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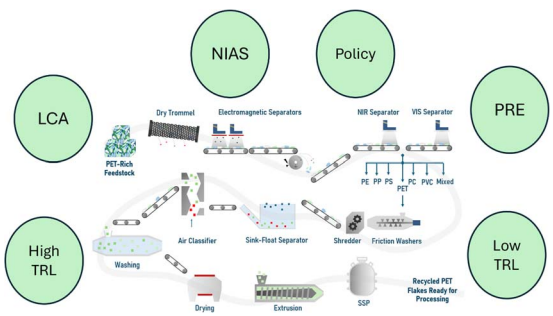
Cover
See Dagmar R. D'hooge, Mariya Edeleva *et al.*, pp. 1996–2047. Image reproduced by permission of Ghent University and Erion Bezeraj from *RSC Sustainability*, 2025, **3**, 1996.

CRITICAL REVIEWS

1996

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

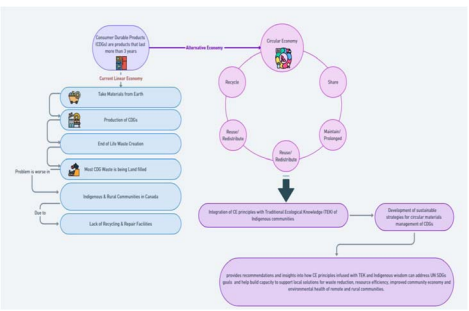
Erion Bezeraj, Simon Debrie, Francisco J. Arraez, Pablo Reyes, Paul H. M. Van Steenberge, Dagmar R. D'hooge* and Mariya Edeleva*



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 Shegufta Shetranjiwalla*



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CRITICAL REVIEWS

2064

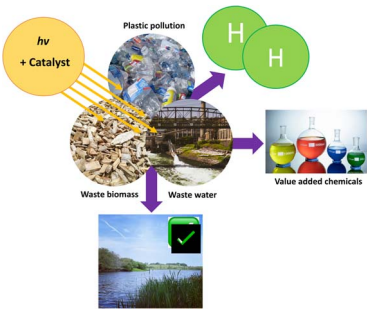
Exploring mineral–organic interactions for eco-friendly concrete alternatives: a radical concept

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

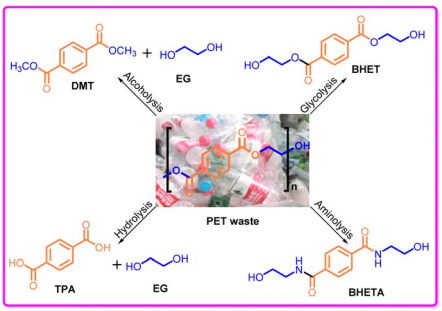


TUTORIAL REVIEWS

2111

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

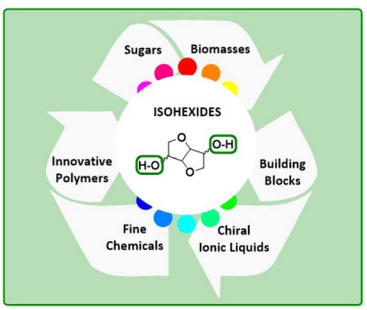
Zhiqiang Guo,* Jin Wu and Junhong Wang*



2134

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

Daria Armani*



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TUTORIAL REVIEWS

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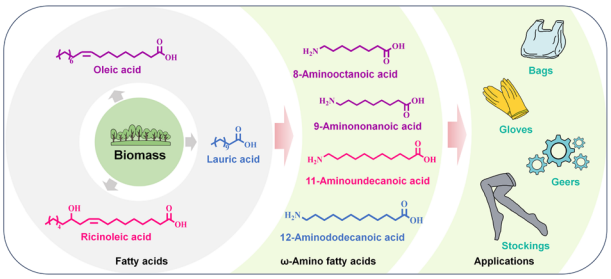

Multienzyme cascade synthesis of ω-amino fatty acids from vegetable-derived precursors for use as nylon monomers

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

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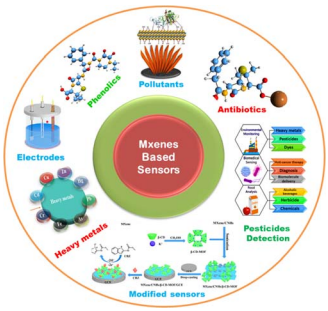

