

# RSC Sustainability

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## IN THIS ISSUE

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### Cover

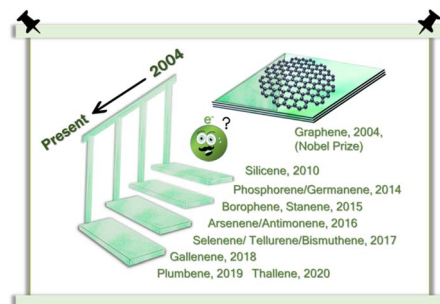
See Patrissia M. Stathatou, Patrick S. Doyle *et al.*, pp. 1761–1772. Image reproduced by permission of Patrissia M. Stathatou and Christos E Athanasiou from *RSC. Sustainability.*, 2024, 2, 1761.

## CRITICAL REVIEWS

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### Beyond the horizons of graphene: xenes for energy applications

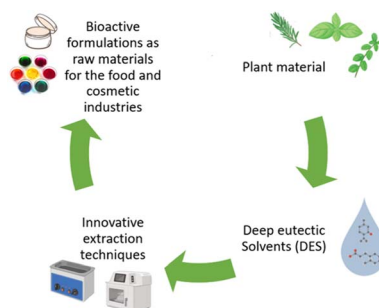
Sumon Santra, Anuraag Ghosh, Bishwajit Das, Shibam Pal, Saikat Pal\* and Ashadul Adalder\*



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



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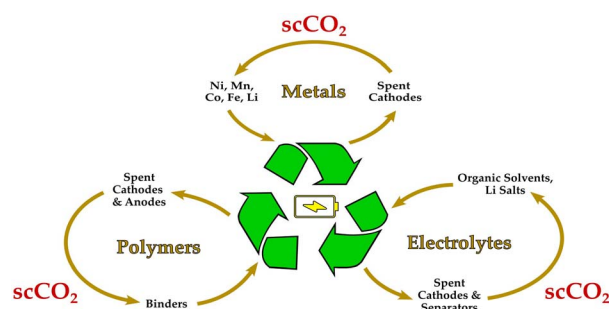
Fundamental questions  
Elemental answers

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**Supercritical CO<sub>2</sub> technology for the treatment of end-of-life lithium-ion batteries**

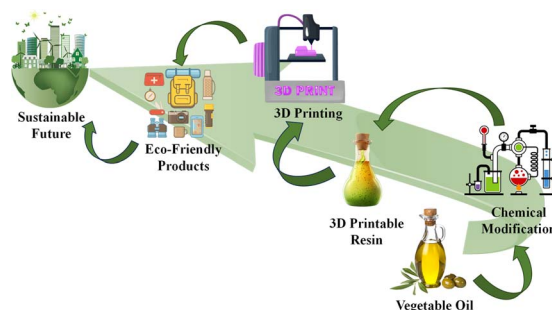
P. Cattaneo, F. D'Aprile, V. Kapelyushko, P. Mustarelli and E. Quartarone\*



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**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\*

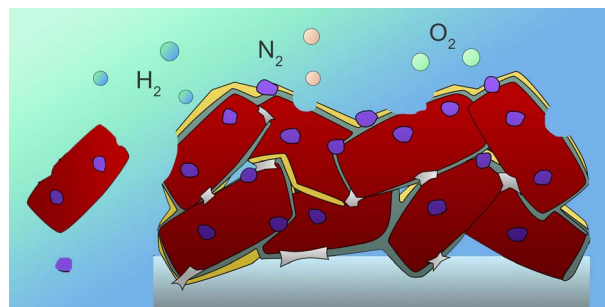


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**Stability and degradation of (oxy)nitride photocatalysts for solar water splitting**

