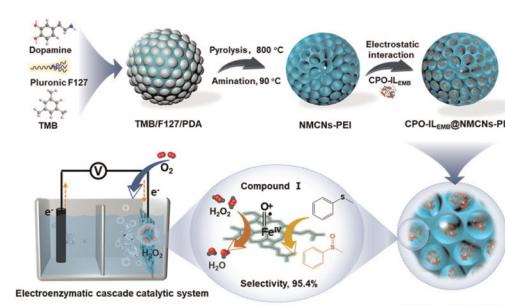


- ⊕ high chemo- and regioselectivity
- ⊕ readily available copper catalyst
- ⊕ solvent-free
- ⊕ broad scope of alkynes
- ⊕ mild reaction conditions
- ⊕ high functional group tolerance

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## The selective oxidation of thioanisole to sulfoxide using a highly efficient electroenzymatic cascade system

Xuefang Zhu, Xiyue Liu, Yu Ding, Shuni Li, Yucheng Jiang\* and Yu Chen\*



## PAPERS

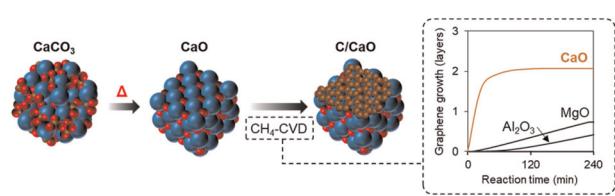
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### Visible light-induced oxidative esterification of mandelic acid with alcohols: a new synthesis of $\alpha$ -ketoesters

Zechuan Mao, Kun Xia, Kaifa Zhang, Hui Chen, Mingqiang Li, Ablimit Abdukader\* and Weiwei Jin\*

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### A thermodynamically favorable route to the synthesis of nanoporous graphene templated on CaO via chemical vapor deposition

Kritin Pirabul, Qi Zhao, Shogo Sunahiro, Zheng-Ze Pan,\* Takeharu Yoshii, Yuichiro Hayasaka, Eddie Hoi-Sing Pang, Rachel Crespo-Otero, Devis Di Tommaso,\* Takashi Kyotani and Hirotomo Nishihara\*

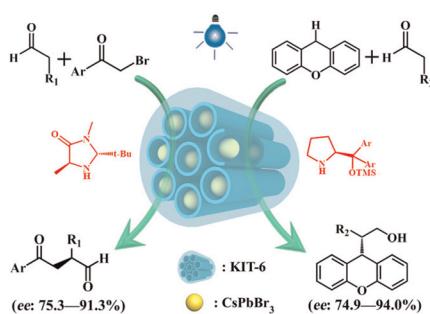
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### Photoredox catalytic aminomethylation of sulfonylthiazoles

Li Meng, Jun Dong, Yan Tang, Hekun Yang, Long Sun, Jingchao Chen\* and Baomin Fan\*

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### Lead-halide perovskite quantum dots embedded in mesoporous silica as heterogeneous photocatalysts combined with organocatalysts for asymmetric catalysis

Hao Ren, Yi-Ming Li, Wen-Jing Li, Qing-Chao Zhai and Lin Cheng\*

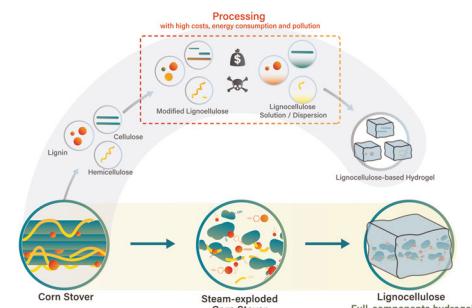


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**Lignocellulosic full-components hydrogelation using steam-exploded corn stover**

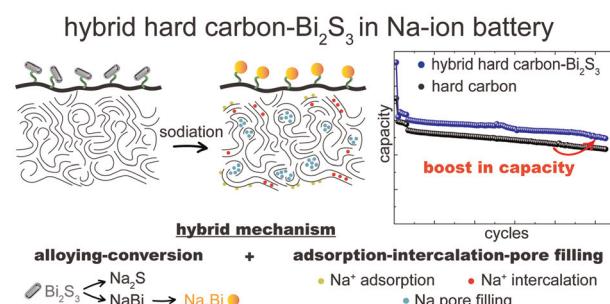
Tairan Pang, Lan Wang\* and Hongzhang Chen



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**Exploring hybrid hard carbon/Bi<sub>2</sub>S<sub>3</sub>-based negative electrodes for Na-ion batteries**

