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ISSN 1463-9262 CODEN GRCHFJ 26(10) 5585–6220 (2024)

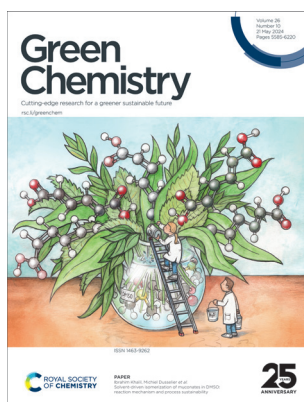


Cover

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

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Inside cover

See Ibrahim Khalil, Michiel Dusselier *et al.*, pp. 5852–5861.

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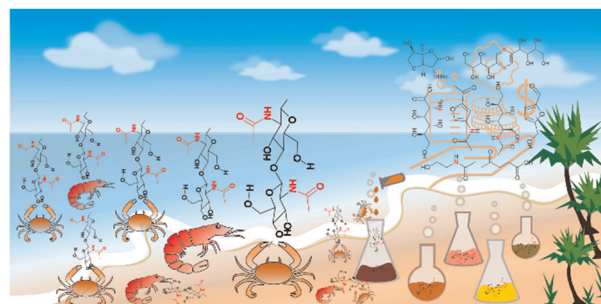
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CRITICAL REVIEWS

5601

Shell waste valorization to chemicals: methods and progress

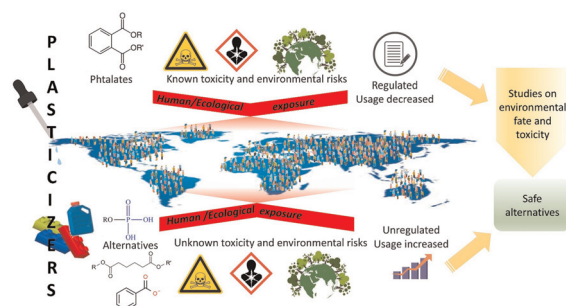
Lavanya Korampattu, Neha Ghosh and Paresh L. Dhepe*



5635

Global environmental and toxicological data of emerging plasticizers: current knowledge, regrettable substitution dilemma, green solution and future perspectives

Abdul Qadeer,* Muhammad Anis, Genoa R. Warner, Courtney Potts, Georgios Giovanoulis, Samia Nasr, Denisse Archundia, Qinghuan Zhang, Zeeshan Ajmal,* Anthony C. Tweedale, Wang Kun, Pengfei Wang, Ren Haoyu, Xia Jiang* and Wang Shuhang*



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Fundamental questions
Elemental answers



Yicui Wei, Weibo Zhang and Jiao Gao*

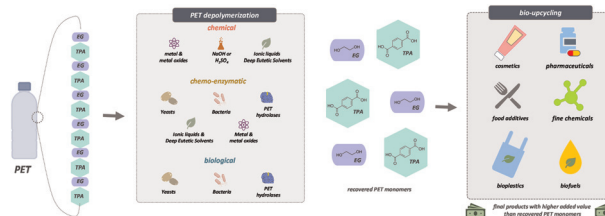
Yicui Wei, Weibo Zhang and Jiao Gao*



5708

Adriano Carniel, Nathália Ferreira dos Santos,
Filipe Smith Buarque, João Victor Mendes Resende,
Bernardo Dias Ribeiro, Isabel M. Marrucho, Maria Alice
Zarur Coelho and Aline M. Castro*

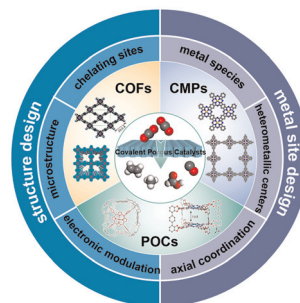
Adriano Carniel, Nathália Ferreira dos Santos,
Filipe Smith Buarque, João Victor Mendes Resende,
Bernardo Dias Ribeiro, Isabel M. Marrucho, Maria Alice
Zarur Coelho and Aline M. Castro*



