

# Green Chemistry

Cutting-edge research for a greener sustainable future

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ISSN 1463-9262 CODEN GRCHFJ 25(8) 2883–3308 (2023)



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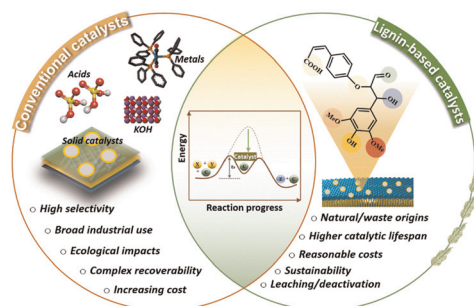
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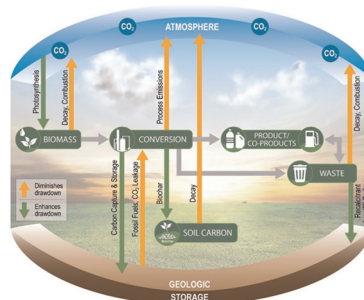
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Green Chemistry electronic:

ISSN 1463-9270 is published 24 times

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# Green Chemistry

Cutting-edge research for a greener sustainable future

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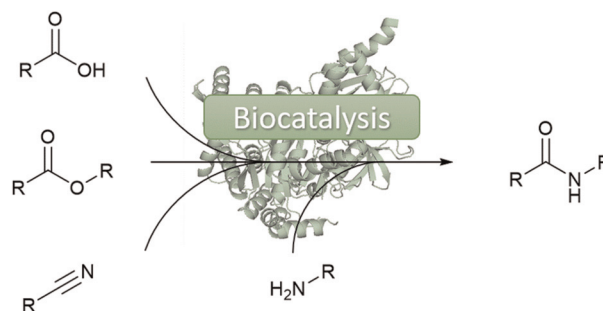


## TUTORIAL REVIEWS

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**Biocatalytic amide bond formation**

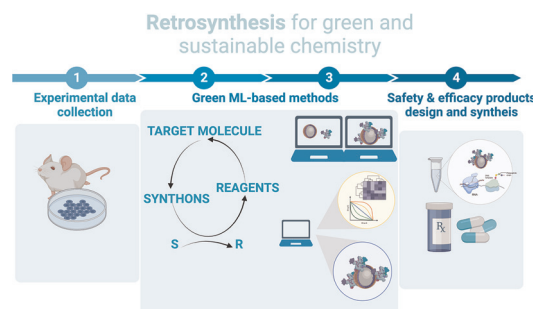
Max Lubberink, William Finnigan and Sabine L. Flitsch\*



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**Retrosynthesis from transforms to predictive sustainable chemistry and nanotechnology: a brief tutorial review**

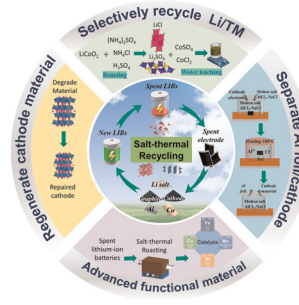
Alicja Mikolajczyk,\* Uladzislau Zhdan, Sylvain Antoniotti, Adam Smolinski, Karolina Jagiello, Piotr Skurski, Moussab Harb, Tomasz Puzyn and Jaroslaw Polanski\*



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**Salt-thermal methods for recycling and regenerating spent lithium-ion batteries: a review**

Xin Qu, Beilei Zhang, Jingjing Zhao, Baolong Qiu, Xiang Chen, Fengyin Zhou, Xiangyun Li, Shuaibo Gao, Dihua Wang and Huayi Yin\*

