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Cover
See Lindsay D. Eltis, Lars Lauterbach *et al.*, pp. 4006–4018.

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Inside cover
See Ive Hermans, Nelson Cardona-Martinez *et al.*, pp. 4019–4028.

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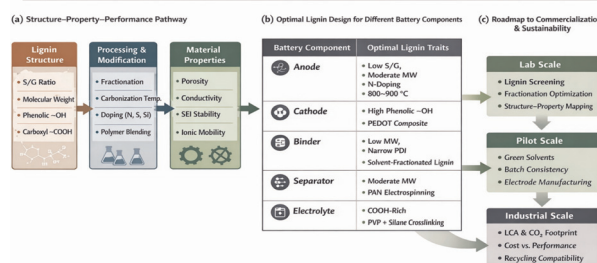
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Lignin-enabled Li-ion battery components: recent advances and outlook

Enoch Abeeku Aidoo and Pedram Fatehi*

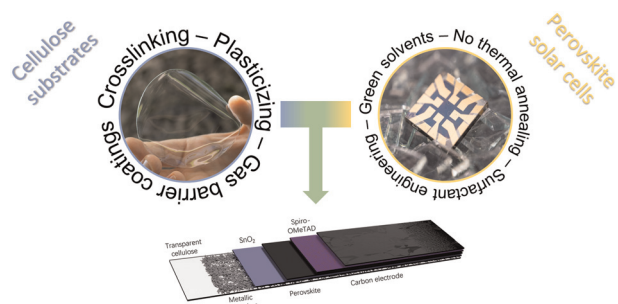
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Combining cellulose substrates and perovskites in sustainable solar cells is possible: a systematic literature review offering realistic solutions

Joaquín Valdez García,* Mahboubeh Hadadian, Vidushi Aggarwal, Sirius Yli-Paavola, Joice Kaschuk, Riikka Suhonen, Marja Välimäki and Kati Miettunen*



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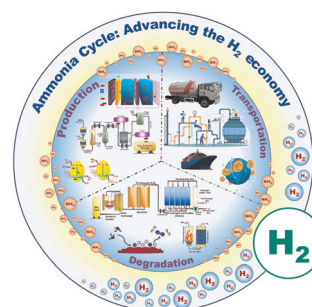
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Techno-economic insights into ammonia as a hydrogen vector: synthesis, cracking, storage, and supply chain solutions

Mousumi Biswas, Shankab J. Phukan, Suraj Goswami, Jit Satra, Gaurav Gupta, Tarun Yadav, Ranjith Krishna Pai,* Manas Roy* and Somenath Garai*

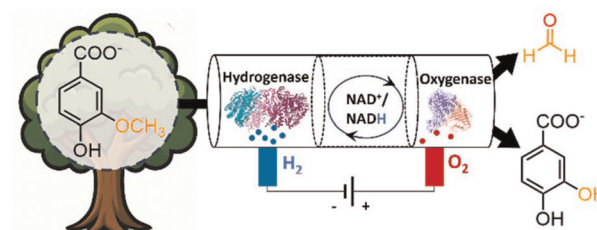


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H₂-driven biocatalytic O-demethylation of lignin derived aromatics in a closed-loop flow system powered by water electrolysis

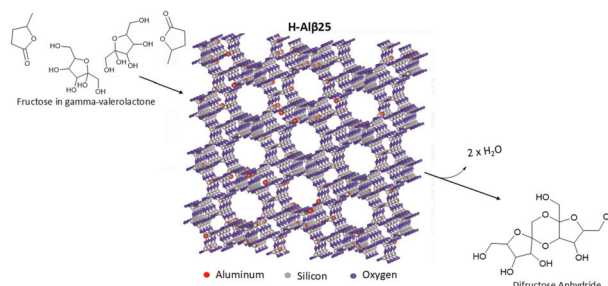
Donato Calabrese, Guiyeoul Lim, Parsa Nayyara, Megan E. Wolf, Paul R. F. Cordero, Lindsay D. Eltis* and Lars Lauterbach*



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The catalytic conversion of fructose to difructose anhydride

