

IN THIS ISSUE

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Cover

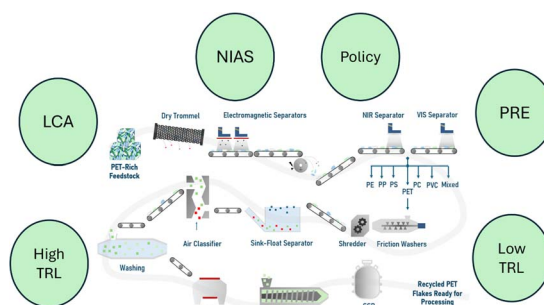
See Dagmar R. D'hooge, Mariya Edeleva *et al.*, pp. 1996–2047. Image reproduced by permission of Ghent University and Erion Bezeraj from *RSC Sustainability*, 2025, **3**, 1996.

CRITICAL REVIEWS

1996

State-of-the-art of industrial PET mechanical recycling: technologies, impact of contamination and guidelines for decision-making

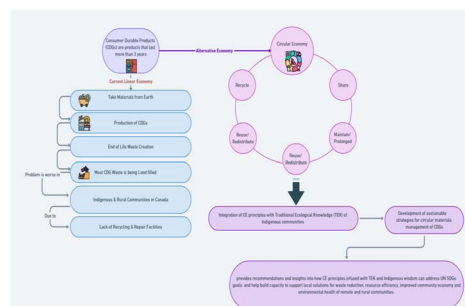
Erion Bezeraj, Simon Debrie, Francisco J. Arraez, Pablo Reyes, Paul H. M. Van Steenberghe, Dagmar R. D'hooge* and Mariya Edeleva*



2048

Integrating traditional ecological knowledge into a circular economy framework using the example of consumer durable goods for northern rural communities

Yasamin Atabaki Fard Tehrani, Atanu Sarkar* and Shegufra Shetranjiwalla*



Environmental Science: Atmospheres

GOLD
OPEN
ACCESS

Connecting communities
and inspiring new ideas

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Fundamental questions
Elemental answers



CRITICAL REVIEWS

2064

Exploring mineral–organic interactions for eco-friendly concrete alternatives: a radical concept

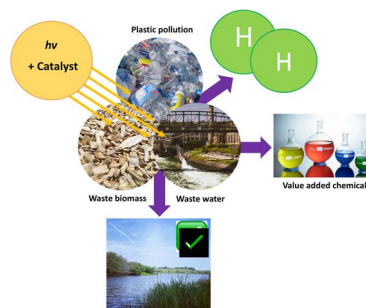
Peter Spencer, Hejie Li, Scott Hocknull, Gareth Chalmers and Tianfang Wang*



2079

Photocatalytic valorisation of real-world substrates

Kathryn Ralphs,* Junhong Liu, Lan Lan, Christopher Hardacre, Nathan Skillen and Peter K. J. Robertson

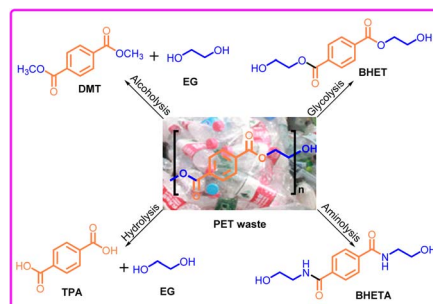


TUTORIAL REVIEWS

2111

Chemical degradation and recycling of polyethylene terephthalate (PET): a review

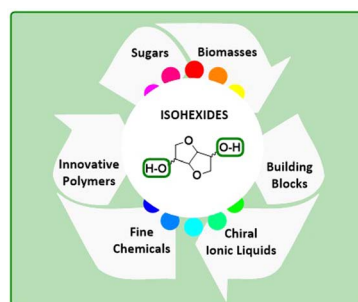
Zhiqiang Guo,* Jin Wu and Junhong Wang*



2134

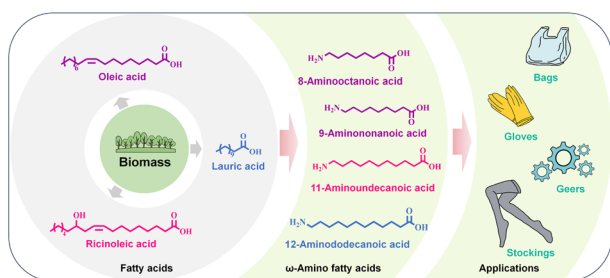
Synthetic routes and fields of application of isohexides: comprehensive perspective of relevant industrial compounds