5744

Shuanglong Lu, Hongyin Hu, Huimin Sun, Fulin Yang,
Han Zhu, Mingliang Du, Yinghua Jin and Wei Zhang*

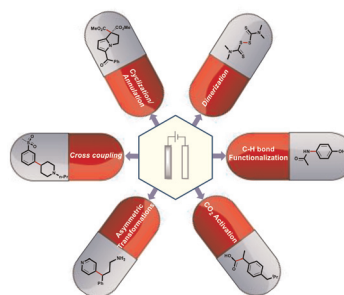
Shuanglong Lu, Hongyin Hu, Huimin Sun, Fulin Yang,
Han Zhu, Mingliang Du, Yinghua Jin and Wei Zhang*



5770

Adrija Ghosh, Vishal Kumar Parida and
Debasis Banerjee*

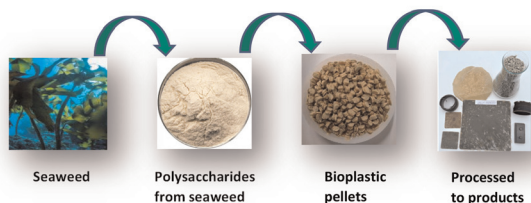
Adrija Ghosh, Vishal Kumar Parida and
Debasis Banerjee*



TUTORIAL REVIEWS

5790

Bioplastics from seaweeds- promoting circular economies

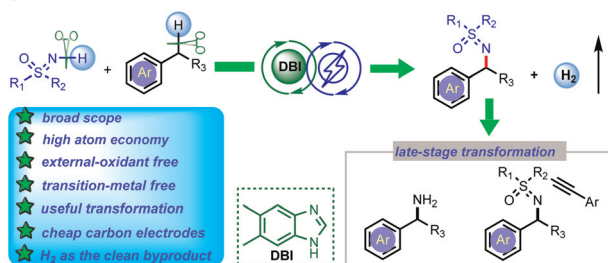


Seaweed-based polysaccharides – review of extraction, characterization, and bioplastic application

Lakshmi Krishnan, Nandhini Ravi, Anjon Kumar Mondal, Farjana Akter, Manoj Kumar, Peter Ralph and Unnikrishnan Kuzhiumparambil*

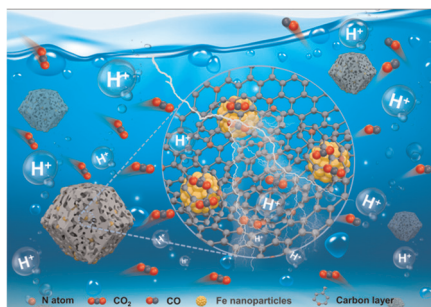
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5824

Electrochemical N(sp²)-H/C(sp³)-H cross-coupling reaction between sulfoximines and alkyarenes

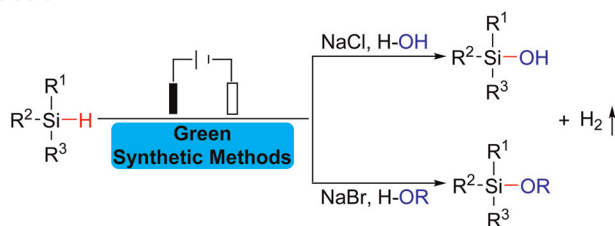
Qing-Ru Zhu, Peng-Zhan Zhang, Xiang Sun, Hui Gao, Pei-Long Wang* and Hongji Li*

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Efficient electrochemical CO₂ reduction in acidic electrolytes using armor-like iron nanoparticles/porous nitrogen-doped carbon

Wenli Hao, Li Peng,* Rongxing Qiu, Tianwei Xue, Ruiqing Li, Qing-Na Zheng, Jia Yu, Tongxin Qiao, Linxiao Cui, Yuzhong Su, Yanzhen Hong, Hongtao Wang, Shuliang Yang* and Jun Li*