MXene-based nanocomposites: a new horizon for electrochemical monitoring of environmental pollutants

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

PERSPECTIVE

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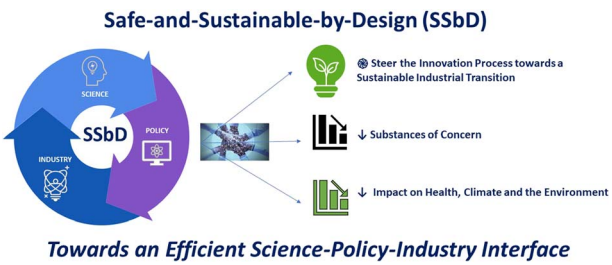

Accelerating the industrial transition with safe-and-sustainable-by-design (SSbD)

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

COMMUNICATIONS

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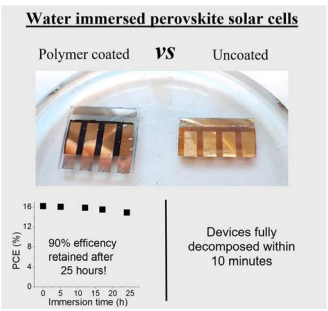

Spray-coating polystyrene on perovskite solar cells increases thermal stability and moisture tolerance

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

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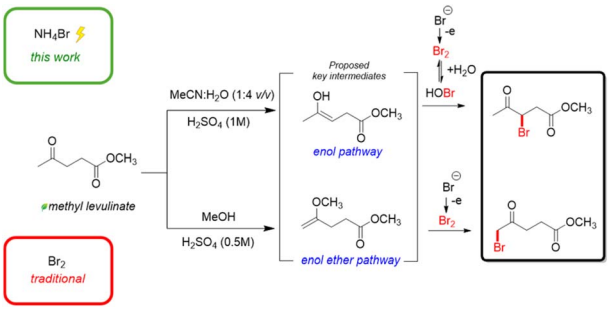
Medium-dependent regioselectivity of electrochemical bromination of methyl levulinate

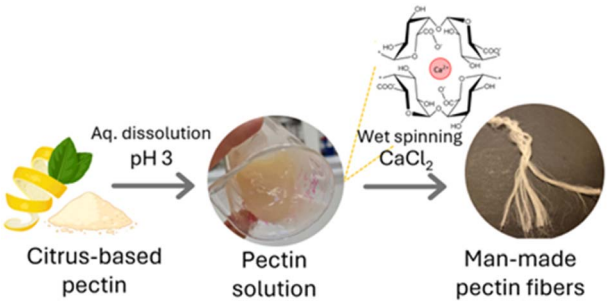
Dmitry A. Pirgach, Raghavendra Meena, Guanna Li, Fedor M. Miloserdov, Daan S. van Es, Pieter C. A. Bruijnincx and Johannes H. Bitter*



2205

Man-made textile fibres from pectin

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



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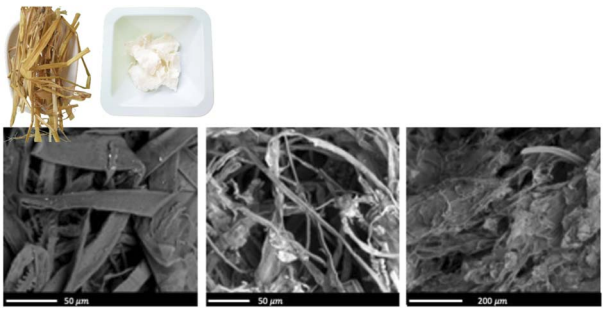
Producing dissolving pulp from agricultural waste

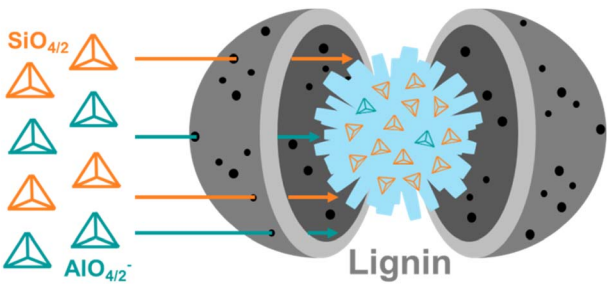
Joanna Wojtasz, Niclas Sjöstedt, Benjamin Storm, Manuel Mammen Parayil, Amanda Ulefors, Linnea Nilsson, Maria Alejandra Hernández Leal, Anne Michud, Åsa Östlund, Tomas Rydberg and Diana Bernin*