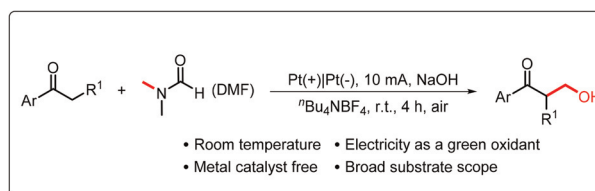


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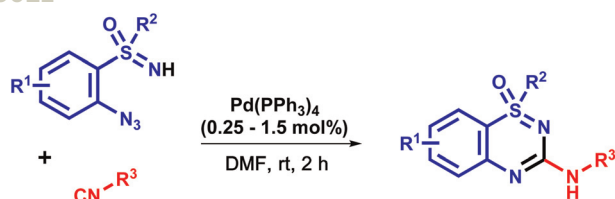
**Electrooxidative  $\alpha$ -hydroxymethylation of ketones with dimethylformamide as the carbon source**

Jin-Ming Zheng, Yi-Fei Li, Yi-Xiang Pan, Xiao-Dong Hu, Xiao-Xia Ye and Ren-Hao Li\*



## COMMUNICATIONS

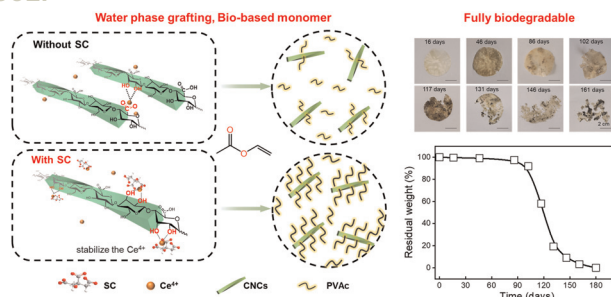
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### Synthesis of 3-amino-substituted benzothiadiazine oxides by a palladium-catalysed cascade reaction

Renè Hommelsheim, Sandra Bausch, Robin van Nahl, Jas S. Ward, Kari Rissanen and Carsten Bolm\*

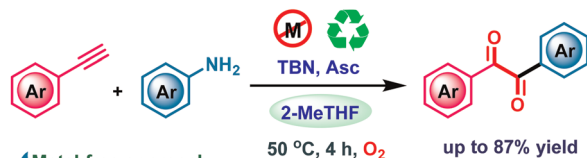
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### Highly efficient grafting of polyvinyl acetate onto cellulose nanocrystals in the aqueous phase

Yunxiao Liu, Hongze Xu, Lijuan Zhou and Jianming Zhang\*

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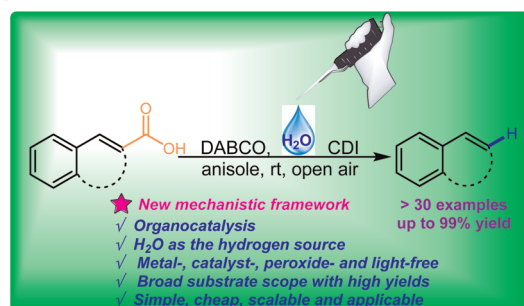
- ✓ Metal-free approach
- ✓ Eco-friendly solvent
- ✓ Broad substrate scope
- ✓ Scale-up synthesis
- ✓ Lower E-factors



### Metal-free, 2-MeTHF mediated C(sp)-H functionalization of alkynes with anilines to access diaryl 1,2-diketones bearing lower E-factors

Swadhapriya Bhukta, Rana Chatterjee and Rambabu Dandela\*

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### A water-promoted catalytic hydrodecarboxylation of conjugated carboxylic acids under open air conditions at room temperature

Zhan-Yong Wang, Ting Yang, Kai-Kai Wang, Dong-Fang Liu, Xueji Ma, Nan Wang, Hong Liu, Aili Sun and Hongxin Liu\*

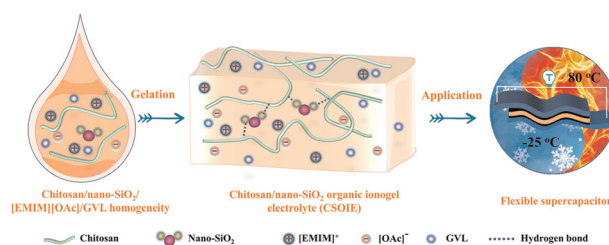


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### Use of an [EMIM][OAc]/GVL-based organic electrolyte solvent to engineer chitosan into a nanocomposite organic ionogel electrolyte for flexible supercapacitors