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

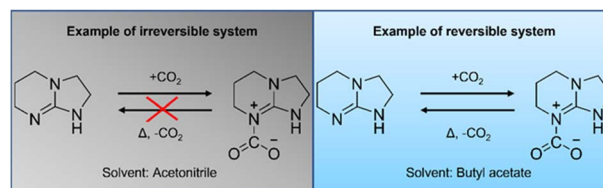


## COMMUNICATION

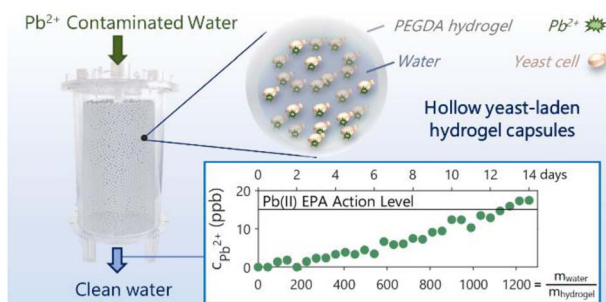
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**Synergetic effects on the capture and release of CO<sub>2</sub> using guanidine and amidine superbases**

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



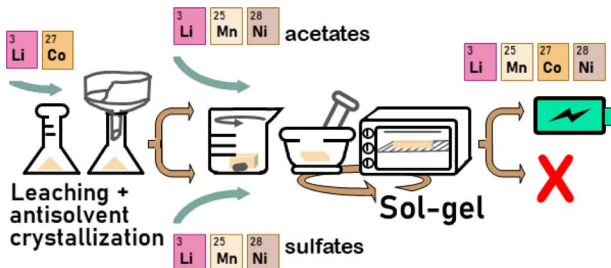
1761



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

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

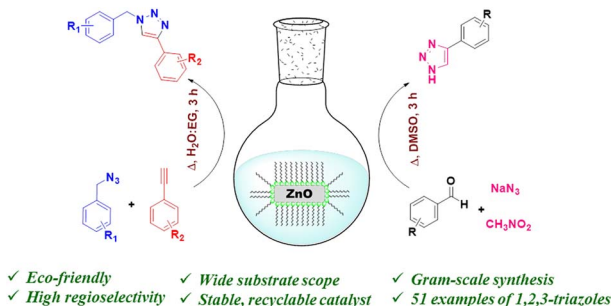
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### Upcycling of lithium cobalt oxide to LiNi<sub>1/3</sub>Mn<sub>1/3</sub>Co<sub>1/3</sub>O<sub>2</sub>

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

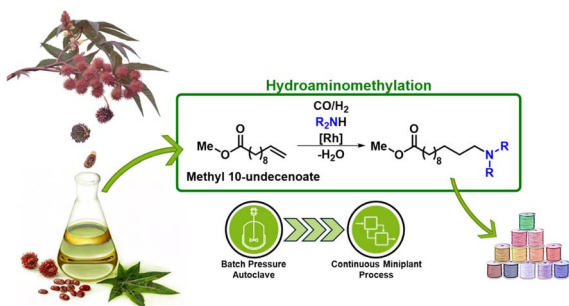
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### Sustainable synthesis of 1,4-disubstituted and N-unsubstituted 1,2,3-triazoles using reusable ZnO-CTAB nanocrystals

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

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### 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\*

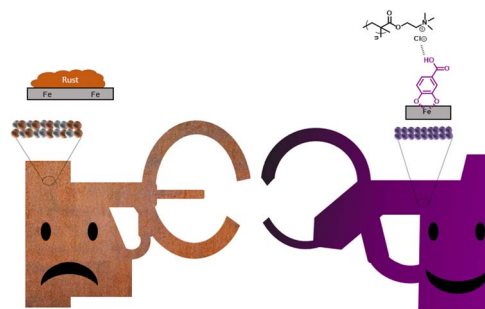




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### Protection coatings for corrosion control of mild steel using phenolic polymeric deep eutectic solvents

