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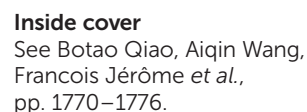


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1661

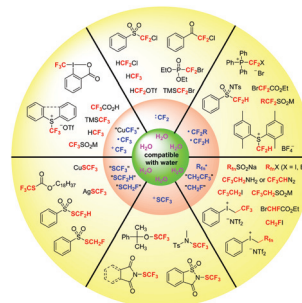
Outstanding reviewers for *Green Chemistry* in 2017

1662

Fluoroalkylation reactions in aqueous media: a review

Hai-Xia Song, Qiu-Yan Han, Cheng-Long Zhao and
Cheng-Pan Zhang*

Recent advances in aqueous fluoroalkylation using various fluoroalkylation reagents are summarized in this review.



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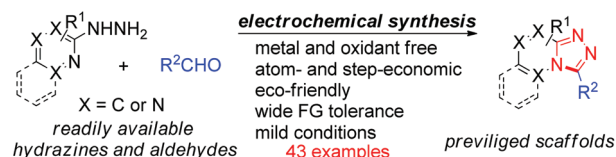
COMMUNICATIONS

1732

Electrochemical synthesis of 1,2,4-triazole-fused heterocycles

Zenghui Ye, Mingruo Ding, Yanqi Wu, Yong Li, Wenkai Hua and Fengzhi Zhang*

A reagent-free electrochemical synthesis of valuable 1,2,4-triazolo[4,3-a]pyridines and related heterocycles was developed.

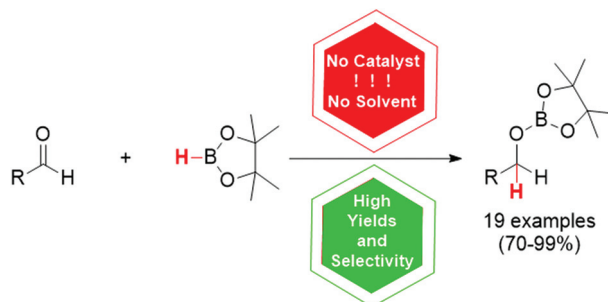


1738

Catalyst-free and solvent-free hydroboration of aldehydes

Hanna Stachowiak, Joanna Kaźmierczak, Krzysztof Kuciński and Grzegorz Hreczycho*

For the first time, a general method for catalyst-free and solvent-free hydroboration of various aldehydes has been developed.

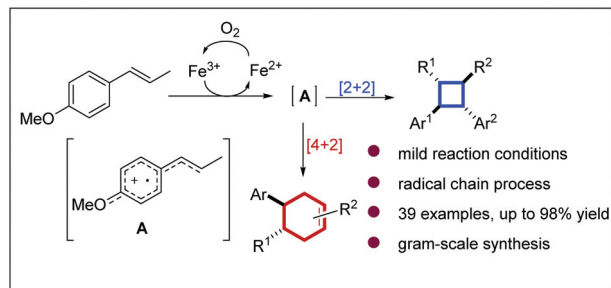


1743

Benign catalysis with iron: facile assembly of cyclobutanes and cyclohexenes via intermolecular radical cation cycloadditions

Yushuang Yu, Yu Fu and Fangrui Zhong*

We describe novel and facile iron-catalyzed crossed intermolecular radical cation cycloadditions of styrenes.

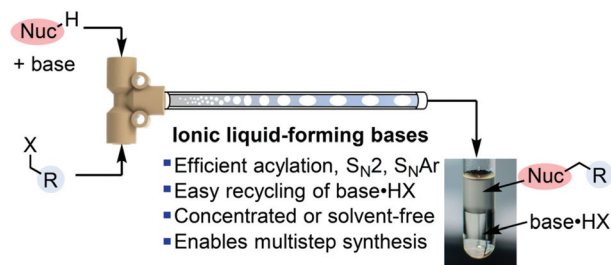


1748

Overcoming solid handling issues in continuous flow substitution reactions through ionic liquid formation

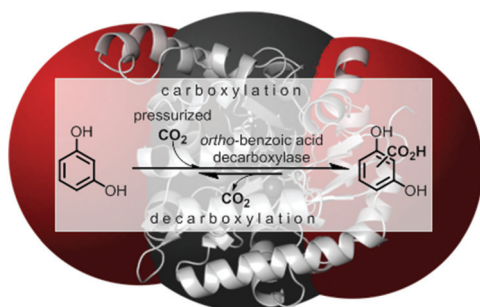
Saeed K. Kashani, Ryan J. Sullivan, Mads Andersen and Stephen G. Newman*

Continuous flow reactions, often plagued by precipitation and clogging problems, can be easily performed by selecting bases that form ionic liquids upon protonation.



