

RSC Sustainability

rsc.li/rscsus

The Royal Society of Chemistry is the world's leading chemistry community. Through our high impact journals and publications we connect the world with the chemical sciences and invest the profits back into the chemistry community.

IN THIS ISSUE

ISSN 2753-8125 CODEN RSSUAN 2(6) 1623–1896 (2024)



Cover

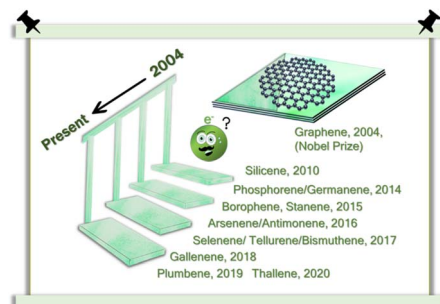
See Patrissia M. Stathatou, Patrick S. Doyle *et al.*, pp. 1761–1772. Image reproduced by permission of Patrissia M. Stathatou and Christos E Athanasiou from *RSC Sustainability*, 2024, 2, 1761.

CRITICAL REVIEWS

1631

Beyond the horizons of graphene: xenes for energy applications

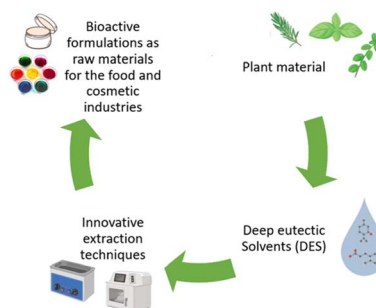
Sumon Santra, Anuraag Ghosh, Bishwajit Das, Shibam Pal, Saikat Pal* and Ashadul Adalder*



1675

Coupling deep eutectic solvents with innovative extraction techniques towards plant derived bioactive compositions

Anastasia Kyriakoudi, Ivana Radojčić Redovniković, Senka Vidović, Kristina Radošević, Thanos Andreou, Ioannis Mourtzinis* and Marina Cvjetko Bubalo*



EES Catalysis

GOLD
OPEN
ACCESS

Exceptional research on energy
and environmental catalysis

Open to everyone. Impactful for all

rsc.li/EESCatalysis

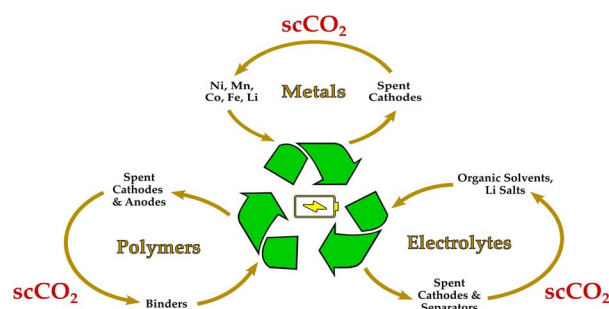
Fundamental questions
Elemental answers

TUTORIAL REVIEWS

1692

Supercritical CO₂ technology for the treatment of end-of-life lithium-ion batteries

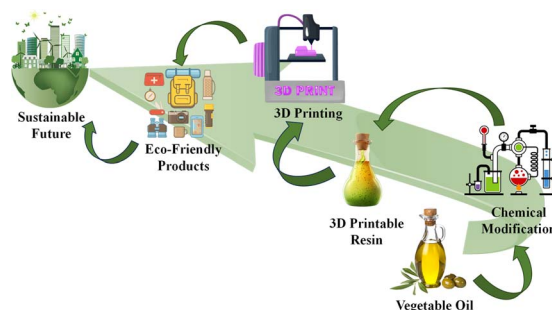
P. Cattaneo, F. D'Aprile, V. Kapelyushko, P. Mustarelli and E. Quartarone*



1708

Synthesis and application of sustainable vegetable oil-based polymers in 3D printing

Rahul Saraswat, Shagun, Abhimanew Dhir, A. S. S. Balan, Satvasheel Powar and Mrityunjay Doddamani*

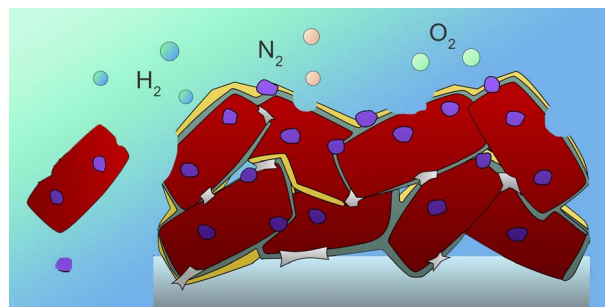


PERSPECTIVE

1738

Stability and degradation of (oxy)nitride photocatalysts for solar water splitting

Valérie Werner, Franky Bedoya Lora, Ziwei Chai, Julian Hörndl, Jakob Praxmair, Sandra Luber, Sophia Haussener and Simone Pokrant*