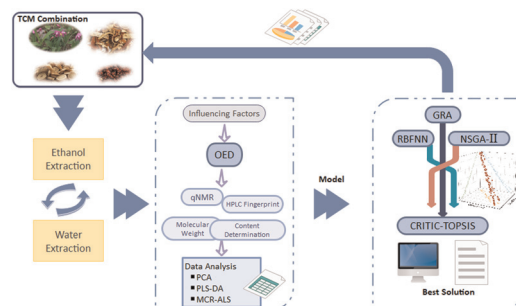
Hailiang Sheng, Antai Zhu, Lihua Zhang,\* Jun Huang, Tongjun Yang, Shangdong Qin, Fazhi Zhang, Qinqin Xu and Haibo Xie\*



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### Machine learning-assisted data-driven optimization and understanding of the multiple stage process for extraction of polysaccharides and secondary metabolites from natural products

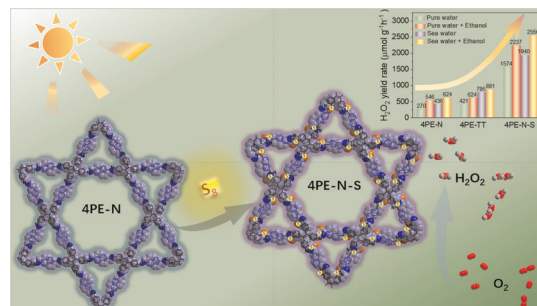
Jiamu Ma, Jianling Yao, Xueyang Ren, Ying Dong, Ruolan Song, Xiangjian Zhong, Yuan Zheng, Dongjie Shan, Fang Lv, Xianxian Li, Qingyue Deng, Yingyu He, Ruijuan Yuan\* and Gaimei She\*



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### Extending the $\pi$ -conjugation system of covalent organic frameworks for more efficient photocatalytic $\text{H}_2\text{O}_2$ production

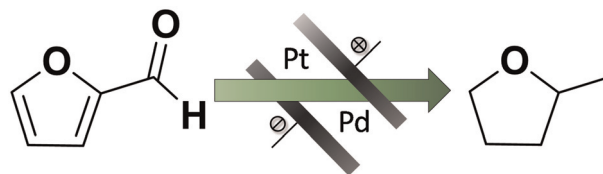
Maojun Deng, Jiamin Sun, Andreas Laemont, Chunhui Liu, Linyang Wang, Laurens Bourda, Jeet Chakraborty, Kristof Van Hecke, Rino Morent, Nathalie De Geyter, Karen Leus, Hui Chen\* and Pascal Van Der Voort\*



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### Exploring the electrochemical ring hydrogenation of furanic compounds

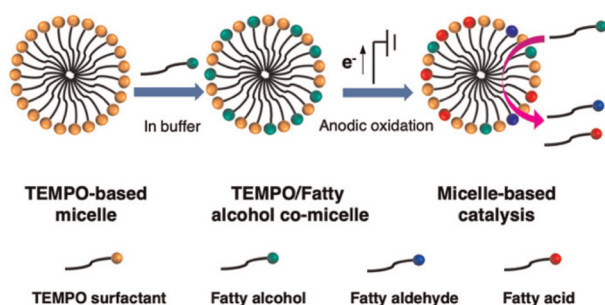
Thorben Lenk, Valentin Rueß, Janko Gresch and Uwe Schröder\*





## PAPERS

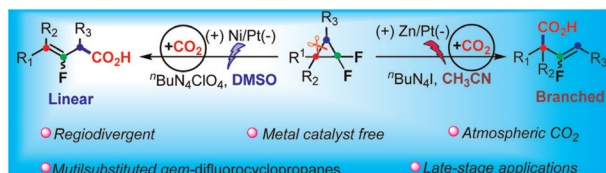
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### Nitroxide radical surfactants enable electrocatalytic oxidation of fatty alcohols in water

Chanaka J. Mudugamuwa, Yuan Xie, Kai Zhang, Thomas P. Nicholls, Justin M. Chalker and Zhongfan Jia\*