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

Zhengjiang Fu,* Fei Xiao, Jian Yin, Fei Tong, Shengmei Guo and Hu Cai*

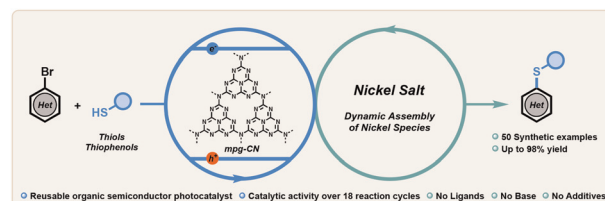


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C(sp²)-S cross-coupling reactions with nickel, visible light, and mesoporous graphitic carbon nitride

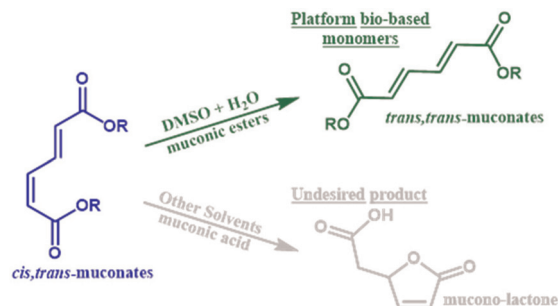
Maksim Nikitin, Florence Babawale, Sena Tastekin, Markus Antonietti, Indrajit Ghosh* and Burkhard König*



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

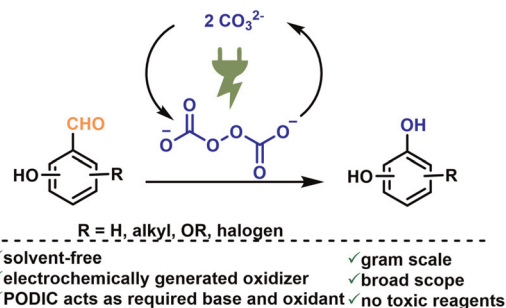
Ibrahim Khalil,* Fatima Rammal, Lisa De Vriendt, An Sofie Narmon, Bert F. Sels, Sebastian Meier and Michiel Dusselier*



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E-Dakin reaction: oxidation of hydroxybenzaldehydes to phenols with electrochemically generated peroxodicarbonate as sustainable ex-cell oxidizer

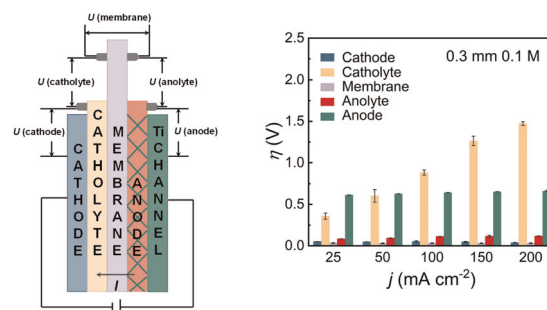
Fiona Sprang, Niclas Schupp, Philipp J. Kohlpaintner, Lukas J. Gooßen and Siegfried R. Waldvogel*



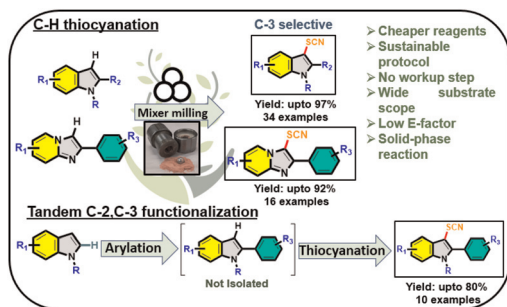
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Low-cell-voltage electrosynthesis of hydrogen peroxide

Junyu Yan, Jing Xia and Kai Wang*



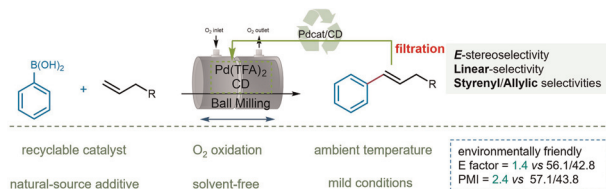
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A solvent-free mechanochemical electrophilic C–H thiocyanation of indoles and imidazo[1,2-a]pyridines using a cost-effective combination of *N*-chlorosuccinimide–NaSCN and tandem C–C and C–S bond formation