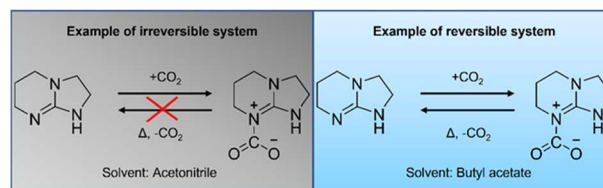


COMMUNICATION

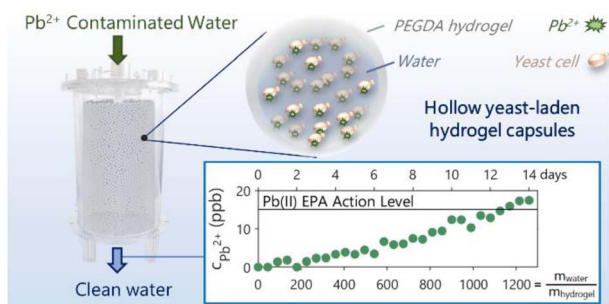
1753

Synergetic effects on the capture and release of CO₂ using guanidine and amidine superbases

Todd Elliott, Luc Charbonneau, Eva Gazagnaire, Ilkka Kilpeläinen, Bianka Kótai, Gergely Laczkó, Imre Pápai and Timo Repo*



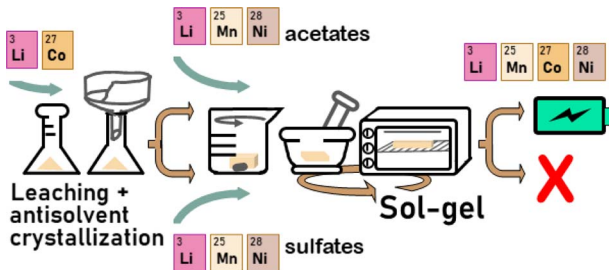
1761



Yeast-laden hydrogel capsules for scalable trace lead removal from water

Devashish Gokhale, Patrissia M. Stathatou,* Christos E. Athanasiou and Patrick S. Doyle*

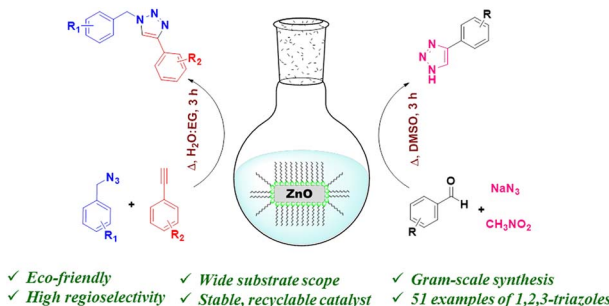
1773



Upcycling of lithium cobalt oxide to $\text{LiNi}_{1/3}\text{Mn}_{1/3}\text{Co}_{1/3}\text{O}_2$

Tristan Kipfer, Jorge D. Gamarra, Chunyan Ma, Amanda Rensmo, Laura Altenschmidt, Michael Svärd, Kerstin Forsberg and Reza Younesi*

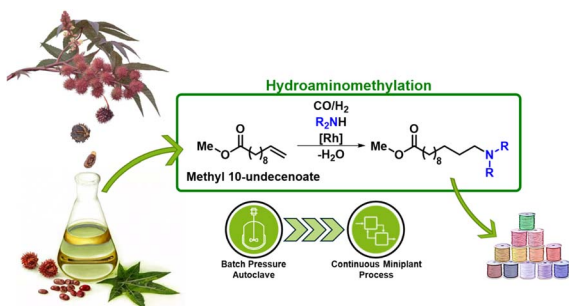
1782



Sustainable synthesis of 1,4-disubstituted and *N*-unsubstituted 1,2,3-triazoles using reusable ZnO-CTAB nanocrystals

Priyanuj Krishnann Hazarika, Priyanka Gogoi, Samprity Sarmah, Babulal Das, Kalyanjyoti Deori* and Diganta Sarma*

1797



Hydroaminomethylation of methyl 10-undecenoate with integrated catalyst recycling via a thermomorphic multiphase system for the continuous production of renewable amines

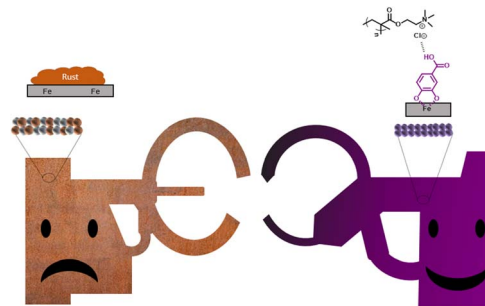
Anna Kampwerth, Tim B. Riemer, Jonathan Pöttker-Menke, Nadine Oppenberg, Arno M. Windisch, Dieter Vogt and Thomas Seidensticker*



1809

Protection coatings for corrosion control of mild steel using phenolic polymeric deep eutectic solvents

Jon Lopez de Lacalle, Daniela Minudri,* Matias L. Picchio, Antonela Gallastegui, Daniele Mantione, Maria Forsyth and David Mecerreyes*



1819

Upcycling mixed-material waste with elemental sulfur: applications to plant oil, unseparated biomass, and raw post-consumer food waste

