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EDITORIAL

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Introduction to the circular economy themed collection

Matthew L. Davies

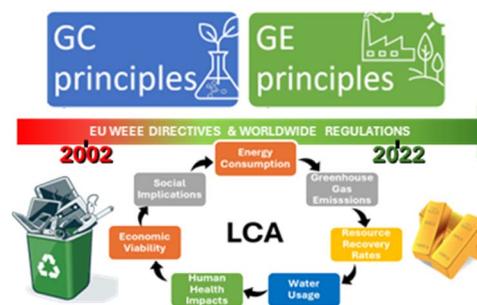


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2002–2022: 20 years of e-waste regulation in the European Union and the worldwide trends in legislation and innovation technologies for a circular economy

A. Serpe,* D. Purchase,* L. Bisschop, D. Chatterjee, G. De Giannis, H. Garelick, A. Kumar, W. J. G. M. Peijnenburg, V. M. I. Piro, M. Cera, Y. Shevah and S. Verbeek



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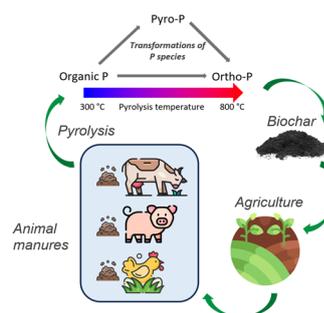
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Phosphorus recovery from animal manures through pyrolysis: phosphorus transformations, release mechanisms, and applications of manure biochars in agriculture

Jesper T. N. Knijnenburg, Siraprapa Suwanree, Duncan Macquarrie, Pornnapa Kasemsiri and Kaewta Jetsrisuparb*

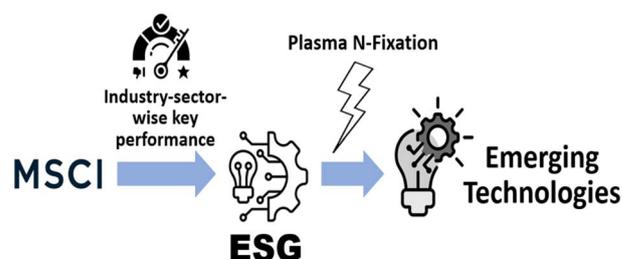


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ESG assessment methodology for emerging technologies: plasma versus conventional technology for ammonia production

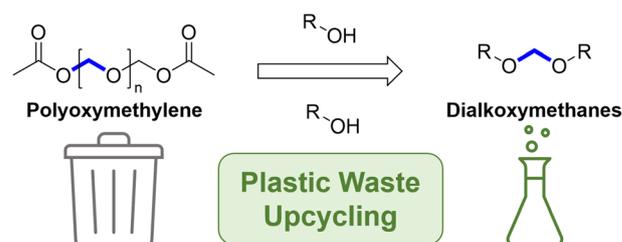
Le Yu,* Amin Keilani, Nam Nghiep Tran, Marc Escribà-Gelonch, Michael Goodsite, Sukhbir Sandhu, Harpinder Sandhu and Volker Hessel*



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Valorization of polyoxymethylene (POM) waste as a C₁ synthon for industrially relevant dialkoxymethanes and cyclic aminals

Matthew J. Cullen, Matthew G. Davidson,* Matthew D. Jones* and Jack A. Stewart



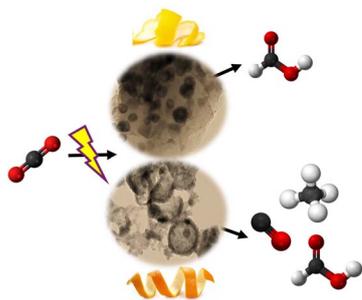
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From citrus waste to value: optimizing sulfonated carbons for limonene upcycling into value-added products

Gabrielle M. Reis, Renan S. Nunes, Gabriela T. M. Xavier, Marina V. Kirillova, Alexander M. Kirillov, Dalmo Mandelli and Wagner A. Carvalho*