Daria Armani*



TUTORIAL REVIEWS

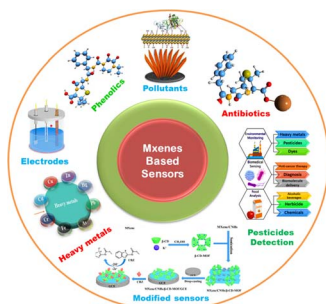
2149



Multienzyme cascade synthesis of ω -amino fatty acids from vegetable-derived precursors for use as nylon monomers

Yueyue Zhou, Ran Lu, Xiaoxia Gao, Lu Lin, Yongjun Wei* and Xiao-Jun Ji*

2160

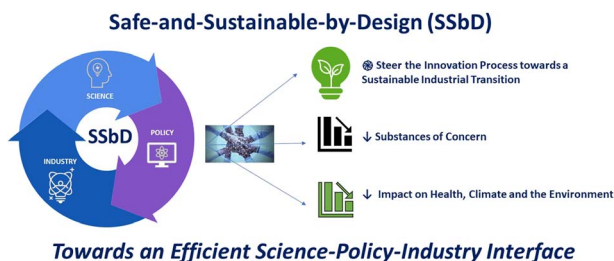


MXene-based nanocomposites: a new horizon for electrochemical monitoring of environmental pollutants

Ali Hyder, Meher-Un-Nisa Khilji, Jamil A. Buledi, Ayaz Ali Memon,* Azharuddin Ghangro, Misbah ur Rehman and Khalid Hussain Thebo*

PERSPECTIVE

2185

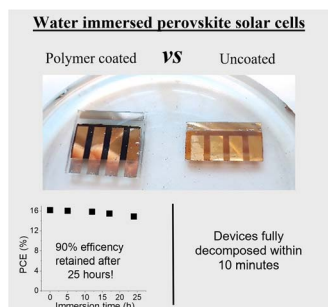


Accelerating the industrial transition with safe-and-sustainable-by-design (SSbD)

Lya G. Soeteman-Hernández,* Joel A. Tickner, Ann Dierckx, Klaus Kümmeler, Christina Apel and Emma Strömberg

COMMUNICATIONS

2192



Spray-coating polystyrene on perovskite solar cells increases thermal stability and moisture tolerance

Azar Sadollahkhani, Valentina Leandri, Mahboubeh Jamshidi and James M. Gardner*

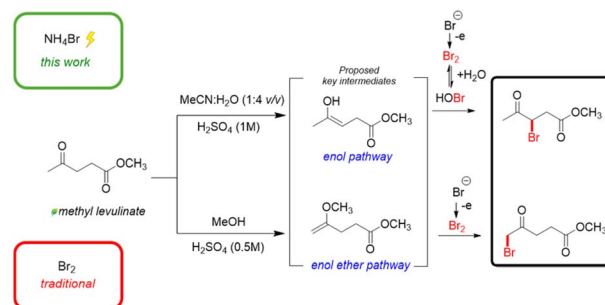


COMMUNICATIONS

2198

Medium-dependent regioselectivity of electrochemical bromination of methyl levulinate

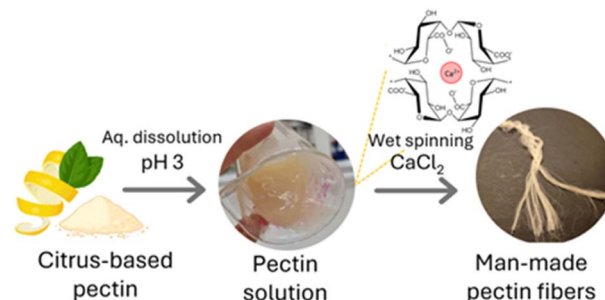
Dmitry A. Pirgach, Raghavendra Meena, Guanna Li, Fedor M. Miloserdov, Daan S. van Es, Pieter C. A. Bruijninx and Johannes H. Bitter*