COMMUNICATIONS

1754

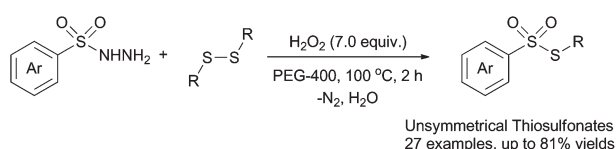


Pressurized CO₂ as a carboxylating agent for the biocatalytic *ortho*-carboxylation of resorcinol

Katharina Plasch, Gerhard Hofer, Walter Keller, Sam Hay, Derren J. Heyes, Alexander Dennig, Silvia M. Glueck* and Kurt Faber*

Utilization of gaseous carbon dioxide as a C₁-building block in the biocatalytic *ortho*-carboxylation of a phenol.

1760

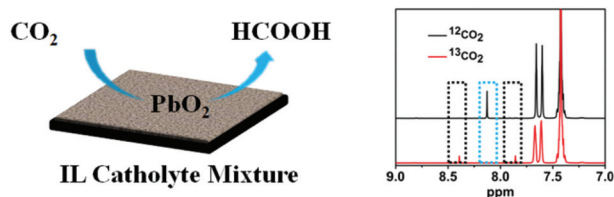


H₂O₂-mediated metal-free protocol towards unsymmetrical thiosulfonates from sulfonyl hydrazides and disulfides in PEG-400

Z. Peng, X. Zheng, Y. Zhang, D. An* and W. Dong*

A series of unsymmetrical thiosulfonates were successfully prepared from sulfonyl hydrazides and disulfides with the assistance of H₂O₂ (7.0 equiv.) in PEG-400 at 100 °C, releasing N₂ and H₂O as byproducts. EPR analysis proved the protocol proceeded through a free radical pathway and a plausible mechanism was proposed.

1765



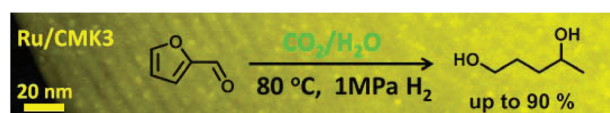
Highly efficient electrochemical reduction of CO₂ into formic acid over lead dioxide in an ionic liquid–catholyte mixture

Haoran Wu, Jinliang Song,* Chao Xie, Yue Hu and Buxing Han*

The combination of commercial lead dioxide and ionic liquid based catholytes showed highly efficient electrochemical reduction of CO₂ into formic acid.

PAPERS

1770



Catalytic cascade conversion of furfural to 1,4-pentanediol in a single reactor

Fei Liu, Qiaoyun Liu, Jinming Xu, Lei Li, Yi-Tao Cui, Rui Lang, Lin Li, Yang Su, Shu Miao, Hui Sun, Botao Qiao,* Aiqin Wang,* Francois Jérôme* and Tao Zhang

The selective transformation of furfural to 1,4-pentanediol has been achieved with up to 90% yield in a CO₂/H₂/H₂O system over Ru catalytic species supported on a mesoporous carbon.

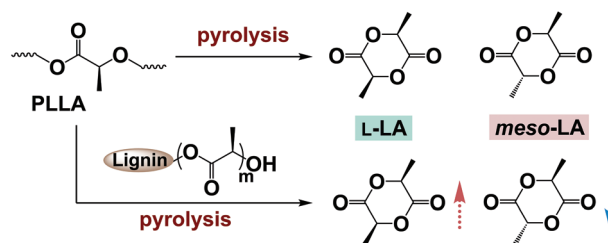
PAPERS

1777

A novel functional lignin-based filler for pyrolysis and feedstock recycling of poly(L-lactide)

Lin Dai,* Rui Liu and Chuanling Si*

Poly(D-lactic acid)-grafted lignin can add functionality, reduce cost, and enhance recyclability of poly(L-lactide).