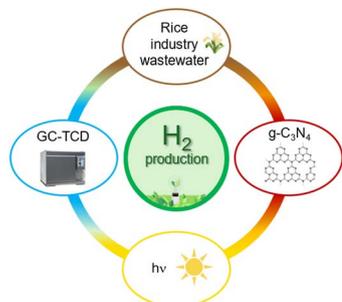
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Valorisation of citrus waste for sustainable synthesis of carbon-supported copper nanoparticles active in CO₂ electroreduction

Federica De Luca, Palmarita Demoro, Izuchica Nduka, Cristina Italiano, Salvatore Abate* and Rosa Arrigo*

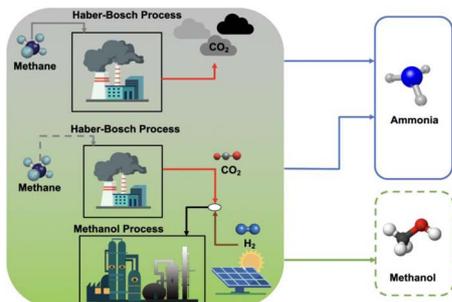
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Exploiting rice industry wastewater for more sustainable sunlight-driven photocatalytic hydrogen production using a graphitic carbon nitride polymorph

Petra Bianchini, Antonella Profumo, Lorenzo Cerri, Costanza Tedesco, Lorenzo Malavasi and Andrea Speltini*

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Towards flexible large-scale, environmentally sustainable methanol and ammonia co-production using industrial symbiosis

Joshua Magson, Thérèse G. Lee Chan, Akeem Mohammed and Keeran Ward*

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LIGNOCELLULOSE SACCHARIFICATION: HISTORICAL INSIGHTS AND RECENT INDUSTRIAL ADVANCEMENTS TOWARDS 2ND GENERATION GLUCOSE



Lignocellulose saccharification: historical insights and recent industrial advancements towards 2nd generation sugars

Jorge Bueno Moron, Gerard P. M. van Klink and Gert-Jan M. Gruter*



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A review on bio-inspired nanoparticles and their impact on membrane applications

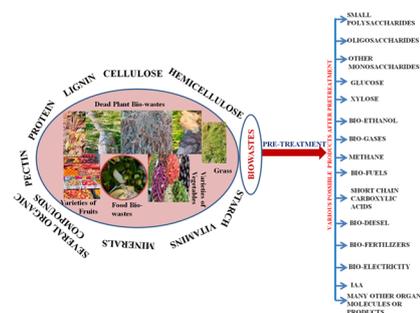
Sinki Puri, Swathi Divakar, K. Pramoda, B. M. Praveen* and Mahesh Padaki*



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Fungal pretreatment methods for organic wastes: advances and challenges in biomass valorization

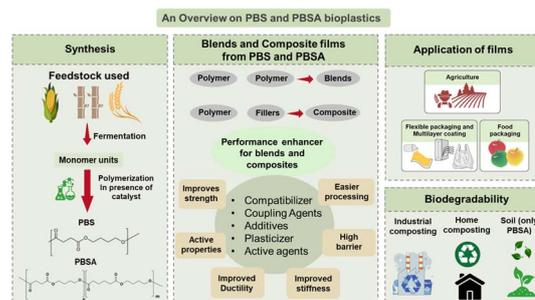
Pankaj Kumar Chaurasia,* Shashi Lata Bharati,* Sunita Singh, Azhagu Madhavan Sivalingam, Shiv Shankar and Ashutosh Mani*



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Studies on poly(butylene succinate) and poly(butylene succinate-co-adipate)-based biodegradable plastics for sustainable flexible packaging and agricultural applications: a comprehensive review

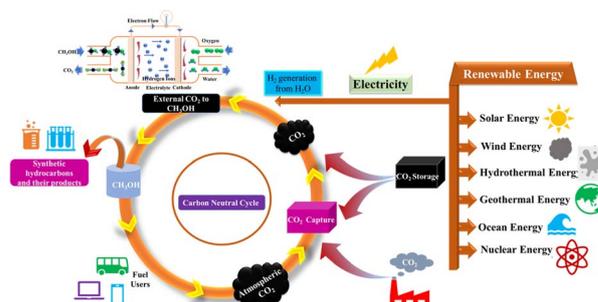
Debarshi Nath, Manjusri Misra,* Fadi Al-Daoud and Amar K. Mohanty*