2205

Man-made textile fibres from pectin

Aleksandra M. Kozłowski,* Kristina E. Lindgren, Gino Mangiante and Tobias Köhnke

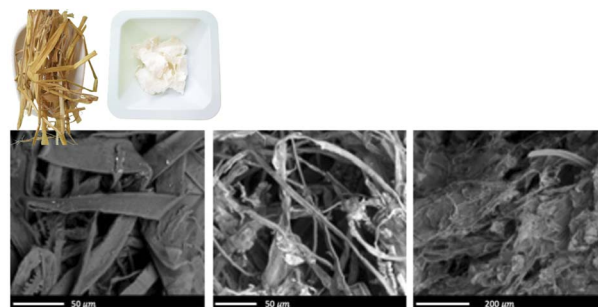


PAPERS

2210

Producing dissolving pulp from agricultural waste

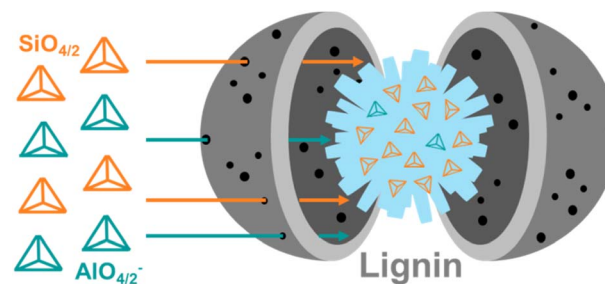
Joanna Wojtasz, Niclas Sjöstedt, Benjamin Storm, Manuel Mammen Parayil, Amanda Ulefors, Linnea Nilsson, Maria Alejandra Hernández Leal, Anne Michud, Åsa Östlund, Tomas Rydberg and Diana Bernin*



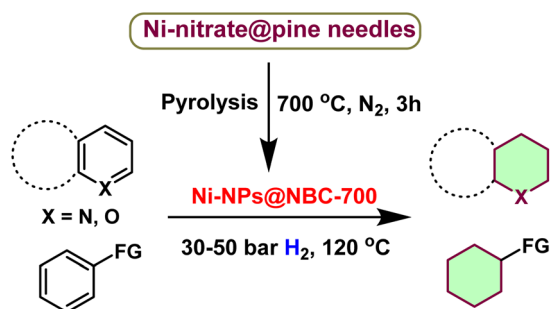
2221

Eco-designed ZSM-5 zeolites: biomass-assisted modifications and catalytic evaluation through model reactions

Camille Longue, Anne Bolmont, Valérie Ruaux, Aurélie Vicente, Nourrdine Chaouati, Marie Desmurs, Benoît Louis* and Ludovic Pinard*



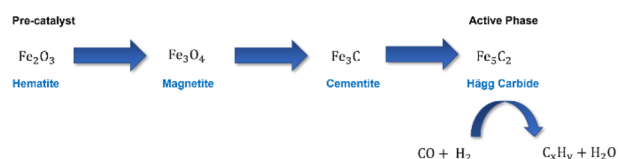
2235



A biomass-derived nickel-based nanomaterial as a sustainable and reusable catalyst for hydrogenation of arenes and heteroarenes

Vishakha Goyal, Tarun Bhatt, Anshid Kuttasseri, Arup Mahata,* Radek Zbořil,* Kishore Natte* and Rajenahally V. Jagadeesh*

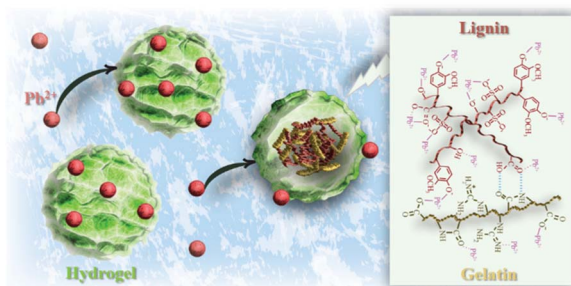
2246



The impact of co-feeding carbon dioxide in Fischer–Tropsch-to-olefin catalysis: an inelastic neutron scattering study

Alisha L. Davidson, Ramandeep S. Dosanjh, Stewart F. Parker and David Lennon*

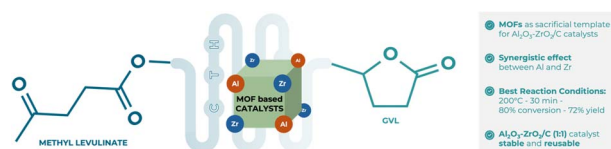
2255



Novel green fabrication of stable hydrogel beads from industrial waste lignin for efficient Pb(II) ion removal