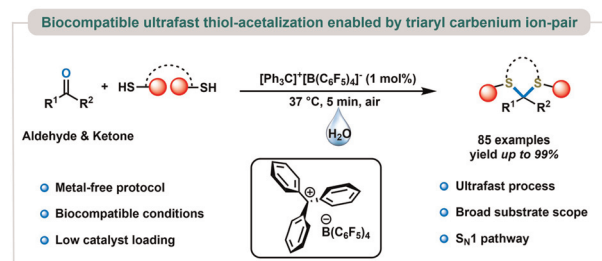
Isabel Hortal-Sánchez, Faysal Ibrahim, Edgard A. Lebrón-Rodríguez, Fabiola Y. Rodríguez-Rodríguez, Grace Gooley, Ruining Ma, Matias Alvear, Ive Hermans* and Nelson Cardona-Martinez*



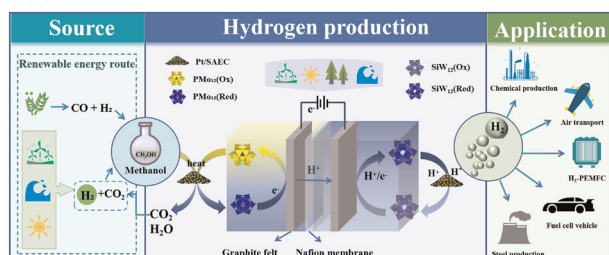
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Biocompatible ultrafast thiol-acetalization enabled by triaryl carbenium ion-pair

Peng Chen,* Ming Zou, Yu Zhang, Niuniu Li, Ruoqi Li, Lijuan Liang, Zhenguang Zhang, Teck-Peng Loh* and Zhenhua Jia*



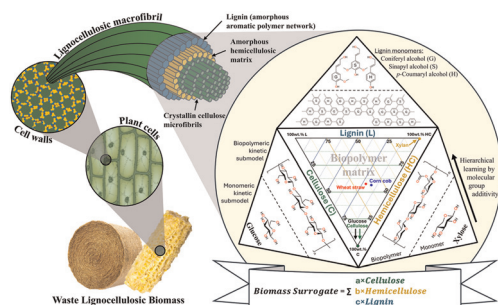
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Rational design of a $\text{PMo}_{12}\text{-SiW}_{12}$ coupled catalytic system toward energy-efficient methanol-to-hydrogen conversion

Xinyue He, Weizhuo Xu, Guohao Xu, Wei Wang, Xin Bi, Bingjie Zhou, Jianfei Song and Wei Liu*

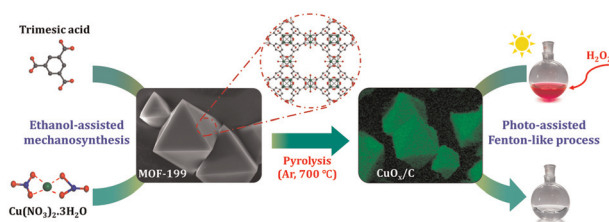
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Butyl levulinate production from lignocellulose with mechanistic learning by hierarchical surrogate kinetic modelling

Conall McNamara,* Ailís O'Shea, Tiarnán Watson-Murphy, Leandro Ayarde-Henríquez, Thiago De Melo Lima and Stephen Dooley

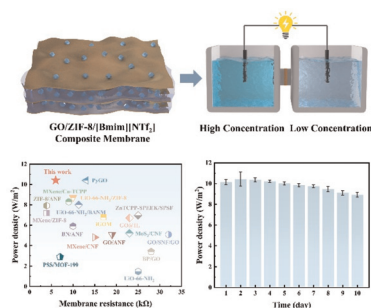
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Ethanol-assisted mechanochemical synthesis of MOF-199-derived CuO_x /carbon composites with tunable copper species for photo-enhanced Fenton-like dye degradation

Khoa D. Tran, Hoan T. Phan, Khoa A. Nguyen, Khoa A. N. Van, Ha V. Le, Huy X. Le, Phuoc H. Ho, Ha P. K. Huynh and Khoa D. Nguyen*

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A hydrophobic ionic liquid and ZIF-8 co-modified graphene oxide membrane for efficient osmotic energy conversion