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



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

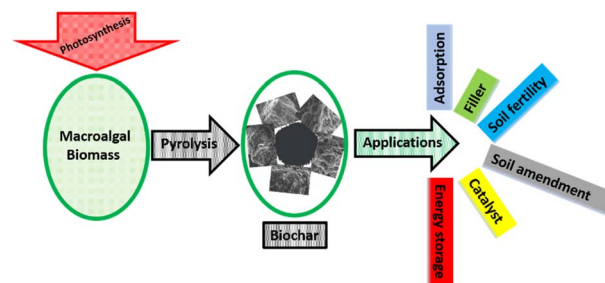
Bárbara G. S. Guinati, Perla Y. Saucedo Oloño, Nawoda L. Kapuge Dona, Katelyn M. Derr, Shalini K. Wijeyatunga, Andrew G. Tennyson\* and Rhett C. Smith\*



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

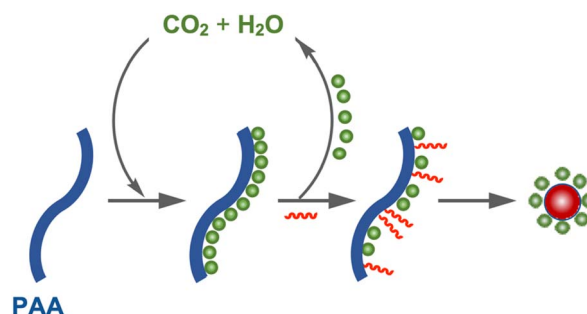
Anjon Kumar Mondal, Cora Hinkley, Lakshmi Krishnan, Nandhini Ravi, Farjana Akter, Peter Ralph and Unnikrishnan Kuzhiumparambil\*



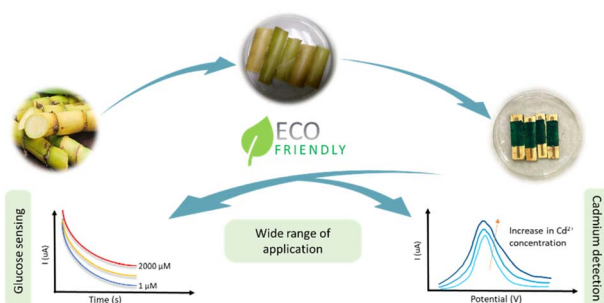
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### Utilization of CO<sub>2</sub>-captured poly(allylamine) as a polymer surfactant for nanoarchitecture production in a closed CO<sub>2</sub> cycle

Eri Yoshida



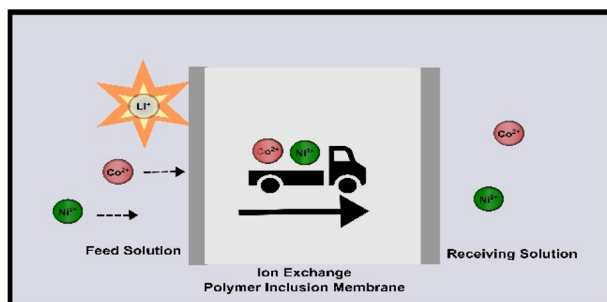
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### A natural fibre based sustainable and high-performance platform for electrochemical sensors

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

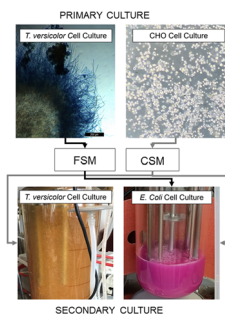
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### Complexation-driven ion-exchange polymer inclusion membranes for separation of cobalt and nickel ions from lithium-ion via proton pumping

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

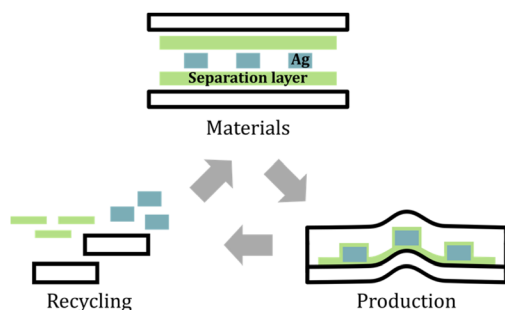
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### Feeding secondary fermentations with mammalian and fungal culture waste streams increases productivity and resource efficiency

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

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### 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\*