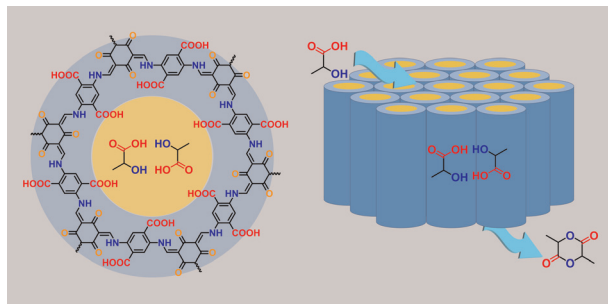
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### Regiodivergent electroreductive defluorination carboxylation of gem-difluorocyclopropanes

Bin Zhao, Zichen Pan, Jiayu Pan, Hongping Deng, Xiaoli Bu, Mengtao Ma and Fei Xue\*

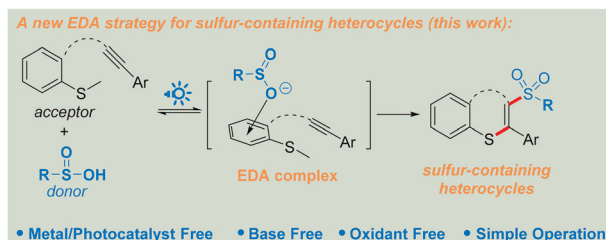
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### A "one-step" approach to the highly efficient synthesis of lactide through the confinement catalysis of covalent organic frameworks

Jinyu Zhao, Guangming Guo, Danbo Wang, Hui Liu,\* Zhenxiu Zhang, Lishui Sun, Naixiu Ding, Zhibo Li\* and Yingjie Zhao\*

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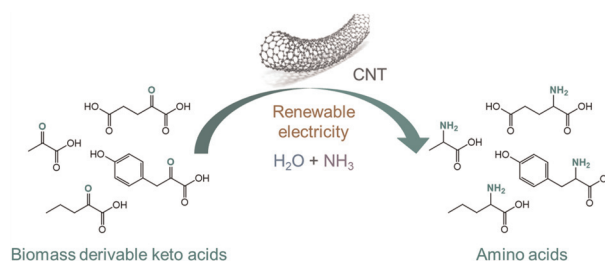
### A general electron donor–acceptor complex enabled cascade cyclization of alkynes to access sulfur-containing heterocycles

Wen-Chao Yang,\* Yu Sun, Xiao-Bo Bao, Shu-Peng Zhang and Liu-Yu Shen



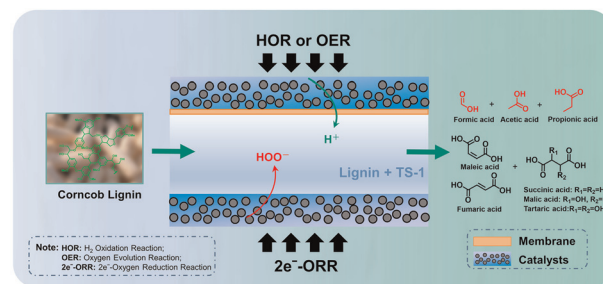
Yiying Xiao, Chia Wei Lim, Jinqun Chang, Qixin Yuan,  
Lei Wang\* and Ning Yan\*

Yiying Xiao, Chia Wei Lim, Jinquan Chang, Qixin Yuan,  
Lei Wang\* and Ning Yan\*



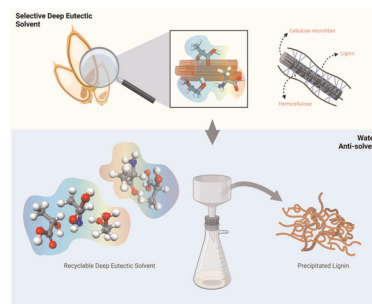
## Electrochemical conversion of lignin to short-chain carboxylic acids

Shirong Sun, Xueqing Qiu,\* Shuhua Hao,  
Sabarinathan Ravichandran, Jinliang Song and  
Wenli Zhang\*