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

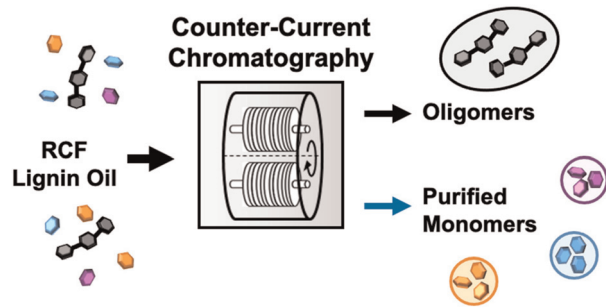
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Mechanochemical aerobic oxidative Heck coupling by polymer-assisted grinding: cyclodextrin additive facilitating regioselectivity control

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

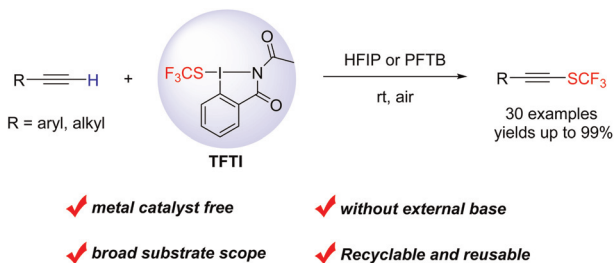
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Counter-current chromatography for lignin monomer–monomer and monomer–oligomer separations from reductive catalytic fractionation oil

Hoon Choi, Manar Alherech, Jun Hee Jang,
Sean P. Woodworth, Kelsey J. Ramirez, Eric M. Karp and
Gregg T. Beckham*

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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*



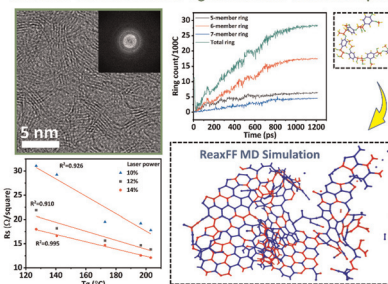
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Probing laser-induced structural transformation of lignin into few-layer graphene

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

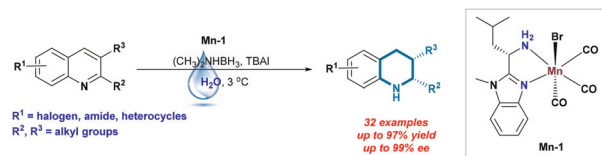
Structural Transformation of Lignin into Laser-induced Graphene



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

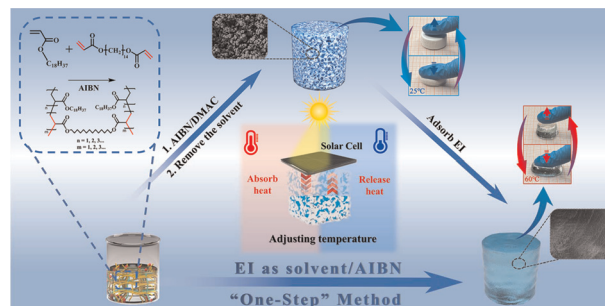
Wenhao Mao, Dingguo Song, Jiyuan Guo, Kali Zhang, Changdi Zheng, Jie Lin, Lian Huang, Lizhou Zheng, Weihui Zhong* and Fei Ling*



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

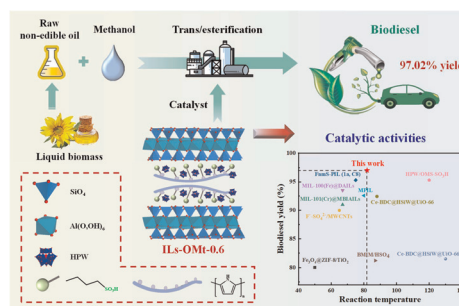
Yongqiang Qian, Lei Tan, Wentao He, Liling Liao, Yongjia Wu, Yiyang Chen, Dan Li, Xu Zhang, Guxia Wang, Yen Wei and Shengwei Guo*