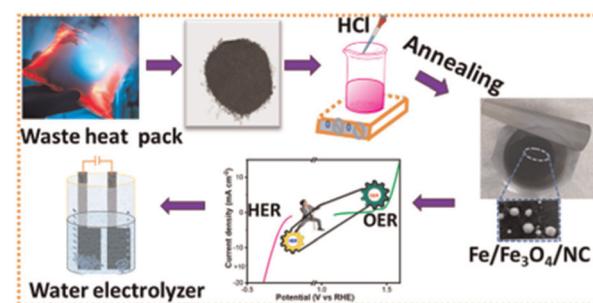
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**Waste iron-based disposable chemical warmer derived electrocatalyst for water splitting**

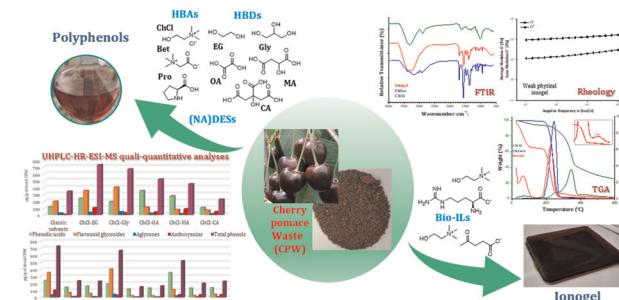
Keyru Serbara Bejigo, Raaju Sundhar Arul Saravanan, Kousik Bhunia and Sang-Jae Kim\*



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**Sustainable valorization of cherry (*Prunus avium* L.) pomace waste via the combined use of (NA)DESS and bio-ILs**

Angelica Mero, Andrea Mezzetta, Marinella De Leo,\* Alessandra Braca and Lorenzo Guazzelli\*

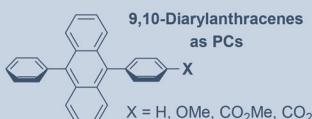


## PAPERS

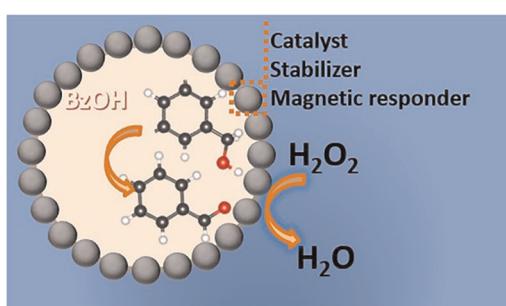
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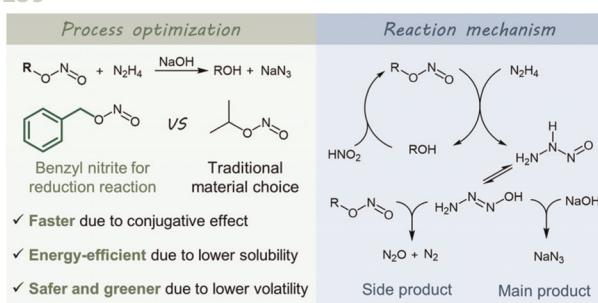
- Electron and proton transfer
- Organo-photo-catalysis
- Trialkylamine as H-source
- Mild and sustainable



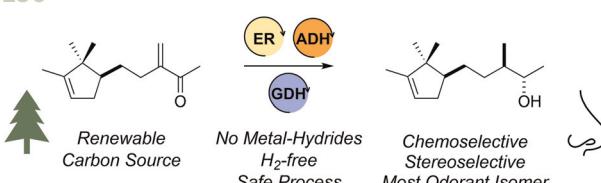
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### Hydride-free reduction of propargyl electrophiles: a nickel-catalyzed photoredox strategy for allene synthesis

Tingjun Hu, Vincent Fagué, Didier Bouyssi, Nuno Monteiro and Abderrahmane Amgoune\*

### Magnetic-responsive Pickering emulsions based on MFe<sub>2</sub>O<sub>4</sub> (M = Mn, Fe, Co, Ni, Cu, Zn) for green and efficient oxidation of benzyl alcohol

Yan Wang, Xuan Wang, Yonghao Dong, Mingli Peng,\* Lina Guo, Mengyao Cui, Yuan He, Jiabao Yi, Huijun Ma, Huan Zhang and Haiming Fan

### A safer, greener and faster synthesis process of sodium azide by simply altering the alcohol reactant

Zifei Yan, Jian Deng, Jiaxin Tian and Guangsheng Luo\*

### Biocatalytic approaches for a more sustainable synthesis of sandalwood fragrances

Maria C. Cancellieri, Davide Maggioni, Lorenzo Di Maio, Daniele Fiorito, Elisabetta Brenna, Fabio Parmeggiani and Francesco G. Gatti\*