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*



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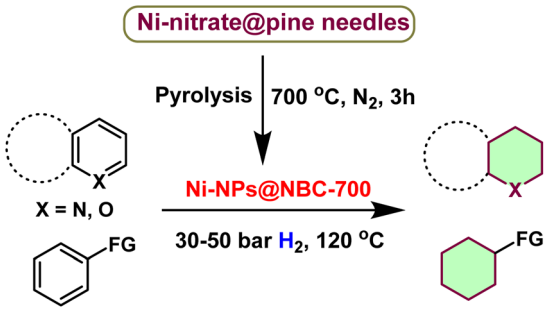

A biomass-derived nickel-based nanomaterial as a sustainable and reusable catalyst for hydrogenation of arenes and heteroarenes

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

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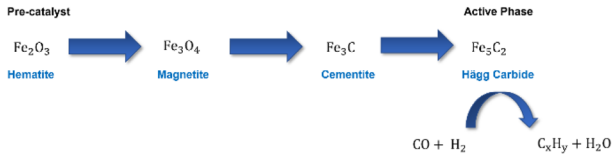

The impact of co-feeding carbon dioxide in Fischer–Tropsch-to-olefin catalysis: an inelastic neutron scattering study

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

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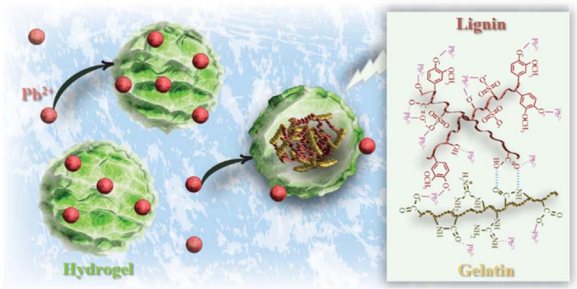

Novel green fabrication of stable hydrogel beads from industrial waste lignin for efficient Pb(II) ion removal

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

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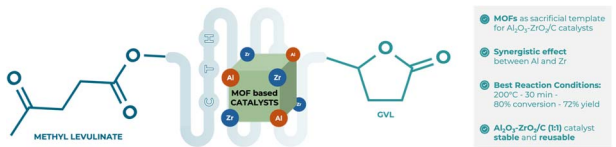

Continuous flow production of γ-valerolactone from methyl-levulinate promoted by MOF-derived Al_2O_3–ZrO_2/C catalysts

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

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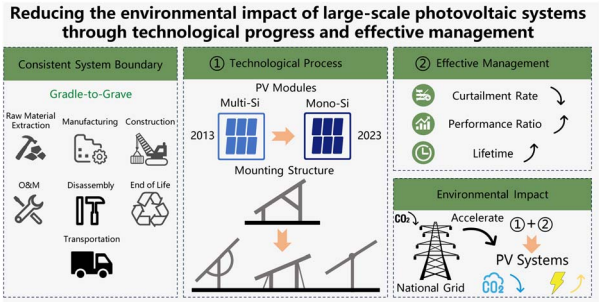
Reducing the environmental impact of large-scale photovoltaic systems through technological progress and effective management

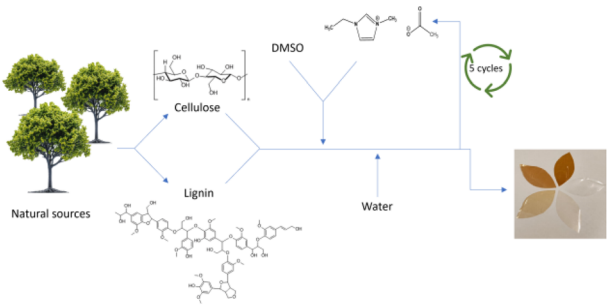
Xingyong Li, Fanran Meng,* Alan Dunbar, Lixiao Zhang,* Yan Hao, Tong He, Na Yang, Junnan Mao, Fanxin Meng and Gengyuan Liu