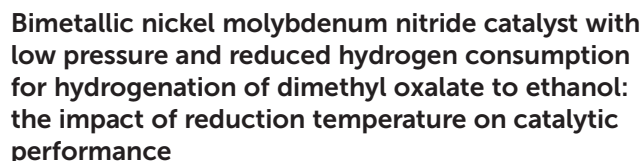


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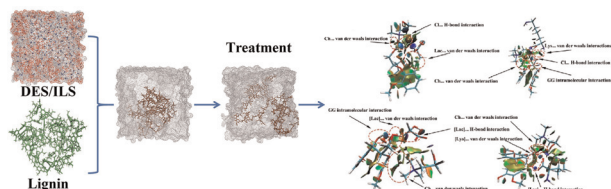
A practical approach for enhanced biodiesel production using organic modified montmorillonites as efficient heterogeneous hybrid catalysts

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



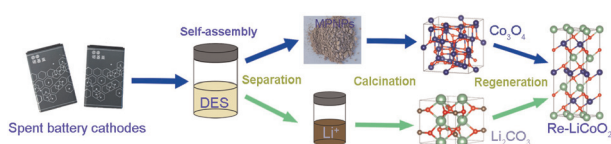


Jiang Gong, Hanqing Zhang, Weihan Shu,
Fengling Zheng, Chuancai Zhang,* Hao Wang, Ni Zhang
and Bin Dai*



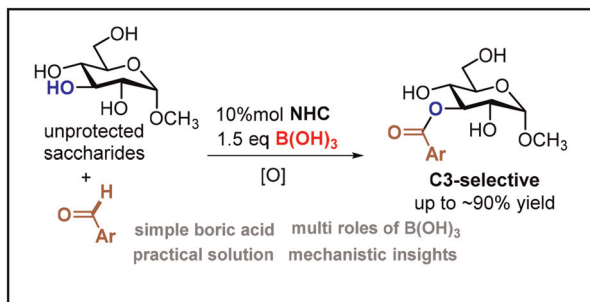
Tailoring a suitable partner system for cholinium cation to build effective solvents for biomass deconstruction

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



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

Zeyu Wang, Yu Chen, Fengyi Zhou, Rui Qin, Yurun Tian,
Zhimin Xue and Tiancheng Mu*



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

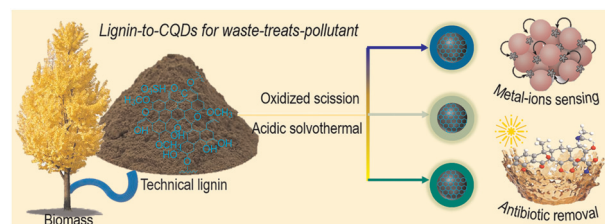
Jiamiao Jin, Jiangtao Guo, Feng Xu, Ya Lv,
Guanjie Wang, Jia Song, Wen-Xin Lv, Tingting Li* and
Yonggui Robin Chi*

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

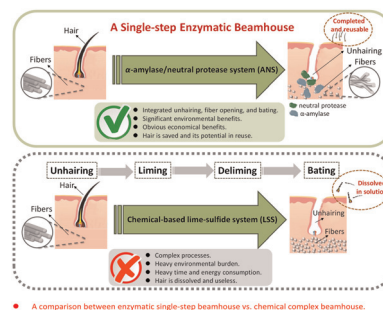
Pengfei Zhou, Jikun Xu,* Jun Guo, Xinyan Hou, Lin Dai, Xiao Xiao and Kaifu Huo



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

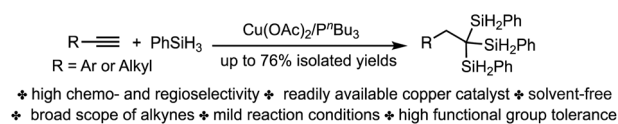
Mingrui Zhang, Chao Tang, Hui Liu, Shufa Qin, Jie Liu, Mădălina Georgiana Albu Kaya and Keyong Tang*