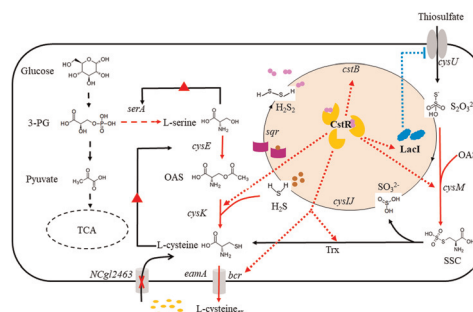
# High-purity lignin from selective biomass fractionation with ternary deep eutectic solvents

Liang Ying Ee, Yong Kuok Tan, Jiapei Miao,  
Hui Ting Chu and Sam Fong Yau Li\*

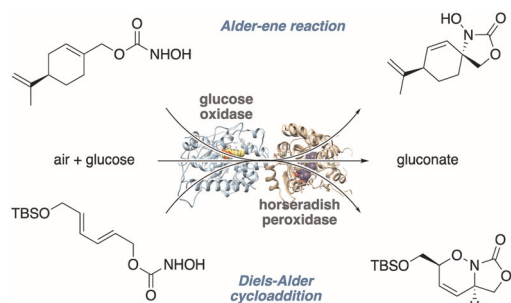


# Reprogramming the sulfur recycling network to improve L-cysteine production in *Corynebacterium glutamicum*

Huanmin Du, Jinfang Qiao, Yuting Qi, Lingcong Li,  
Ning Xu, Li Shao, Liang Wei\* and Jun Liu\*



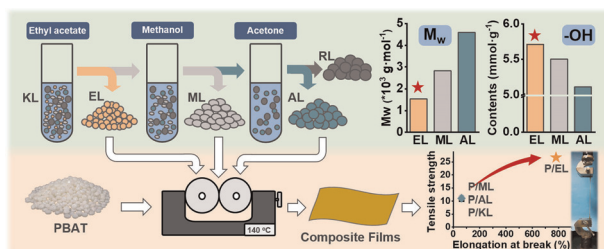
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### Peroxidase-induced C–N bond formation *via* nitroso ene and Diels–Alder reactions

Christina Jäger, Bernhard J. Gregori, Juhana A. S. Aho,  
Marleen Hallamaa and Jan Deska\*

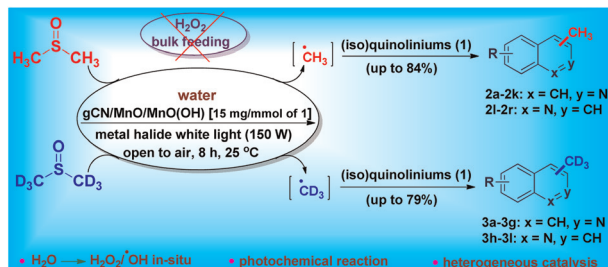
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## A strong, tough and cost-effective biodegradable PBAT/lignin composite film *via* intrinsic multiple noncovalent interactions

Shao-Jun Xiong, Si-Jie Zhou, Hao-Hui Wang,  
Han-Min Wang, Xiao-Jun Shen, Shixin Yu,\* Hui Li,  
Lu Zheng, Jia-Long Wen, Tong-Qi Yuan\* and  
Run-Cang Sun

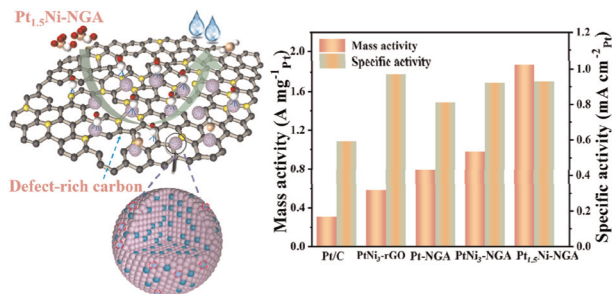
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# Activation of DMSO-(d<sub>6</sub>) via heterogeneous photo-Fenton-like process with *in situ* production of hydroxyl radicals for the C–H (trideutero) methylation of (iso)quinoliniums

