

# RSC Sustainability

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## IN THIS ISSUE

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### Cover

See Alexander M. Kirillov *et al.*, pp. 3396–3406. Image reproduced by permission of Alexander M. Kirillov and Chris Franco from *RSC Sustainability*, 2025, 3, 3396.



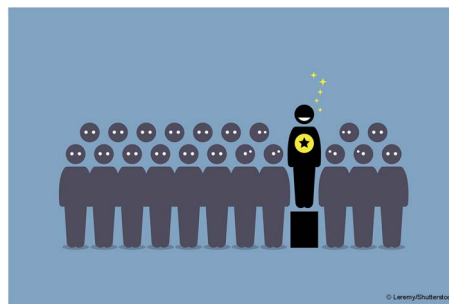
### Inside cover

See Rodrigo O. M. A. de Souza *et al.*, pp. 3407–3417. Image reproduced by permission of Rodrigo O. M. A. de Souza from *RSC Sustainability*, 2025, 3, 3407.

## EDITORIAL

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### Outstanding Reviewers for *RSC Sustainability* in 2024

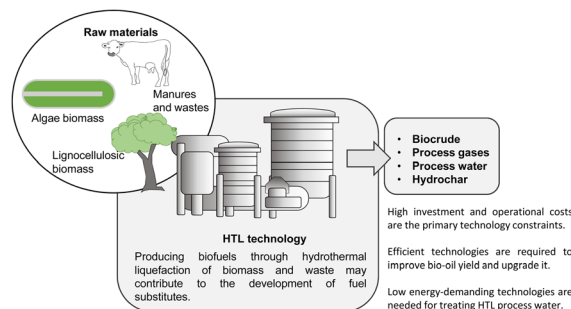


## CRITICAL REVIEWS

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### Reducing fossil fuel demand by using biofuels as an alternative hydrothermal liquefaction is a promising process for transforming biomass into drop-in fuels

Ivan Mazariegos,\* Ebtihal Abdelfath-Aldayyat, Silvia González-Rojo and Xiomar Gómez



# Environmental Science: Atmospheres

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Fundamental questions  
Elemental answers





## Peeyush Phogat,\* Subhadeepa Dey and Meher Wan

[illegible]

## 3307

## Nilanjan Dey, Shakshi Bhardwaj and Pradip K. Maji\*

Susmi Anna Thomas, Jayesh Cherusseri\* and Deepthi N. Rajendran

**Rubber Nanocomposites**

**Synthesis Methods**

**Supercapacitors**

**Challenges & Future Perspectives**

**Nanocomposites**

- Stretchability
- Cyclic Voltammetry
- Charge/Discharge
- Cyclic Stability
- Specific Capacitance
- Energy Density
- Power Density

**Synthesis Methods**

- Solution Mixing
- Melt Mixing
- Latex Mixing

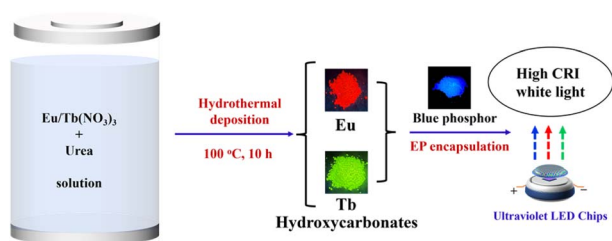
## 3384

Andrea-Lorena Garduño-Jiménez,\* Rachel L. Gomes,  
Yolanda López-Maldonado and Laura J. Carter



## COMMUNICATION

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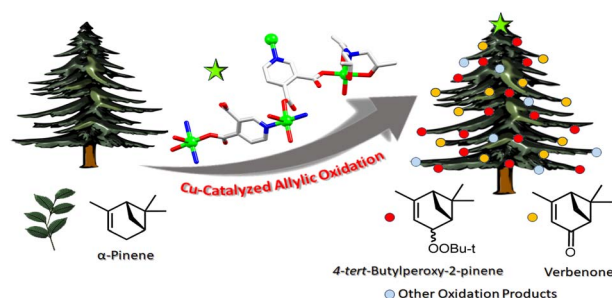


### Facile hydrothermal synthesis of rare earth hydroxycarbonate phosphors for high-performance warm white LEDs

Haoxuan Zeng, Qiao Liang, Lu He, Ziyuan Li, Taihui Chen and Xiaoli Wu\*

## PAPERS

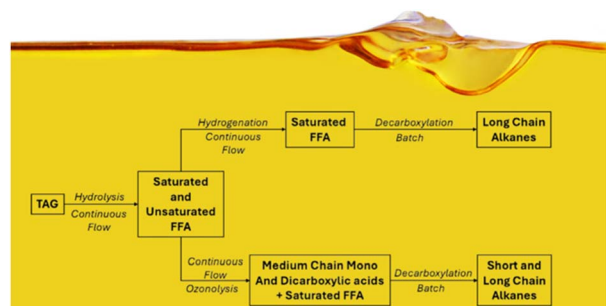
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### From $\alpha$ -pinene feedstock to value-added products: scalable and recyclable copper(II) catalysts for allylic oxidation

Gilvan A. Correia, Chris H. J. Franco, Marina V. Kirillova, Alexandre Pradal, Giovanni Poli, Fabrice Gallou and Alexander M. Kirillov\*