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

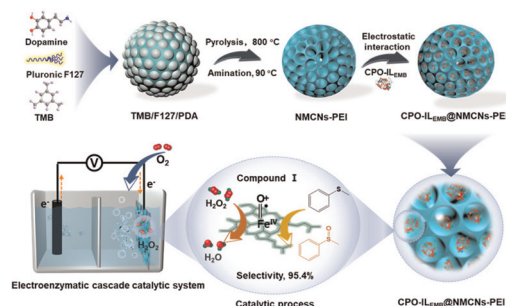
Jia Li and Shaozhong Ge*



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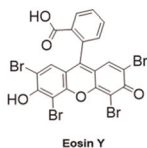
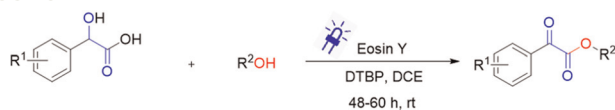
The selective oxidation of thioanisole to sulfoxide using a highly efficient electroenzymatic cascade system

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



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Eosin Y

• Transition-metal-free photocatalysis

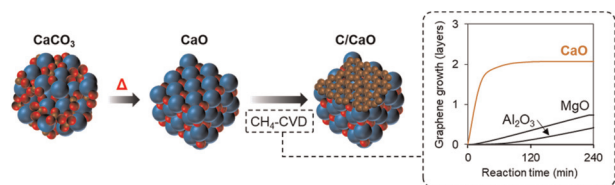
• Excellent functional group tolerance, 42 compounds

• Easy handling and mild reaction conditions

Visible light-induced oxidative esterification of mandelic acid with alcohols: a new synthesis of α -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 Hiroto Nishihara*

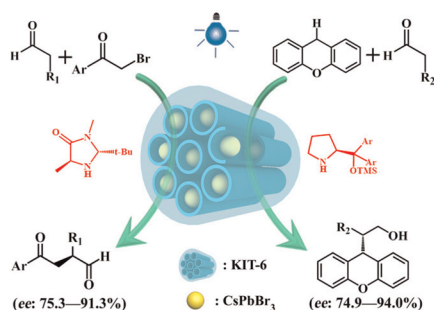
6063



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*

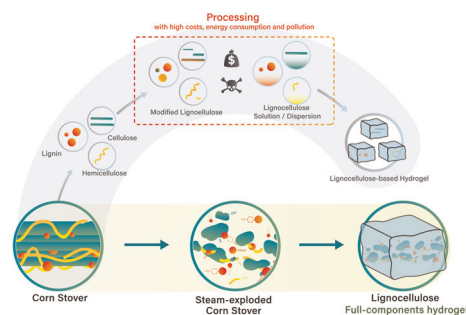


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Lignocellulosic full-components hydrogelation using steam-exploded corn stover

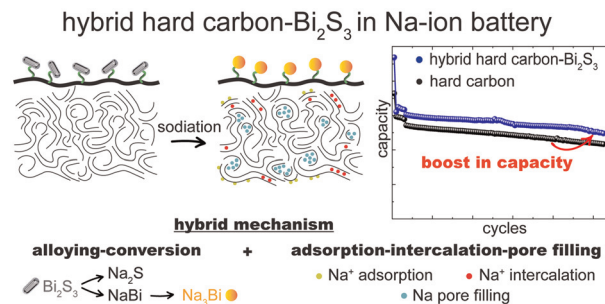
Tairan Pang, Lan Wang* and Hongzhang Chen



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Exploring hybrid hard carbon/Bi₂S₃-based negative electrodes for Na-ion batteries

