Green Chemistry

Cutting-edge research for a greener sustainable future

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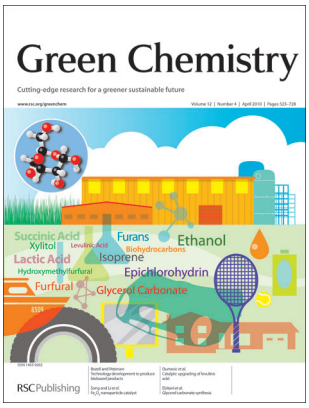
ISSN 1463-9262 CODEN GRCHFJ 12(4) 525–728 (2010)

Cover
See Jungnickel *et al.*, pp. 593–601. Analyzing 30 ionic liquids with 13 bacterial and fungal strains we determined a surface activity dependant anti-microbial mode of action.

Image reproduced by permission of Christian Jungnickel from *Green Chemistry*, 2010, **12**, 593.



Inside cover
See Bozell and Petersen, pp. 539–554.
Chemical products from carbohydrates will play a crucial role in the success of integrated biorefinery development.

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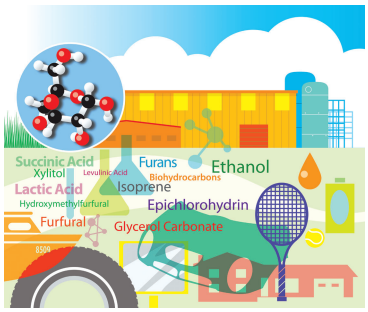
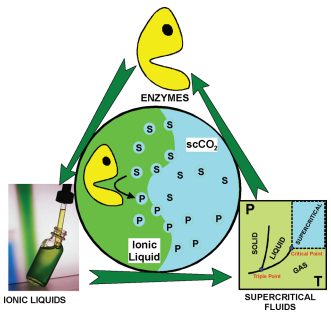
CRITICAL REVIEWS





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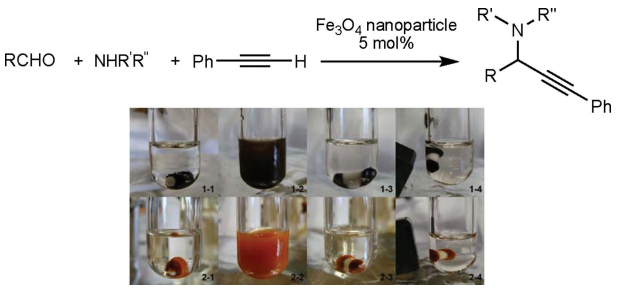

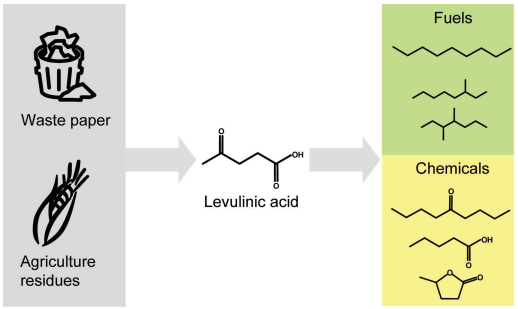

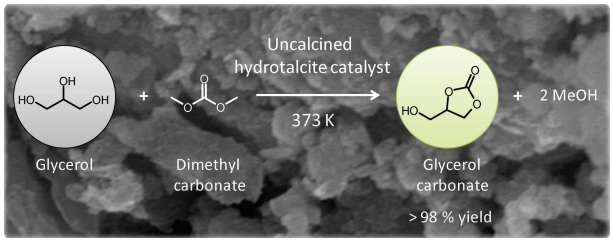

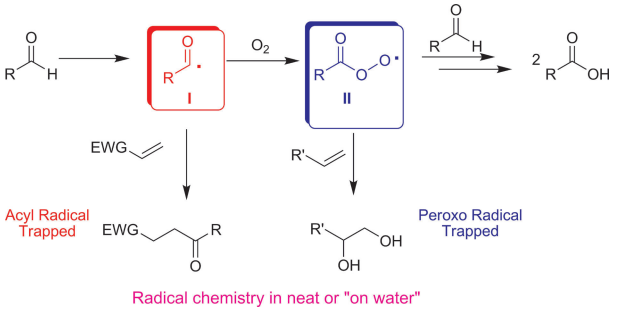

The aim of the conference is to highlight innovative concepts for the substitution of volatile organic solvents in solution phase synthesis. Emphasis will be laid on the development and application of alternative reaction media based on advanced fluids such as aqueous phases, ionic liquids, supercritical phases, green organic solvents, or soluble polymers, but includes also phase-separable reagents and related separation strategies in all areas of chemical synthesis.