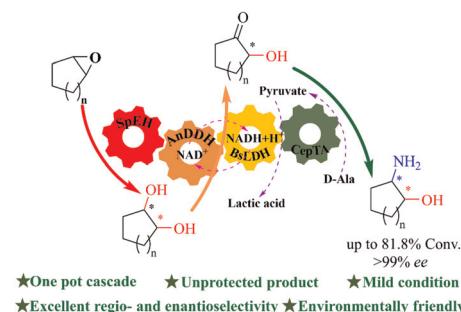


## PAPERS

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**Biocatalytic asymmetric ring-opening of meso-epoxides to enantiopure cyclic trans- $\beta$ -amino alcohols involving a key amine transaminase**

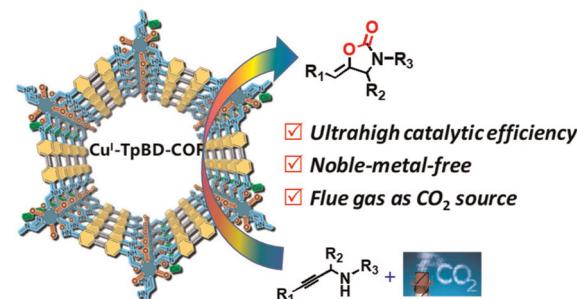
Jingqi Zhang, Hang Gao, Lili Gao,\* Mengyi Chen, Shuangping Huang and Jiandong Zhang\*



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**Cu<sup>1</sup>-anchored porous covalent organic frameworks for highly efficient conversion of propargylic amines with CO<sub>2</sub> from flue gas**

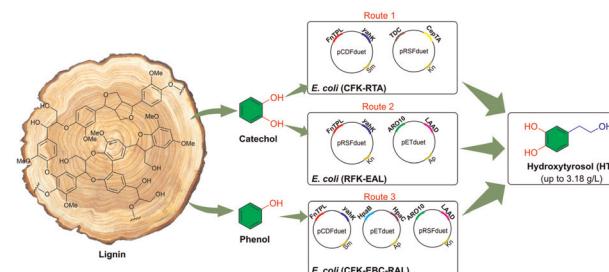
Jikuan Qiu, Xiaoqing Qi, Keping Zhu, Yuling Zhao, Haiyan Wang, Zhiyong Li, Huiyong Wang, Yang Zhao and Jianji Wang\*



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**One-pot biocatalytic upgrading of lignin-derived phenol and catechol to hydroxytyrosol**

Rui-Yan Zhao, Shuang-Ping Huang, Li-Li Gao and Jian-Dong Zhang\*



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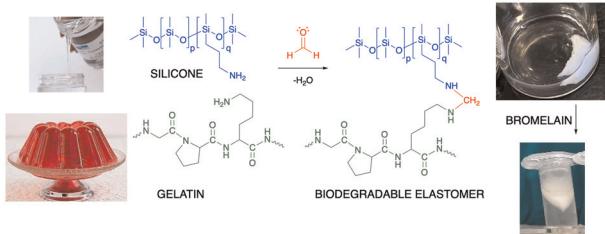
**Green synthesis of oxygenic graphyne with high electrochemical performance from efficient mechanochemical degradation of hazardous decabromodiphenyl ether**

Yingjie Li,\* Xiaoyu Wang, Bo Qiang, Shenao Xu, Jing Gu, XIAOJUN HE and Chunxi Li\*

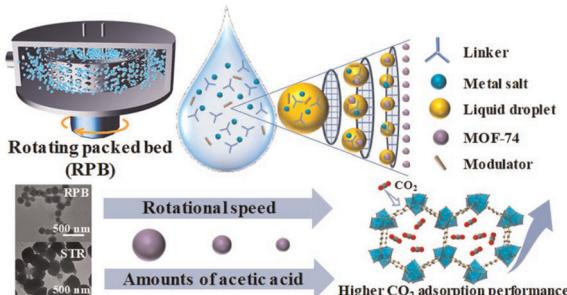


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**Biodegradable, crosslinked silicone-gelatin hydrogels**Kaitlyn E. C. Silverthorne, Erin M. Donahue-Boyle,  
Ana Pricu, Angela Yayun Li and Michael A. Brook\*

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**Green, efficient and controllable synthesis of high-quality MOF-74 with high gravity technology**Xin-Ran Shi, Meng Qiao, Yan Wei, Ling-Xia Yun,  
Jie-Xin Wang\* and Jian-Feng Chen