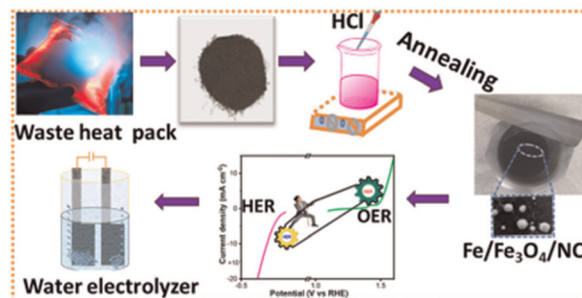
Blaž Tratnik, Sergio Aina, Elena Tchernychova, Matej Gabrijelčič, Gregor Mali, Maria Pilar Lobera, Maria Bernechea, Mathieu Morcrette, Alen Vizintin* and Robert Dominko



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

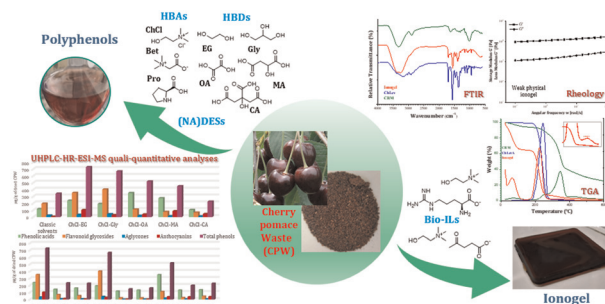
Keyru Serbara Bejigo, Raaju Sundhar Arul Saravanan, Kousik Bhunia and Sang-Jae Kim*



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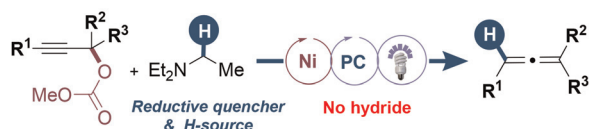
Sustainable valorization of cherry (*Prunus avium* L.) pomace waste via the combined use of (NA)DESS and bio-ILs

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

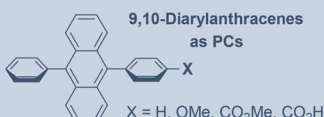


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6124



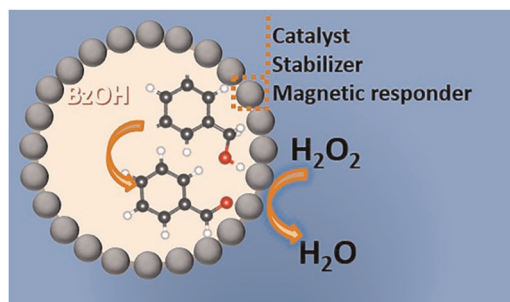
- Electron and proton transfer
- Organo-photocatalysis
- Trialkylamine as H-source
- Mild and sustainable



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*

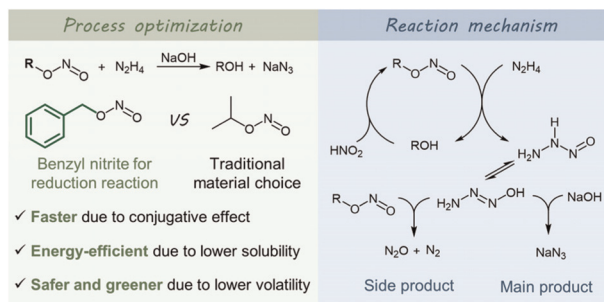
6131



Magnetic-responsive Pickering emulsions based on MFe_2O_4 ($M = Mn, Fe, Co, Ni, Cu, Zn$) 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

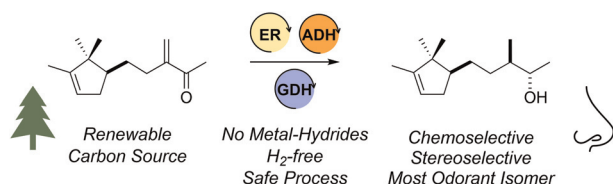
6139



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*

6150



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*

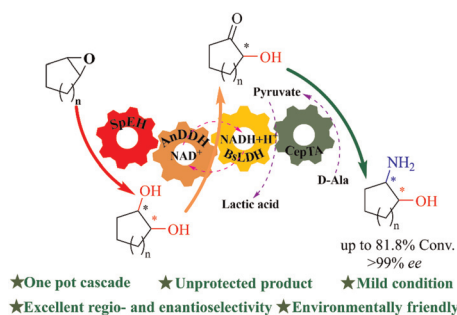


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Biocatalytic asymmetric ring-opening of *meso*-epoxides to enantiopure cyclic *trans*- β -amino alcohols involving a key amine transaminase