Xiwen Hu, Muhammad Amirul Islam,* Aria Khalili, Amir Aghaei, Jae-Young Cho and Mohtada Sadrzadeh*

2273



Continuous flow production of γ -valerolactone from methyl-levulinate promoted by MOF-derived Al₂O₃-ZrO₂/C catalysts

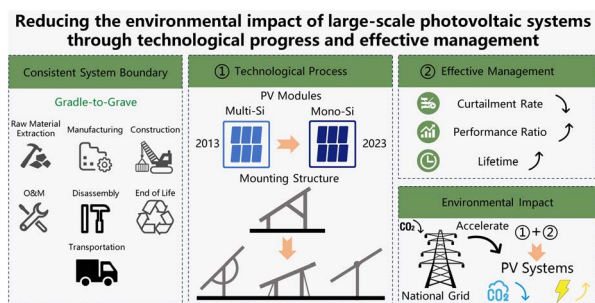
Marina Ronda-Leal, Alina M. Balu, Rafael Luque, Francesco Mauriello, Alberto Ricchebuono, Christophe Len, Antonio A. Romero and Emilia Paone*



2286

Reducing the environmental impact of large-scale photovoltaic systems through technological progress and effective management

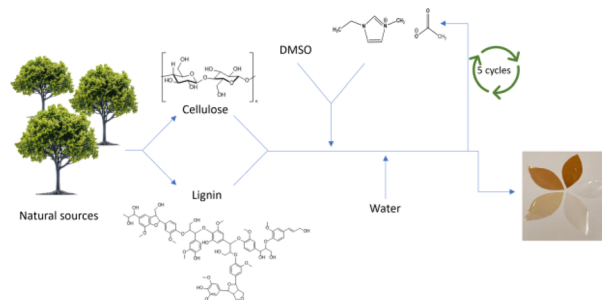
Xingyong Li, Fanran Meng,* Alan Dunbar, Lixiao Zhang,* Yan Hao, Tong He, Na Yang, Junnan Mao, Fanxin Meng and Gengyuan Liu



2301

Fabricating lignocellulosic films as potential biobased plastics

Antonella Rozaria Nefeli Pontillo, Sirui Chen, Diego Freire Ordóñez, Niall Mac Dowell, Koon-Yang Lee and Tom Welton*



2311

Strategic innovation in CuBTC/PANI nanocomposites for dye remediation: a holistic approach for enhancing adsorption, isotherms, and kinetic studies

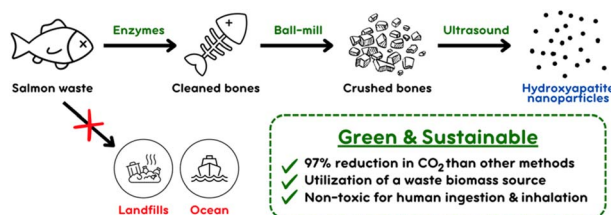
Bhavika Garg, Palkaran Sethi and Soumen Basu*



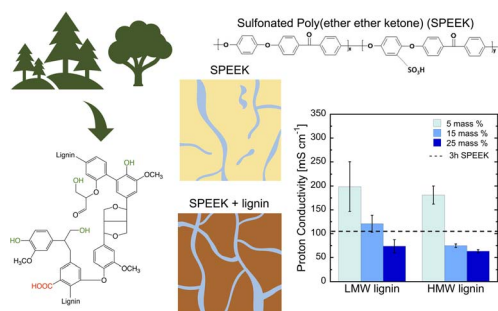
2325

Transforming waste fish bones into nanoparticles with ultrasound and aqueous organic acids

Sarah Boudreau, Sabahudin Hrapovic, Emma McIsaac, Edmond Lam, Fabrice Berrué* and Francesca M. Kerton*



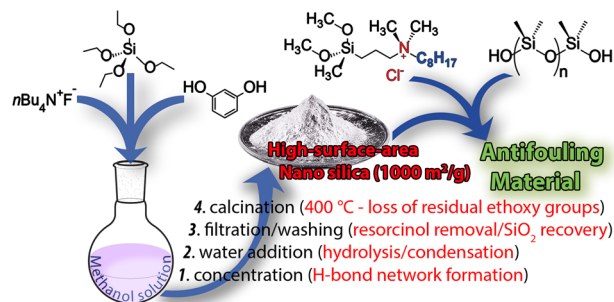
2333



Superior proton conductivity and selectivity in sulfonated ionomer biocomposites containing renewably processed and fractionated lignin