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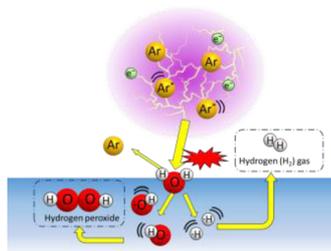
Advanced catalytic strategies for CO₂ to methanol conversion: noble metal-based heterogeneous and electrochemical approaches

Soumalya Roy, Ezhava Manu Manohar, Sujoy Bandyopadhyay, Manik Chandra Singh, Yeji Cha, Soumen Giri,* Sharad Lande,* Kyungsu Na,* Junseong Lee* and Sourav Das*



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Noble gas Plasma-Collisional Splitting (NgPCS)

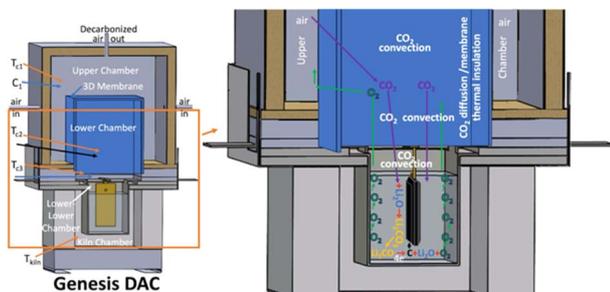


Collisional energy of noble gas plasma decomposes H_2O into H_2 and H_2O_2 .

Hydrogen production via water splitting using noble gas plasma-collisional splitting (NgPCS)

Souma Yoshida, Yoshiyuki Takatsuji and Tetsuya Haruyama*

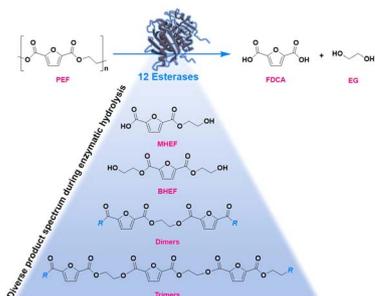
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Direct air capture (DAC): molten carbonate direct transformation of airborne CO_2 to durable, useful carbon nanotubes and nano-ions

Gad Licht,* Ethan Peltier, Simon Gee and Stuart Licht*

PAPERS

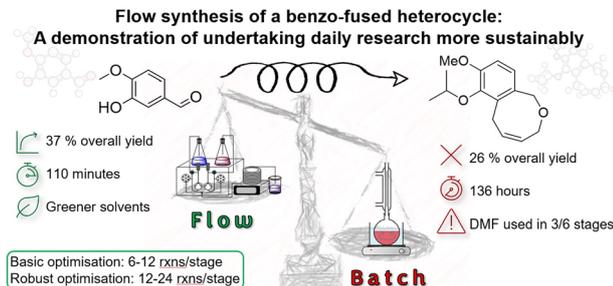
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Analysis of the product-spectrum during the biocatalytic hydrolysis of PEF (poly(ethylene furanoate)) with various esterases

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Synthesis of an 8-membered oxygen-containing benzo-fused heterocycle using flow technologies – an exercise in undertaking research with sustainability as a driver

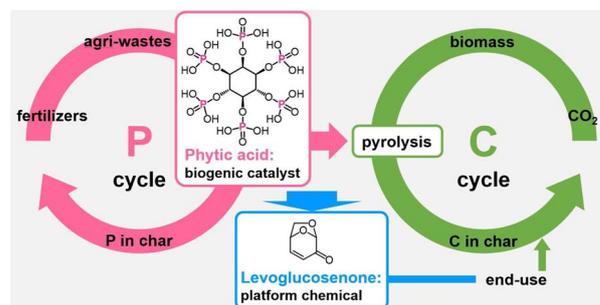
Bernice M. Currie, Nicole C. Neyt-Galetti, Tanya Olivier, Petra Van der Merwe, Lerato S. Dibokwane, A. Michelle Reinhardt, Lorinda T. van Wyk, Jenny-Lee Panayides* and Darren L. Riley*