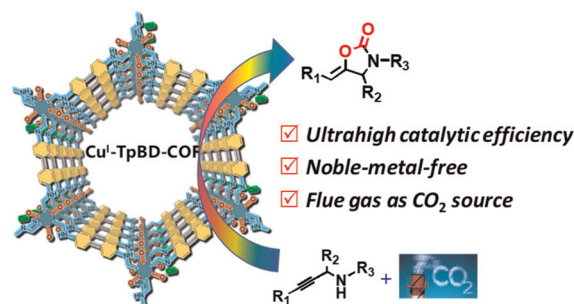
Jingqi Zhang, Hang Gao, Lili Gao,* Mengyi Chen, Shuangping Huang and Jiandong Zhang*



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Cu^I-anchored porous covalent organic frameworks for highly efficient conversion of propargylic amines with CO₂ from flue gas

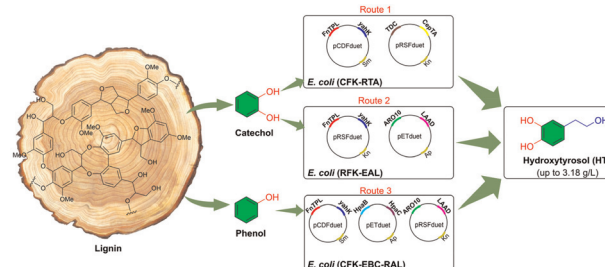
Jikuan Qiu, Xiaoqing Qi, Keping Zhu, Yuling Zhao, Haiyan Wang, Zhiyong Li, Huiyong Wang, Yang Zhao and Jianji Wang*



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

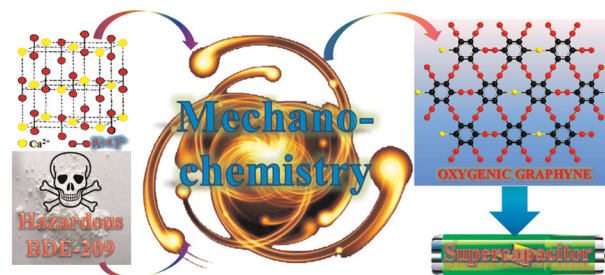
Rui-Yan Zhao, Shuang-Ping Huang, Li-Li Gao and Jian-Dong Zhang*



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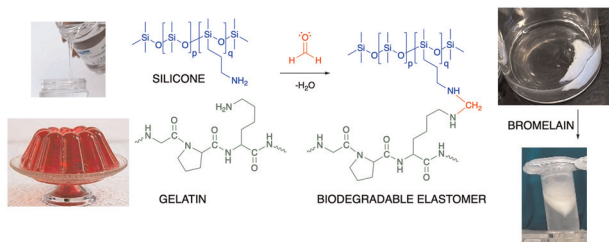
Green synthesis of oxygenic graphyne with high electrochemical performance from efficient mechanochemical degradation of hazardous decabromodiphenyl ether

Yingjie Li,* Xiaoyu Wang, Bo Qiang, Shenao Xu, Jing Gu, Xiaojun He and Chunxi Li*



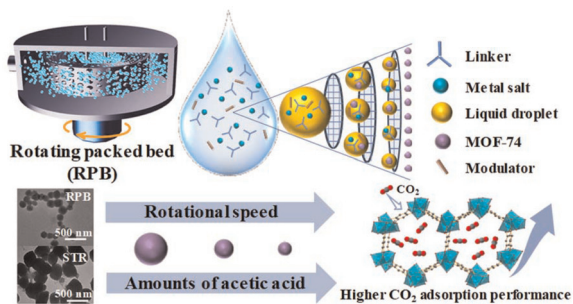
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**Biodegradable, crosslinked silicone-gelatin hydrogels**

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