Yizhuo Wang, Changchao Yan, Jingyun Guo, Zhizhen Ye, Xinyi Wan* and Xincheng Peng*

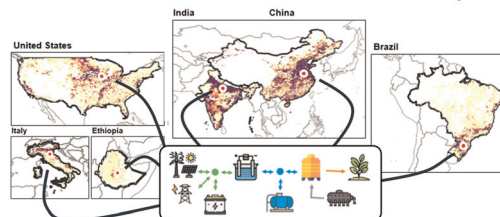


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Optimal design of decentralized ammonia production via electric Haber–Bosch systems

Lorenzo Rosa* and Davide Tonelli

Electric Haber-Bosch for ammonia production

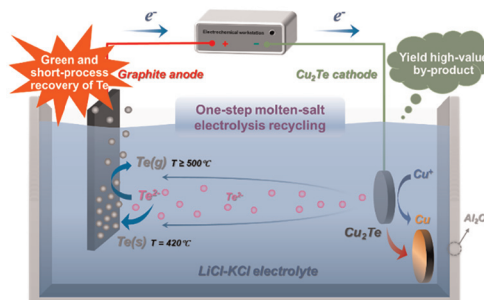


Techno-economic and optimization analysis

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Chloride molten salt-mediated one-step electrochemical recycling of tellurium from copper(I) telluride

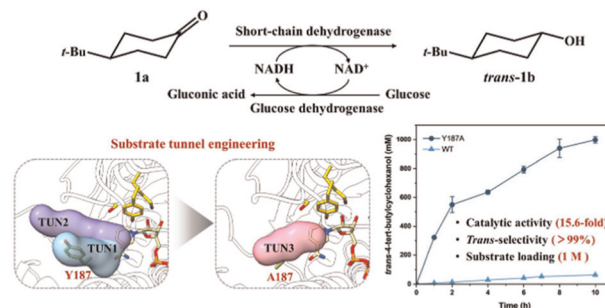
Libo Chen, Jiguo Tu,* Meng Zhang, Mingyin Kou and Shuqiang Jiao*



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Substrate tunnel redesign of short-chain dehydrogenase enabled efficient biocatalytic production of the TRPV1 antagonist *trans*-4-*tert*-butylcyclohexanol

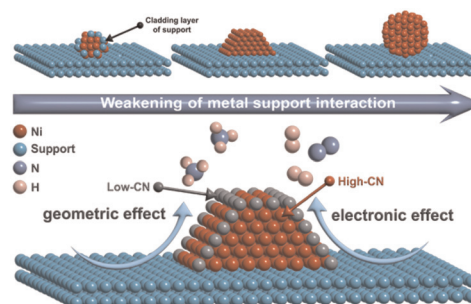
Ting Wang, Lidan Ye* and Hongwei Yu*



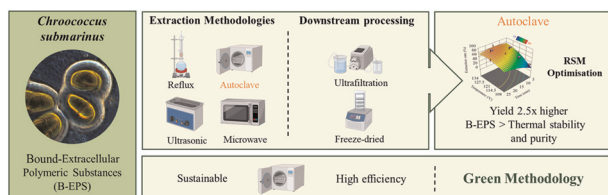
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Pyramidal Ni nanoparticles with highly coordinated surfaces enabled by metal–support interaction regulation for efficient H₂ production from NH₃

Zheng Li, Jun-Jun Yao, Jia-Ning Song, Jun-Kang Guo,* Dong Zhang, Hui-Juan Wang, Ji-Zhou Yang and Shuang-Feng Yin*



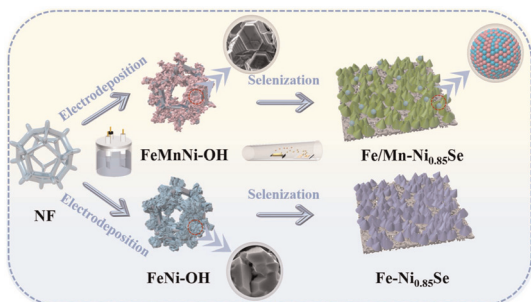
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Towards scalable production of bound extracellular polymeric substances (B-EPS): autoclave hydrothermal extraction coupled with solvent-free ultrafiltration