Green Solvents For Synthesis

Alternative Fluids in Science and Application

October 10 – 13, 2010
Berchtesgaden/Germany

Green Solvents Conference

www.dechema.de/gsfs2010

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C. Fischmeister, University of Rennes/F
J.A. Gladysz, Texas A&M University, College Station, TX/USA
L. Greiner, RWTH Aachen/D
J.-D. Grunwaldt, KIT – Karlsruhe Institute of Technology/D
S.M. Howdle, University of Nottingham/UK
T. Ikariya, Tokyo Institute of Technology/J
P.G. Jessop, Queen's University, Kingston Ontario/CDN
U. Kragl, University of Rostock/D
Y.-W. Lee, Seoul National University/ROK
L. Szarvas, K. Müller, BASF SE, Ludwigshafen/D
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COMMUNICATIONS

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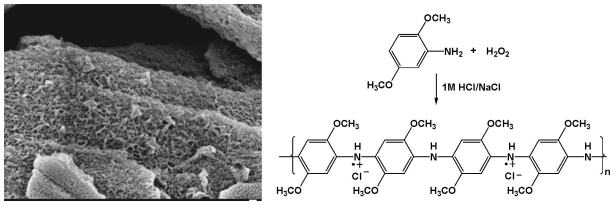
Green chemistry synthesis of nanostructured poly(2,5-dimethoxyaniline)

Sujit Jain, Sumedh P. Surwade, Srikanth Rao Agnihotra, Vineet Dua, Pamela A. Eliason, Gregory J. Morose and Sanjeev K. Manohar*

Bulk quantities of nanostructured poly(2,5-dimethoxyaniline) having high charge storage capacity are synthesized in one step using H_2O_2 as an environmentally friendly oxidant.



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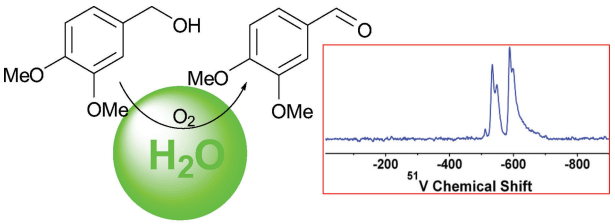
Synergistic effect of vanadium–phosphorus promoted oxidation of benzylic alcohols with molecular oxygen in water

Zhongtian Du, Jiping Ma, Hong Ma, Jin Gao and Jie Xu*

The synergistic effect of vanadium–phosphorus in aqueous solution is crucial to ensure high efficiency for $VOPO_4$/TEMPO-catalyzed oxidation of benzylic alcohols with molecular oxygen in water.



How can vanadium work for catalytic alcohol oxidation in H_2O?

PAPERS

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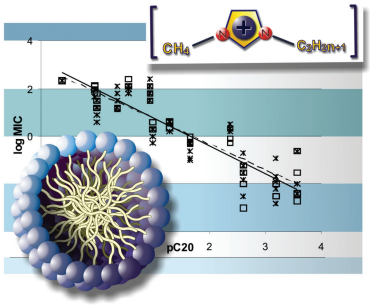
Antimicrobial and surface activity of 1-alkyl-3-methylimidazolium derivatives

Justyna Łuczak, Christian Jungnickel,* Izabela Łącka, Stefan Stolte and Jan Hupka

By analyzing 30 ionic liquids with 13 bacterial and fungal strains, we determined an antimicrobial mode of action dependant on the surface activity.