Xueting Wang, Mayura Silva, Colleen Clarke, Bronson Lynn, Mark Robertson, Aidan J. Leopold, Oreoluwa Agede, Lilin He, Stephen Creager, Mark E. Roberts, Mark C. Thies and Eric M. Davis*

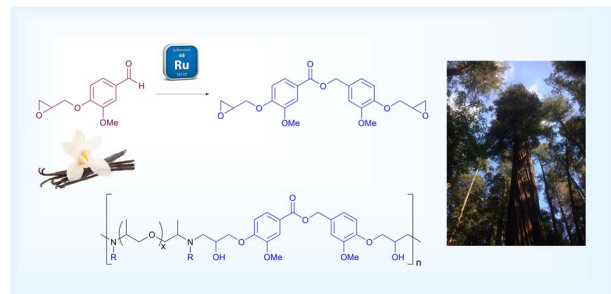
2352



A new synthetic approach for high surface area mesoporous silica and its use towards sustainable antifouling materials

Paola Marzullo, Alessandro Presentato, Francesca D'Anna, Vincenzo Campisciano, Rosa Alduina, Enrico Tornatore, Francesco Giacalone, Leonarda Francesca Liotta* and Michelangelo Gruttadauria*

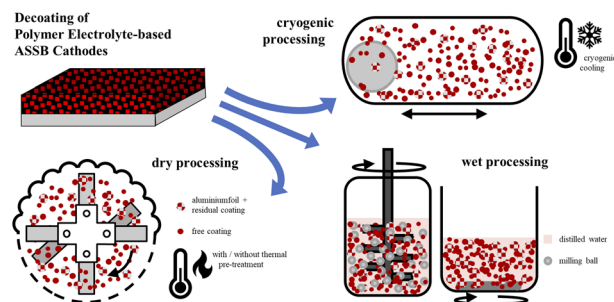
2366



Ruthenium-catalyzed dimerization of vanillin for the formation of a biobased epoxy thermoset resin

Flavia Ferrara, Iuliana Ribca, Namratha Prabhu, Josselin Mante, Maureen Gumbo, Andreas Ekebergh,* Mats Johansson* and Nina Kann*

2377



On decoating of polymer electrolyte-based solid-state battery cathodes

Anna Thielen,* Thomas Leißner, Tobias Eisenmann and Urs A. Peuker*

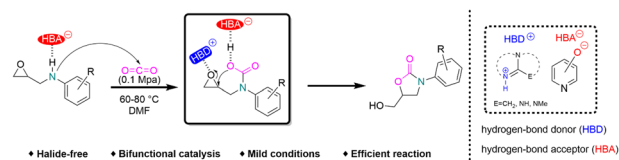


PAPERS

2390

Organocatalyzed aza-Payne-type rearrangement of epoxy amines and carbon dioxide for efficient construction of oxazolidinones

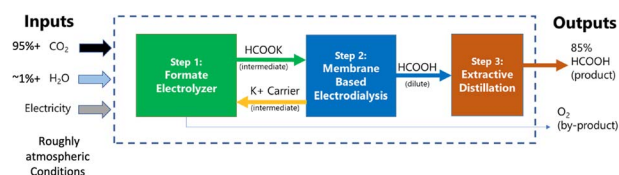
Xin Yuan, Jiahui Ma, Zhenjiang Li,^{*} Ziqi Liu, Yanqi Shi, Min Zhang, Yujia Wang, Xin Zou, Sha Li and Kai Guo



2404

Life cycle assessment of formic acid synthesis utilizing CO₂ from direct air capture

Nicholas Badger,^{*} Dylan Mattice, Matthew Atwood and Shahriar Amini^{*}



CORRECTIONS

2422

Correction: Continuous flow production of γ -valerolactone from methyl-levulinate promoted by MOF-derived Al₂O₃–ZrO₂/C catalysts

Marina Ronda-Leal, Alina M. Balu, Rafael Luque, Francesco Mauriello, Alberto Ricchebuono, Christophe Len, Antonio A. Romero and Emilia Paone^{*}

2423

Correction: Techno-economic assessment of two-stage hydropyrolysis of lignin for BTX production using iron-based catalysts

Giuseppe Bagnato, Jamie Horgan and Aimaro Sanna^{*}