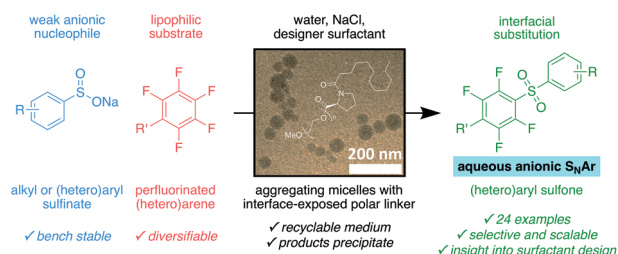


1784

Micelle-enabled clean and selective sulfonylation of polyfluoroarenes in water under mild conditions

Justin D. Smith, Tharique N. Ansari, Martin P. Andersson, Dongari Yadagiri, Faisal Ibrahim, Shengzong Liang, Gerald B. Hammond, Fabrice Gallou and Sachin Handa*

Proline-based designer surfactant FI-750-M has been demonstrated to enable selective nucleophilic aromatic substitution of polyfluoro(hetero)arenes by sulfinate salts in water under mild micellar conditions.

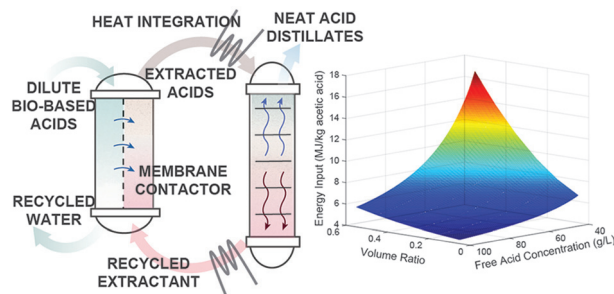


1791

In situ recovery of bio-based carboxylic acids

Patrick O. Saboe, Lorenz P. Manker, William E. Michener, Darren J. Peterson, David G. Brandner, Stephen P. Deutch, Manish Kumar, Robin M. Cywar, Gregg T. Beckham and Eric M. Karp*

The economics of chemical and biological processes is often dominated by the expense of downstream product separations from dilute product streams.

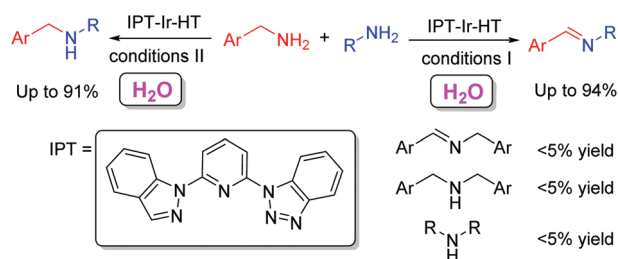


1805

Unsymmetrical indazolyl-pyridinyl-triazole ligand-promoted highly active iridium complexes supported on hydrotalcite and its catalytic application in water

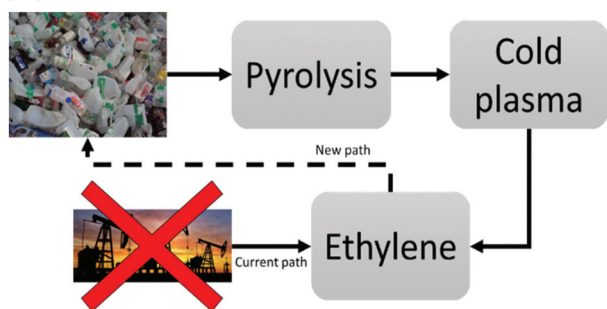
Chenyang Ge, Xinxin Sang, Wei Yao, Liang Zhang* and Dawei Wang*

Herein, an indazolyl-pyridinyl-triazole ligand was synthesized and its iridium complex supported on hydrotalcite was developed.