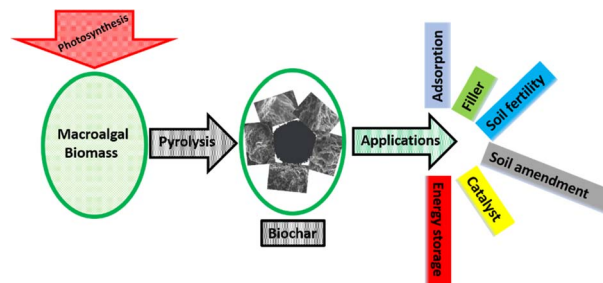
Bárbara G. S. Guinati, Perla Y. Saucedo Oloño, Nawoda L. Kapuge Dona, Katelyn M. Derr, Shalini K. Wijeyatunga, Andrew G. Tennyson* and Rhett C. Smith*



1828

Macroalgae-based biochar: preparation and characterization of physicochemical properties for potential applications

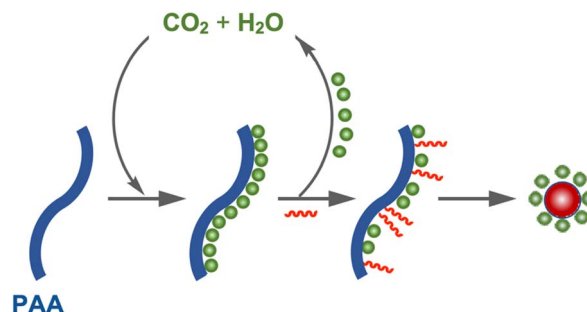
Anjon Kumar Mondal, Cora Hinkley, Lakshmi Krishnan, Nandhini Ravi, Farjana Akter, Peter Ralph and Unnikrishnan Kuzhiumparambil*



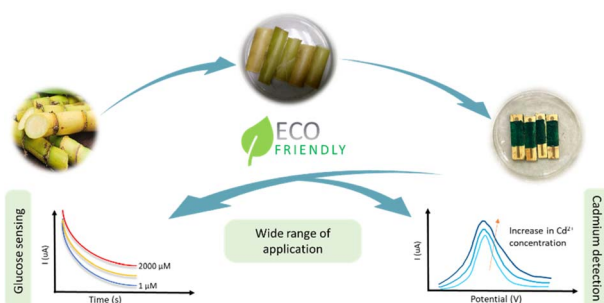
1837

Utilization of CO₂-captured poly(allylamine) as a polymer surfactant for nanoarchitecture production in a closed CO₂ cycle

Eri Yoshida



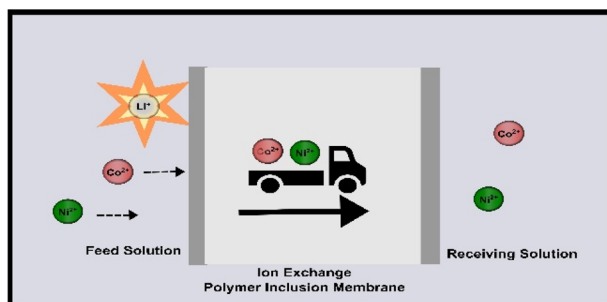
1849



A natural fibre based sustainable and high-performance platform for electrochemical sensors

Nachiket Aashish Gokhale, Chiranjeevi Srinivasa Rao Vusa and Siddhartha Panda*

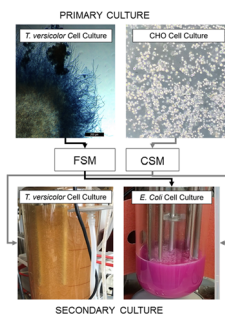
1859



Complexation-driven ion-exchange polymer inclusion membranes for separation of cobalt and nickel ions from lithium-ion via proton pumping

Babafemi Adigun, Bishnu P. Thapaliya,* Huimin Luo* and Sheng Dai*

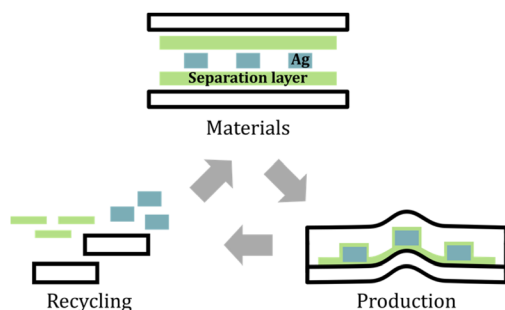
1868



Feeding secondary fermentations with mammalian and fungal culture waste streams increases productivity and resource efficiency

Ciara D Lynch, Federico Cerrone,* Kevin E. O'Connor and David J. O'Connell*

1883



Recyclable in-mold and printed electronics with polymer separation layers

Yannic Brasse, Mariano Laguna Moreno, Simon Blum, Tim Horter, Florian Janek, Kerstin Gläser, Carl Emmerechts, Jean-Michel Clanet, Michèle Verhaert, Benoit Grymonprez and Tobias Kraus*