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

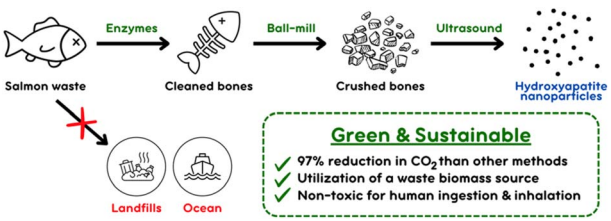
Strategic innovation in CuBTC/PANI nanocomposites for dye remediation: a holistic approach for enhancing adsorption, isotherms, and kinetic studies

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*



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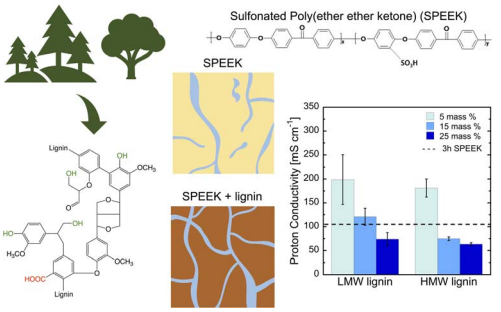
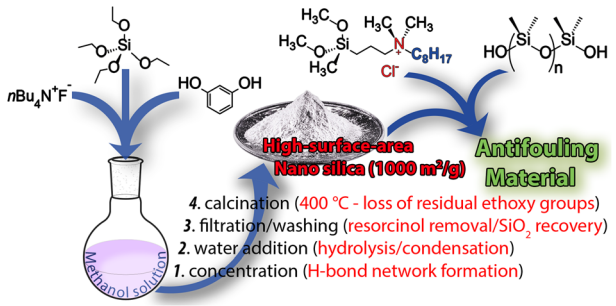


Superior proton conductivity and selectivity in sulfonated ionomer biocomposites containing renewably processed and fractionated lignin

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*

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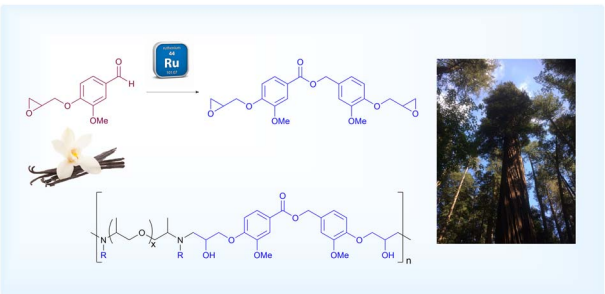

Ruthenium-catalyzed dimerization of vanillin for the formation of a biobased epoxy thermoset resin

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

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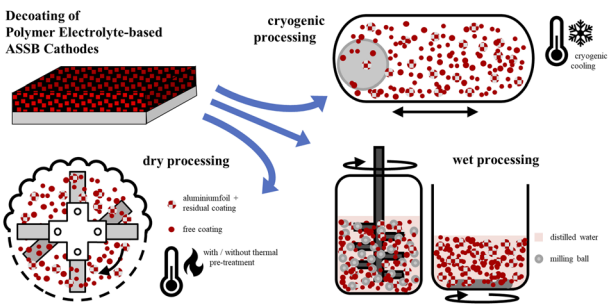

On decoating of polymer electrolyte-based solid-state battery cathodes

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

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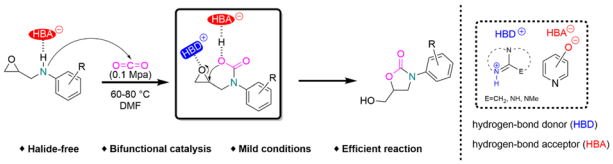
Organocatalyzed aza-Payne-type rearrangement of epoxy amines and carbon dioxide for efficient construction of oxazolidinones

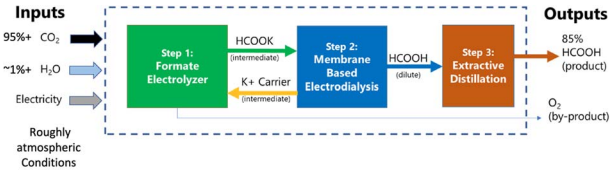
Xin Yuan, Jiahui Ma, Zhenjiang Li,* Ziqi Liu, Yanqi Shi, Min Zhang, Yujia Wang, Xin Zou, Sha Li and Kai Guo



2404

Life cycle assessment of formic acid synthesis utilizing CO_2 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 Al_2O_3–ZrO_2/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*