Ivana Mendonça, Filipa Rodrigues, Marisa Faria,*
Juan L. Gómez Pinchetti, Artur Ferreira and
Nereida Cordeiro*

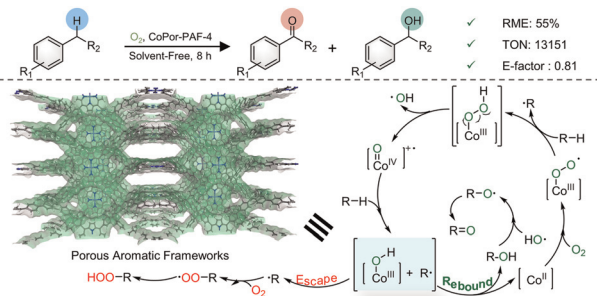
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Accelerated HER kinetics *via* electron-deficient Ni and electron-enriched Se sites by dual Fe and Mn doping for highly efficient hydrogen production

Guanglin Zhu, Lili Ren, Bo Gao, Cean Guo,* Jianjia Mu,*
Fang Gu* and Zhongbao Feng*

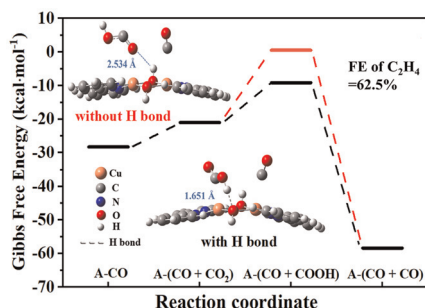
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Solvent-free aerobic oxidation of benzylic C–H bonds *via* nanoconfined cobalt–porphyrin frameworks: a green and safe catalytic strategy

Hong-liang Ye,* Kai-jing Zhang* and Yuan-bin She*

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Hydrogen bond interactions on a dual-core copper catalyst promote the activation of low-concentration CO₂ and the generation of ethylene

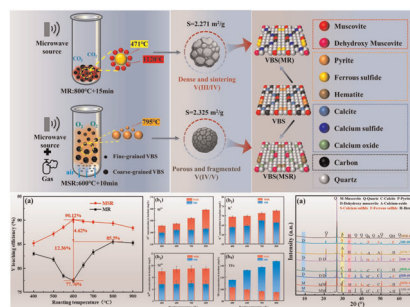
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Kewen Ao, Xinqi Wang, Mingtian Hao, Mengchen Sun
and Wei Zhang*



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Microwave suspension roasting for efficient vanadium extraction from fine-grained shale: a dual mechanism of sintering suppression and oxidation enhancement

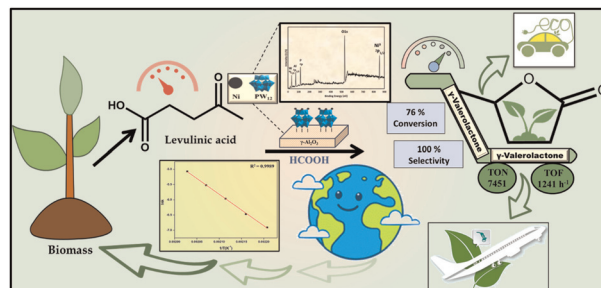
Yonglong Chen, Yizhong Yuan,* Pengcheng Hu,*
Yimin Zhang, Sheng Li and Yu Ye



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Synthesis of next-generation biofuel additive, γ -valerolactone, via hydrogenation of levulinic acid in the presence of formic acid over nickel-exchanged 12-tungstophosphoric acid supported on neutral Al_2O_3 and its kinetics study

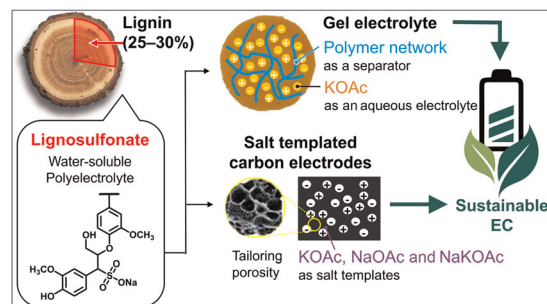
Kavan Chauhan and Anjali Patel*



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Lignin as a precursor of a gel electrolyte and salt templated carbon for sustainable electrochemical capacitors