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Phytic acid as a biorenewable catalyst for cellulose pyrolysis to produce levoglucosenone

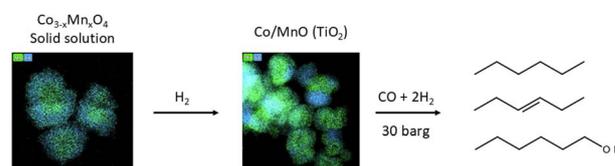
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Jonathan Sperry, Shusaku Asano and Jun-ichiro Hayashi



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Examining the effect of manganese distribution on alcohol production in CoMn/TiO₂ FTS catalysts

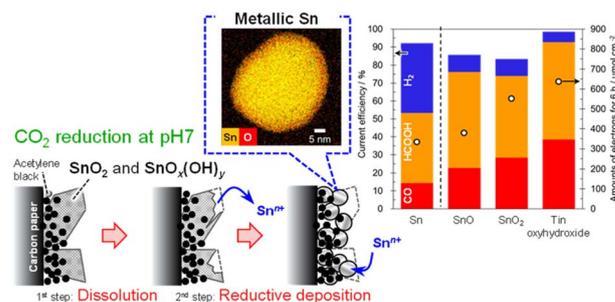
Jay M. Pritchard, Matthew Lindley, Danial Farooq,
Urvashi Vyas, Sarah J. Haigh, James Paterson,
Mark Peacock and Andrew M. Beale*



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Reduction behaviors of tin oxides and oxyhydroxides during electrochemical reduction of carbon dioxide in an aqueous solution under neutral conditions

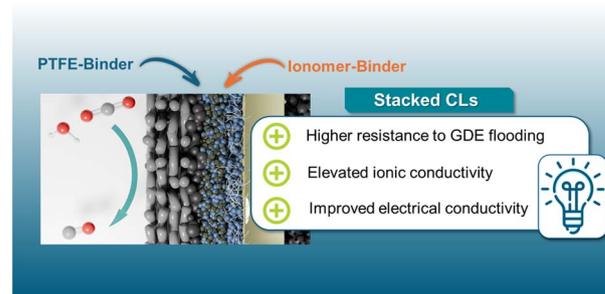
Etsushi Tsuji,* Kaede Ohwan, Tomoki Ishikawa,
Yuki Hirata, Hiroyuki Okada, Satoshi Suganuma
and Naonobu Katada



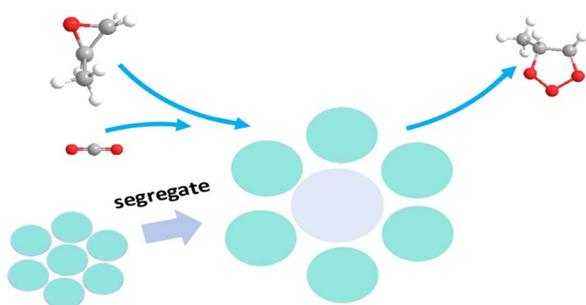
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The best of both worlds: stacked catalytic layers for the electrocatalytic generation of CO in zero-gap electrolyzers

Lucas Hoof, Kevinjeorjios Pellumbi, Didem Cansu Güney,
Dennis Blandszun, Franz Bommas, Daniel Siegmund,
Kai Junge Puring, Rui Cao, Katharina Weber*
and Ulf-Peter Apfel*



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Spaced functionalization of poly(ionic liquid)s for boosting the catalytic conversion of CO₂ into cyclic carbonates

Qianmeng Zhao, Shaifei Liu, Wen Liu, Mengqian Fu, Zhenyang Xu, Qian Su* and Weiguo Cheng*

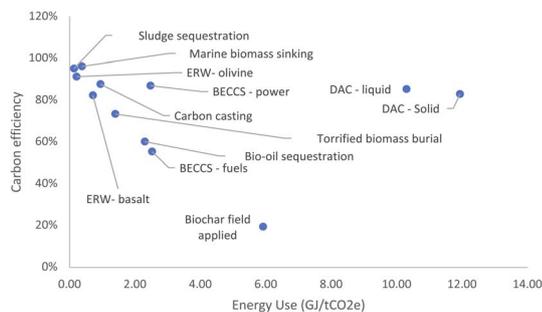
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Life cycle assessment of industry wastewater treatment plant: a case study in Vietnam