Palani Natarajan,\* Aleyna Basak and Onder Metin\*

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# Achieving superior methanol oxidation electrocatalytic performance by surface reconstruction of PtNi nanoalloys during acid etching process

Xu Chen, Jinyu Zhao, Jie Lian and Xiaomin Wang\*



## PAPERS

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Amine protection by *in situ* formation of choline chloride-based deep eutectic solvents

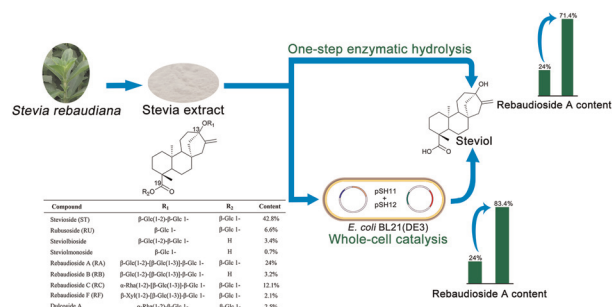
Monica Nardi,\* Giuseppina De Luca, Paolo Novelli, Manuela Oliverio, Salvatore Romano and Antonio Procopio



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## A strategy to increase rebaudioside A content based on one-step bioconversion of Stevia extract to steviol

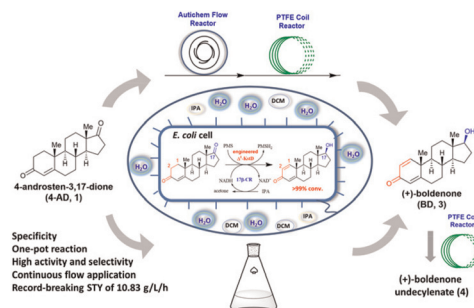
Yu Lin, Manman Wen, Qing Lan, Yu Yin, Ribo Huang,\* Hao Pang, Hang Wei and Liqin Du\*



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Batch and continuous flow asymmetric synthesis of anabolic-androgenic steroids *via* a single-cell biocatalytic  $\Delta^1$ -dehydrogenation and C17 $\beta$ -carbonyl reduction cascade

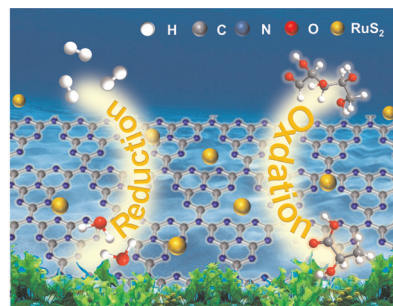
Yajiao Zhang, Minjie Liu, Zixin Yang, Juan Lin,\* Zedu Huang\* and Fener Chen\*



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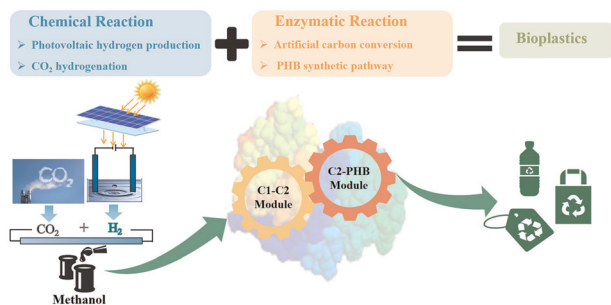
RuS<sub>2</sub>@CN-x with exposed (200) facet as a high-performance photocatalyst for selective C–C bond cleavage of biomass coupling with H–O bond cleavage of water to co-produce chemicals and H<sub>2</sub>

Xinze Li, Jiliang Ma,\* Hongquan Fu, Zhendong Liu, Junqiang Zhang, Rui Cui, Yanzhu Guo, Shuangquan Yao and Runcang Sun\*