PAPERS

1813

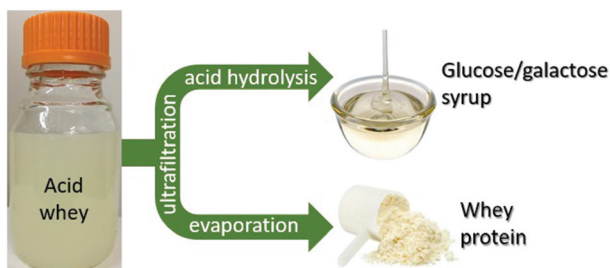


Monomer recovery through advanced pyrolysis of waste high density polyethylene (HDPE)

Laura S. Diaz-Silvarrey,* Kui Zhang and Anh N. Phan*

Cold plasma increases the recovery of ethylene opening up a new route for plastic manufacture avoiding the use of fossil fuels.

1824

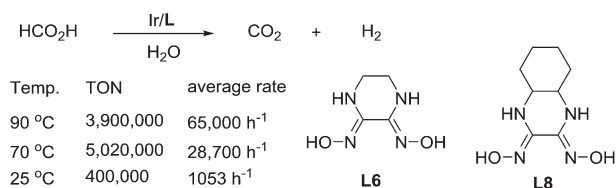


Production of monosaccharides and whey protein from acid whey waste streams in the dairy industry

Mark J. Lindsay, Theodore W. Walker, James A. Dumesic, Scott A. Rankin and George W. Huber*

A kinetic model is developed for acid-catalyzed lactose hydrolysis, and filtration improves the lactose hydrolysis rate and monosaccharide selectivity in acid whey.

1835

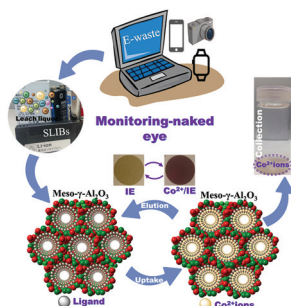


Hydrogen generation from formic acid decomposition on a highly efficient iridium catalyst bearing a diaminoglyoxime ligand

Sheng-Mei Lu, Zhijun Wang, Jijie Wang, Jun Li and Can Li*

A new iridium catalyst bearing a dioxime derived ligand has been developed for aqueous formic acid (FA) dehydrogenation in the absence of any additives. These catalysts can work at high temperature or room temperature with high efficiency and stability.

1841



Extraction and recovery of Co²⁺ ions from spent lithium-ion batteries using hierarchical mesosponge γ -Al₂O₃ monolith extractors

H. Gomaa, M. A. Shenashen,* H. Yamaguchi, A. S. Alamoudi and S. A. El-Safty*

Visual detection/adsorption/extraction of Co²⁺ ions from SLIBs through a simple, low-cost mesospongy ion-extractor/sensor/captor as a new effective route for e-waste management, is presented.

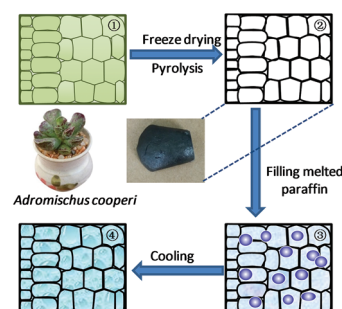
PAPERS

1858

Leakage-proof phase change composites supported by biomass carbon aerogels from succulents

Yanhong Wei, Juanjuan Li, Furong Sun, Jinrong Wu* and Lijuan Zhao*

The practical applications of organic phase change materials (PCM) are greatly limited, due to their leakage in the melted state and unacceptably low thermal conductivity.

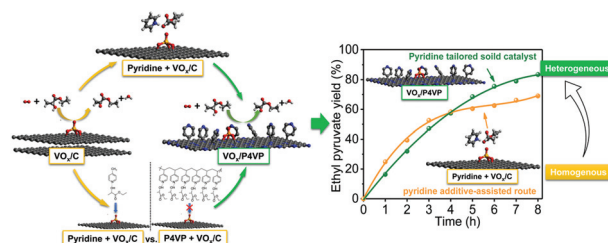


1866

Designing effective solid catalysts for biomass conversion: aerobic oxidation of ethyl lactate to ethyl pyruvate

Wei Zhang, Bernd Ensing, Gadi Rothenberg and N. Raveendran Shiju*

A novel highly efficient solid catalyst in which vanadia is supported on pyridine-rich carbon is designed for the oxidation of ethyl lactate to ethyl pyruvate.