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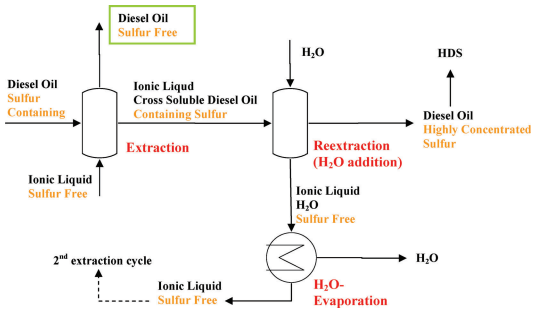
Desulfurization of diesel oil by selective oxidation and extraction of sulfur compounds by ionic liquids—a contribution to a competitive process design

Andreas Seeberger* and Andreas Jess

Efficient extraction of oxidized sulfur compounds from diesel oil by ionic liquids is combined with the continuous IL regeneration by addition of H_2O and the calculation of the overall energy demand.



2nd Asia Pacific Conference On Ionic Liquids And Green Processes

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Robin D. Rogers


Douglas MacFarlane


Zhang Suojiang


Han Buxing


Deng Youquan

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Sheng Dai


Frank Endres


Axel Koenig


Holger Loewe


Giang VO THANH


Anil Kumar

Main Topics of conference

- Modeling and Computational studies
- Structure, Spectroscopy and Thermodynamics
- New Materials and Compounds
- Syntheses and Catalysis
- Separation and Transport Processes
- Electrochemical and Energy Applications
- Sustainable and Environmental Technologies
- Process Engineering and Industrial Applications

Call for Abstracts

Abstracts have to be submitted until April 30th by sending template to info@apcil.org.

Important Dates

Abstract submission	April 30, 2010
Notification of abstract acceptance	May 31, 2010
Early bird registration	May 31, 2010
Deadline to apply for invitation letter (required for visa application)	July 10, 2010

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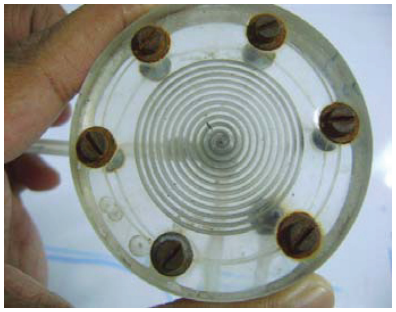

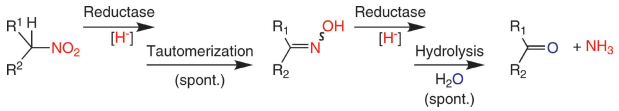

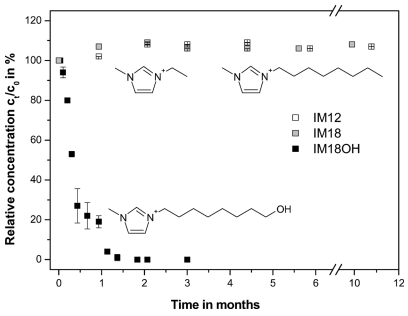

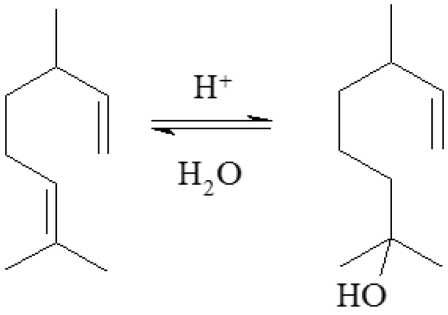

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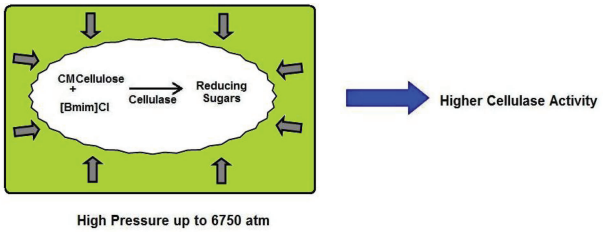

Effect of the ionic liquid [bmim]Cl and high pressure on the activity of cellulase

Ângelo C. Salvador, Mickael da C. Santos and Jorge A. Saraiva*

Cellulase shows 1.7-fold higher activity under high pressure (up to 600 MPa) in a buffer with 10% [bmim]Cl compared to atmospheric pressure, results that are interesting to improve enzymes' activity in ionic liquids using high pressure.