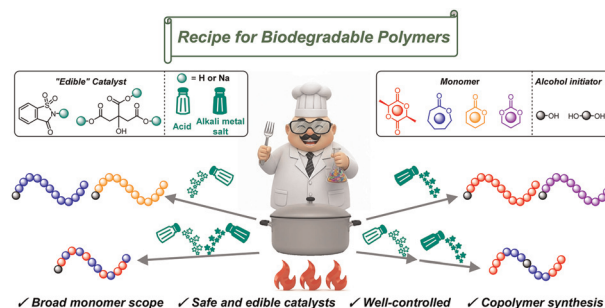
Amelia Klimek, Lina Amro, Nutthira Pakkang,
Camélia Matei Ghimbeu, Elzbieta Frackowiak* and
Shiori Suzuki*



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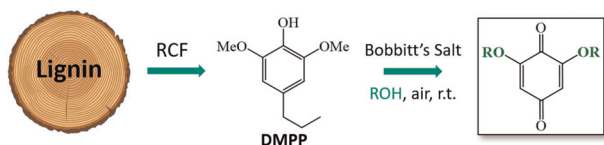
Well-controlled synthesis of biodegradable polyesters using edible catalysts

Toshiki Miwa, Ryota Suzuki, Tianle Gao,
Takuya Yamamoto, Feng Li,* Takuya Isono and
Toshifumi Satoh*



PAPERS

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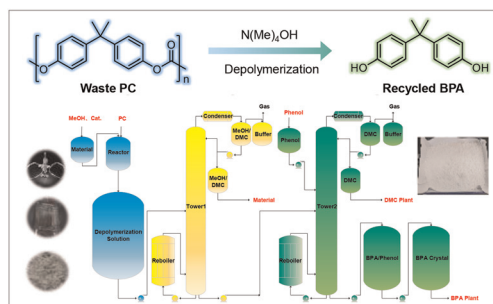


- ✓ Excellent yield and selectivity
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- ✓ Ambient temperature
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Selective conversion of lignin to benzoquinones under ambient conditions: unlocking the potential of a single platform chemical strategy

Xinquan Li, Anthony J. Chavez, Hao Zhang, Daria Andryushkina, Peter C. Ford and Mahdi M. Abu-Omar*

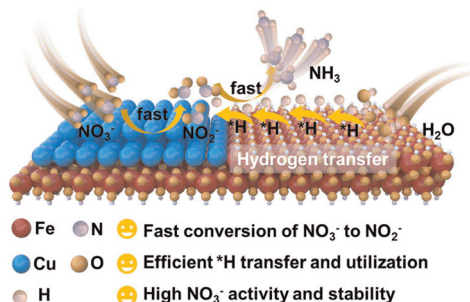
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Quaternary ammonium hydroxide-catalyzed methanolysis of bisphenol-A polycarbonate: performance, mechanism, and scale-up

Lu Zhang, Li Song, Haipeng Dong, Jing-Bang Kang, Honglu Zhu, YunJin Zhong, Hengcong Tao, Yao-Yao Zhang* and Xianming Zhang*

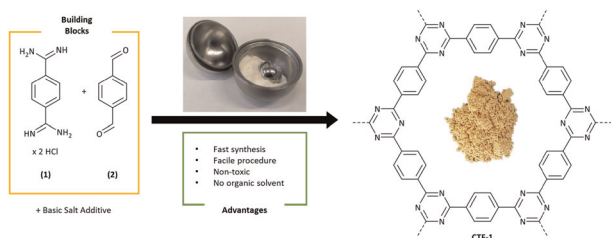
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Modulation of hydrogen transfer behaviors over Fe/Cu interfacial sites for a boosted electrocatalytic nitrate reduction reaction

Hongxia Luo, Lin Gu, Ziyang Wu, Jun Chen and Jianping Yang*

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Accessing photocatalytically active covalent triazine-based frameworks by ball milling: a fast and facile synthesis method

Leonie Sophie Häser, Sven Moos, Felix Egger, Keanu Birkelbach, Mirijam Zobel, Thomas Wiegand and Regina Palkovits*