## PAPERS

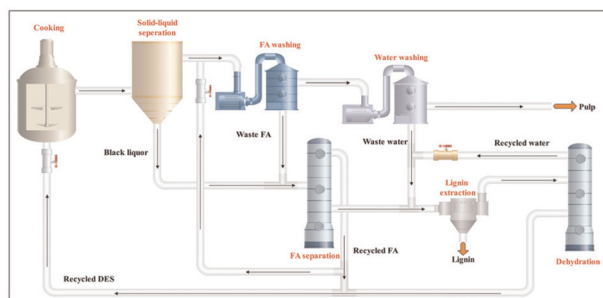
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### Hybrid synthesis of polyhydroxybutyrate bioplastics from carbon dioxide

Jie Zhang, Dingyu Liu, Yuwan Liu, Huanyu Chu, Jie Bai, Jian Cheng, Haodong Zhao, Shaoping Fu, Huihong Liu, YuE. Fu, Yanhe Ma\* and Huifeng Jiang\*

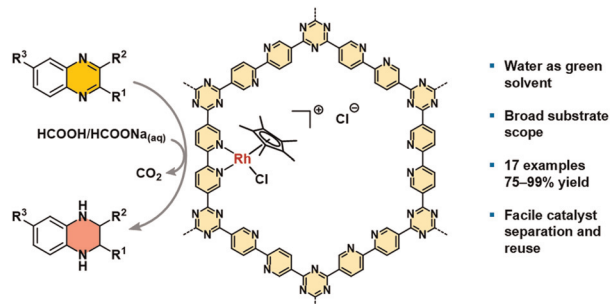
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### A low-energy and sustainable pulping technology for eucalyptus slabs using a deep eutectic solvent

Zhaohui Zhang, Jun Xu,\* Junxian Xie, Shiyun Zhu,\* Jun Li, Guangdong Ying and Kefu Chen

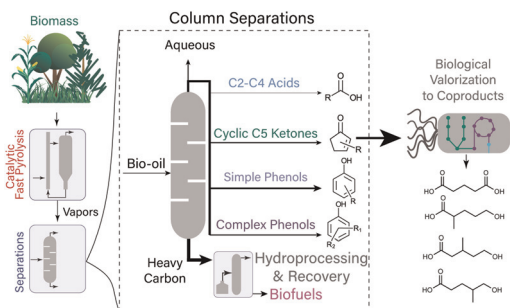
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### A recyclable rhodium catalyst anchored onto a bipyridine covalent triazine framework for transfer hydrogenation of N-heteroarenes in water

Jonas Everaert, Karen Leus, Hannes Rijckaert, Maarten Debruyne, Kristof Van Hecke, Rino Morent, Nathalie De Geyter, Veronique Van Speybroeck, Pascal Van Der Voort and Christian V. Stevens\*

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### Biological conversion of cyclic ketones from catalytic fast pyrolysis with *Pseudomonas putida* KT2440

Andrew J. Borchert, A. Nolan Wilson, William E. Michener, Joseph Roback, William R. Henson, Kelsey J. Ramirez and Gregg T. Beckham\*

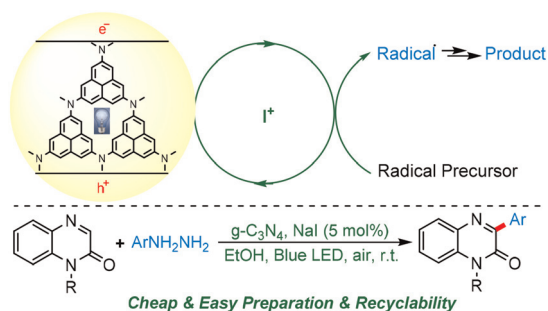


## PAPERS

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Semi-heterogeneous g-C<sub>3</sub>N<sub>4</sub>/NaI dual catalytic C–C bond formation under visible light

Hai-Yang Song, Jun Jiang, Chao Wu, Jia-Chen Hou, Yu-Han Lu, Ke-Li Wang, Tian-Bao Yang and Wei-Min He\*



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## Synthesis of renewable isoindolines from bio-based furfurals

Feng Xu, Zao Li, Li-Long Zhang, Shengqi Liu, Hu Li,\* Yuhe Liao\* and Song Yang\*