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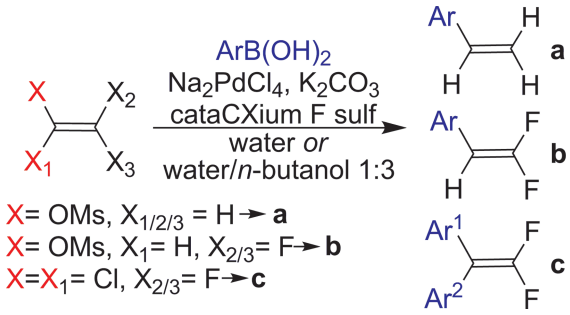

Cross coupling in water: Suzuki–Miyaura vinylation and difluorovinylation of arylboronic acids

Jan Pschierer, Natalie Peschek and Herbert Plenio*

An *in situ* formed Pd complex with a sulfonated fluorenylphosphine enables the vinylation and difluorovinylation of arylboronic acids *via* Suzuki–Miyaura coupling in water.

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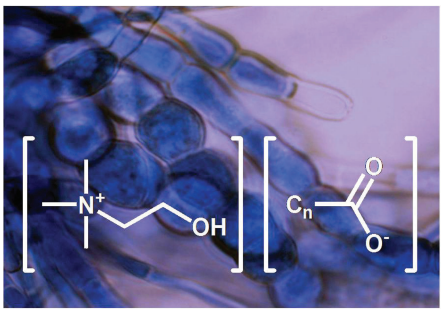

Novel biocompatible cholinium-based ionic liquids—toxicity and biodegradability

Marija Petkovic, Jamie L. Ferguson, H. Q. Nimal Gunaratne, Rui Ferreira, Maria C. Leitão, Kenneth R. Seddon, Luís Paulo N. Rebelo and Cristina Silva Pereira*

A toxicological assessment of the response of a series of novel cholinium alkanoates towards filamentous fungi (*Penicillium* sp.) highlights that conscious design of ionic liquids can lead to the development of truly biocompatible salts, carrying high biodegradability potential, without adversely affecting their outstanding solvent quality.

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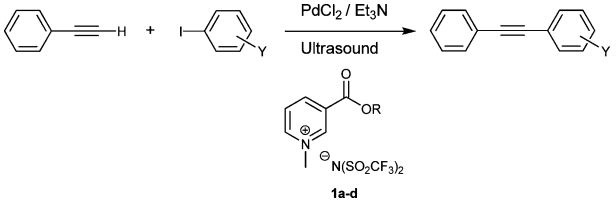
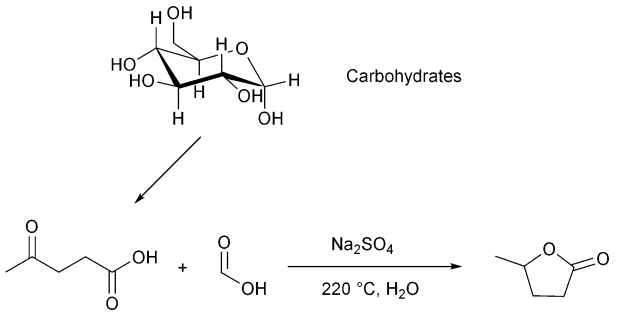
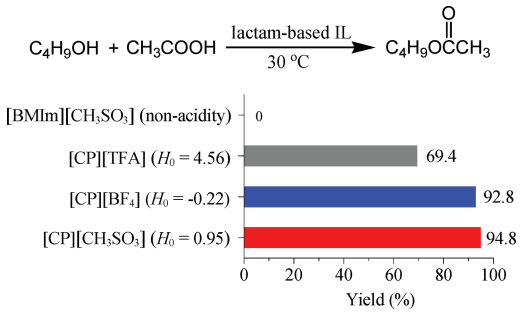