Hung Van Tran, Hao Anh Phan and Ha Manh Bui*

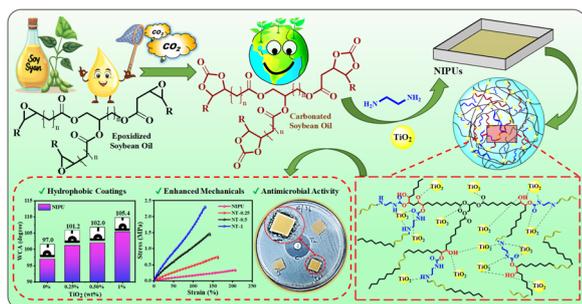
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Carbon removal efficiency and energy requirement of engineered carbon removal technologies

Daniel L. Sanchez,* Peter Psarras, Hannah K. Murnen and Barclay Rogers

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Soybean oil-derived, non-isocyanate polyurethane-TiO₂ nanocomposites with enhanced thermal, mechanical, hydrophobic and antimicrobial properties

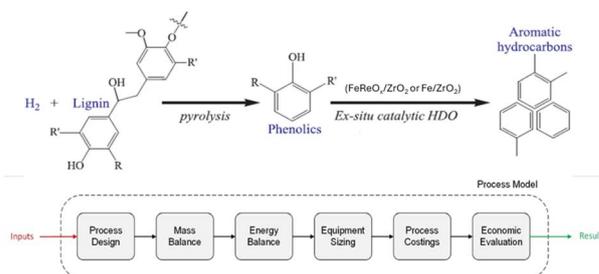
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Techno-economic assessment of two-stage hydrolysis of lignin for BTX production using iron-based catalysts

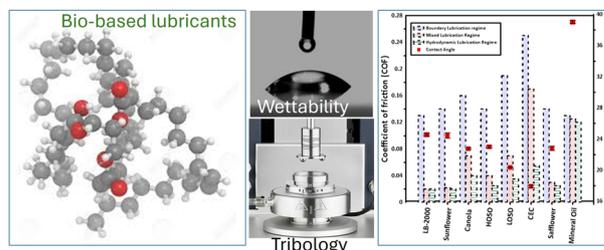
Giuseppe Bagnato, Jamie Horgan and Aimaro Sanna*



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Thermo-rheological and tribological properties of low- and high-oleic vegetable oils as sustainable bio-based lubricants

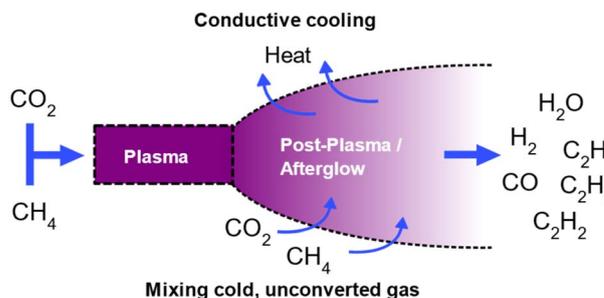
Abiodun Saka, Tobeckukwu K. Abor, Anthony C. Okafor and Monday U. Okoronkwo*



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Afterglow quenching in plasma-based dry reforming of methane: a detailed analysis of the post-plasma chemistry *via* kinetic modelling

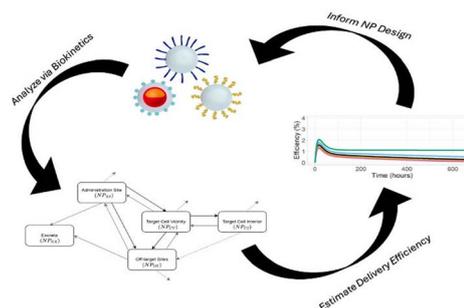
Joachim Slaets, Eduardo Morais and Annemie Bogaerts*