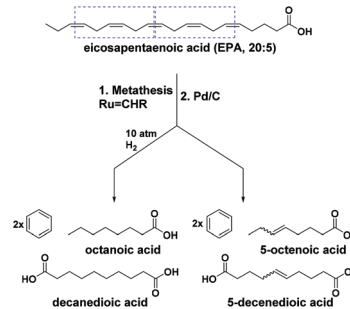


1874

Microalgae lipids as a feedstock for the production of benzene

Dennis Pinggen, Julia Zimmerer, Nele Klinkenberg and Stefan Mecking*

A two-step one-pot synthesis of benzene from the five-fold unsaturated fatty acid eicosapentaenoic acid (EPA), a component of microalgae oils, is presented. Simultaneously to the dehydrogenation, hydrogenation of the by-products to the desirable sebacic acid and octanoic acid is performed.

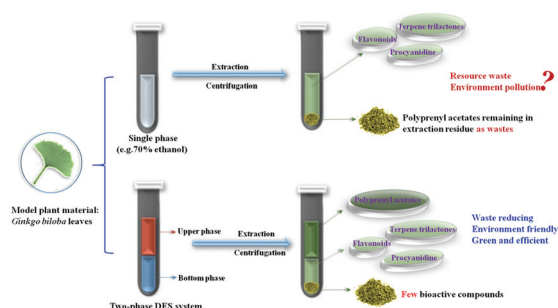


1879

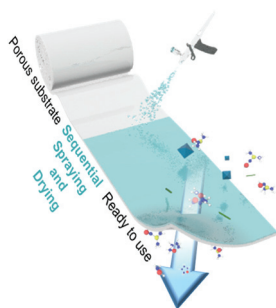
Two-phase systems developed with hydrophilic and hydrophobic deep eutectic solvents for simultaneously extracting various bioactive compounds with different polarities

Jun Cao, Luyao Chen, Mohan Li, Fuliang Cao, Linguo Zhao and Erzheng Su*

Two-phase systems developed with hydrophilic deep eutectic solvents (DESSs) and hydrophobic DESSs were prepared in this study for the first time.



1887



A compact and scalable fabrication method for robust thin film composite membranes

Ji Hoon Kim, Marcus Cook, Sang Hyun Park, Sun Ju Moon, Jeong F. Kim, Andrew G. Livingston and Young Moo Lee*

A compact and scalable membrane fabrication method proposes an environmentally friendly process intensification in terms of efficiently reduced production time, chemical consumption, and wastewater generation, resulting in a robust membrane.

1899



Oil-based paint

organic solvent
soluble polymer

New paint

carbonated water
soluble polymer

Water-based paint

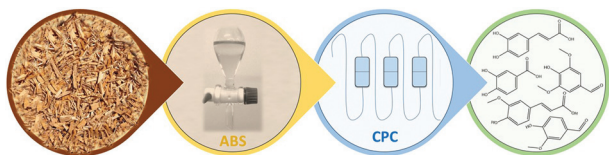
water as solvent
suspended polymer

Water-borne coatings that share the mechanism of action of oil-based coatings

Jaddie Ho, Bhanu Mudraboyina, Caroline Spence-Elder, Rui Resendes, Michael F. Cunningham* and Philip G. Jessop*

A new coating performs like an oil-based paint, with fully dissolved polymer, but uses water as a solvent.

1906



Separation of phenolic compounds by centrifugal partition chromatography

João H. P. M. Santos, Mafalda R. Almeida, Cláudia I. R. Martins, Ana C. R. V. Dias, Mara G. Freire, João A. P. Coutinho and Sónia P. M. Ventura*

An integrated process to purify a mixture of phenolic compounds was implemented in continuous regime by using centrifugal partition chromatography.