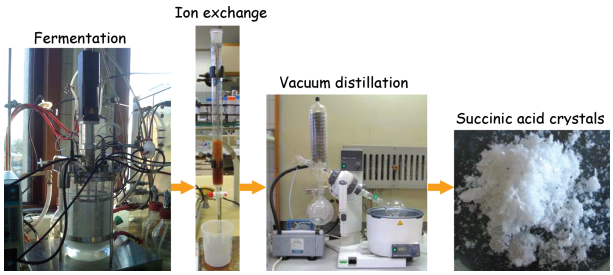
Sonogashira coupling reactions in biodegradable ionic liquids derived from nicotinic acid

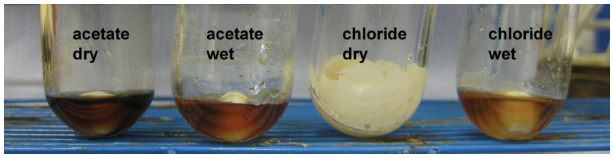
Jitendra R. Harjani, Theodore J. Abraham, Alwyn T. Gomez, M. Teresa Garcia, Robert D. Singer* and Peter J. Scammells*

A series of biodegradable pyridinium ionic liquids have been evaluated as reaction media for copper- and phosphine-free Sonogashira coupling reactions. The stability of these ionic liquids toward basic conditions was analysed in order to further probe their utility for transition metal catalysed reactions which require the presence of a base.









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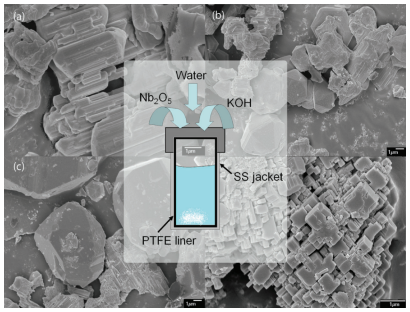

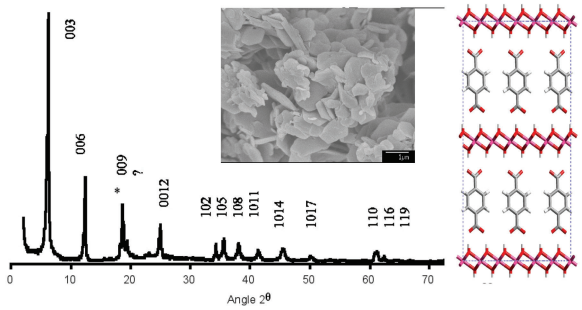

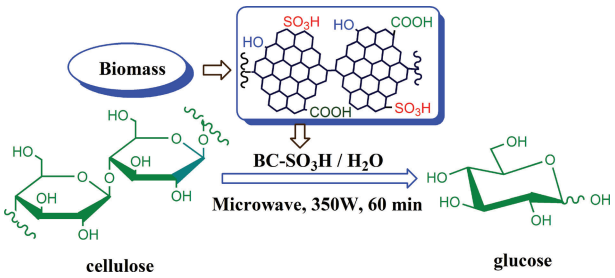

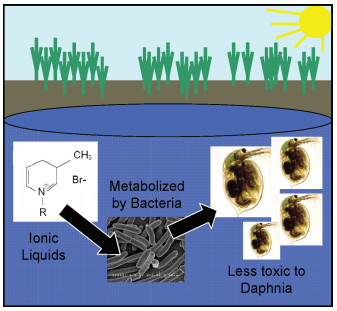

PAPERS

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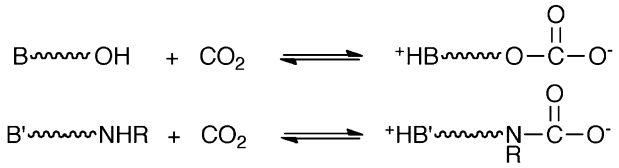

Reversible zwitterionic liquids, the reaction of alkanol guanidines, alkanol amidines, and diamines with CO_2

David J. Heldebrant,* Phillip K. Koech, M. Trisha C. Ang, Chen Liang, James E. Rainbolt, Clement R. Yonker and Philip G. Jessop

Alkanolamidines, alkanolguanidines and diamines each react with CO_2 to form reversible zwitterionic liquids. All three classes could be reverted to their non-ionic forms by thermally stripping CO_2 near 50 °C.

AUTHOR INDEX

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