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Optimizing nanoparticle-mediated drug delivery: insights from compartmental modeling *via* the CompSafeNano cloud platform

Periklis Tsiros, Nikolaos Chimarios, Dimitrios Zouraris, Andreas Tsoumanis, Haralambos Sarimveis, Georgia Melagraki, Iseult Lynch and Andreas Afantitis*



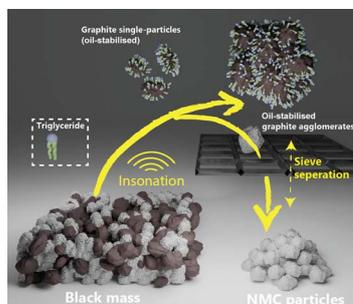
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Activated carbon derived from rice husks enhanced by methylene blue and gamma irradiation for supercapacitor applications

Thannithi Anusonthiwong,
Natavoranun Suwatanapongched,
Jittiyada Surawattanawiset, Nattamon Chittreisin,
Somlak Ittisanronnachai, Tanagorn Sangtawesin*
and Suranan Anantachaisilp*

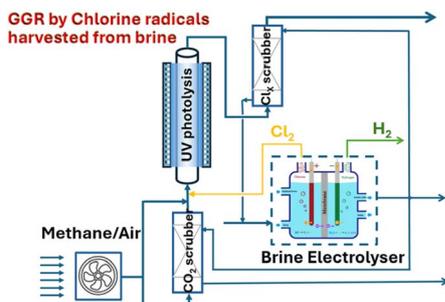
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Using ultrasonic oil–water nano-emulsions to purify lithium-ion battery black mass

Chunhong Lei, Karl S. Ryder, Andrew P. Abbott
and Jake M. Yang*

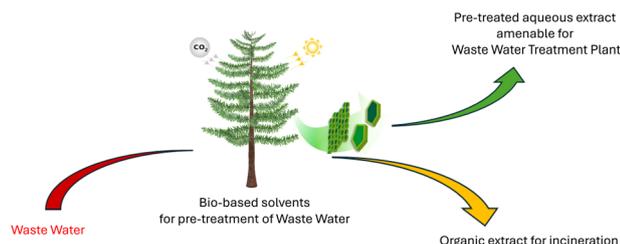
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Tropospheric methane remediation by enhancing chlorine sinks

Qingchun Yuan,* Bo Xiao, Renaud de Richter,* Wei Li,
Raul Quesada-Cabrera and Tingzhen Ming

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Finding suitable biobased solvents for extractions from water

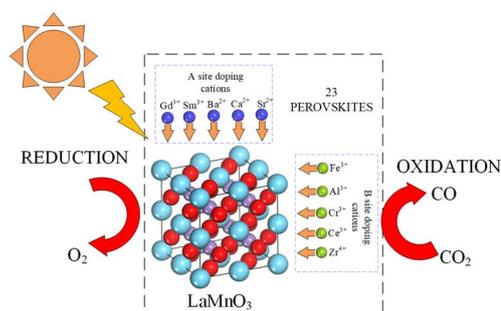
Gerhard König,* Pascal Hauk and Fabrice Gallou*



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Fuel production capacity and DFT analysis of cation modified perovskites for enhanced thermochemical CO₂ dissociation

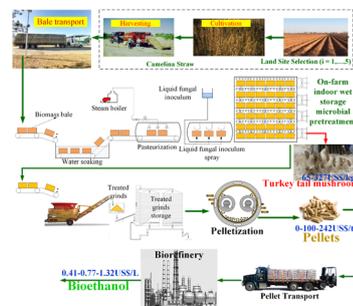
Jian Cong, Eric Beche and Stéphane Abanades*



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Technoeconomic analysis of an integrated camelina straw-based pellet and ethanol production system

Cuong N. Dao,* Lope G. Tabil, Edmund Mupondwa, Tim Dumonceaux, Xue Li and Ajay K. Dalai



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Correction: Carbon removal efficiency and energy requirement of engineered carbon removal technologies

Daniel L. Sanchez,* Peter Psarras, Hannah K. Murnen and Barclay Rogers