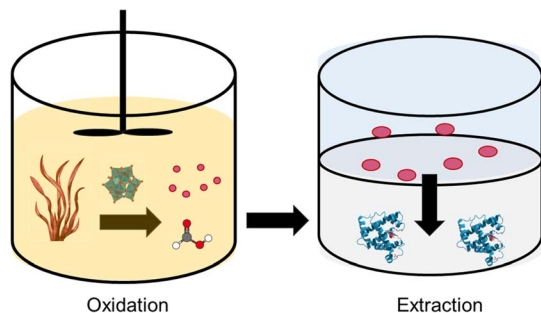
3407



### Chemo-enzymatic cascades for the sustainable transformation of canola oil into hydrocarbon fuels

Lucas B. Barbosa, Caio M. Pacheco, Isabela G. da Silva, Mauro R. B. P. Gomez, Alexandre S. França, Gabriela C. Breda, Matheus C. Silva, Patrícia S. de Alencar, Fernanda A. Lima, Raquel A. C. Leão, Rodrigo V. Almeida and Rodrigo O. M. A. de Souza\*

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### ProFA – valorization of macroalgae biomass as a source of proteins and formic acid

Stefanie Wesinger, Keerthana Erattemparambil, Andreas Liese, Maximilian J. Poller, Ana Malvis Romero and Jakob Albert\*

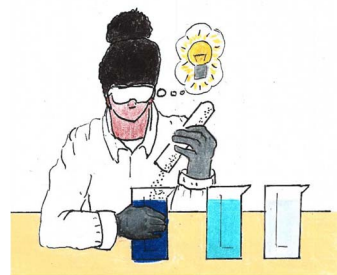


## PAPERS

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### Green beginnings: creating an affordable advanced enquiry-based experimental nanochemistry learning module with catalytically active 'green' iron oxide nanoparticles (IONPs)

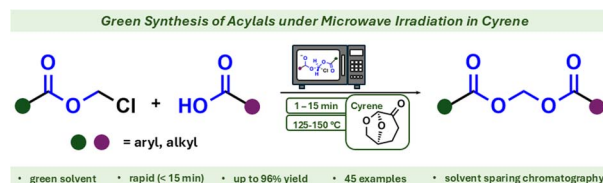
Timothy Schwantes, Dylan Medina, Brittney Morgan and Abhinandan Banerjee\*



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### Biobased dihydrolevoglucosenone (Cyrene) enables rapid and efficient synthesis of acylals under microwave irradiation

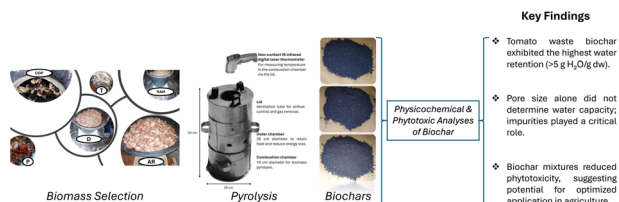
Tobias Keydel and Andreas Link\*



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### Comprehensive assessment of phytotoxic effects, morphology, chemical compositions, and water retention capacities of biochars

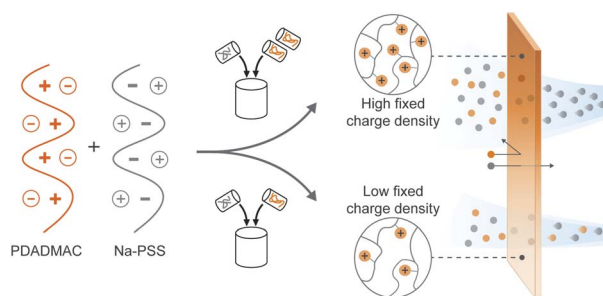
Hassan El Moussaoui,\* Zaina Idardare and Laila Bouqbis\*



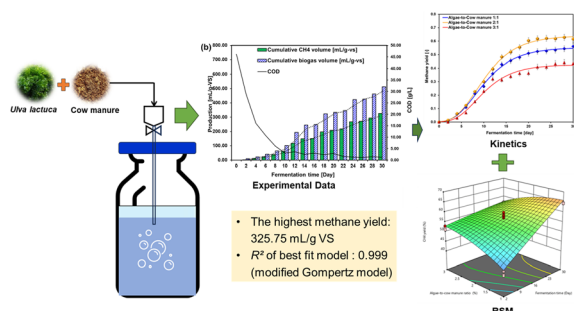
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### Improving the fixed charge density of sustainably produced saloplastic anion exchange membranes

Hestie A. Brink, Ricardo P. Martinho, Wiebe M. de Vos and Saskia Lindhoud\*



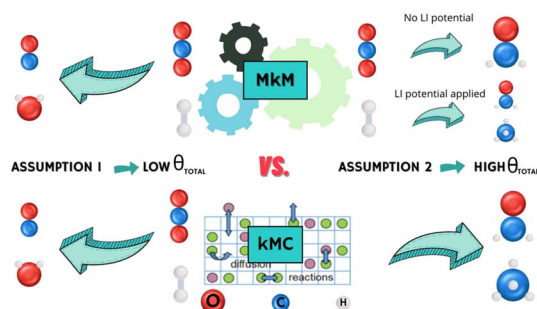
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### Sustainable biogas production through anaerobic co-digestion of *Ulva lactuca* (Chlorophyta) and cow manure: a kinetic and process optimization study

Obie Farobie,\* Veni Anggita Sari, Edy Hartulistiwa, Widya Fatriasari, Asep Bayu Dani Nandiyanto, Apip Amrullah, Lusi Ernawati and Misbahuddin

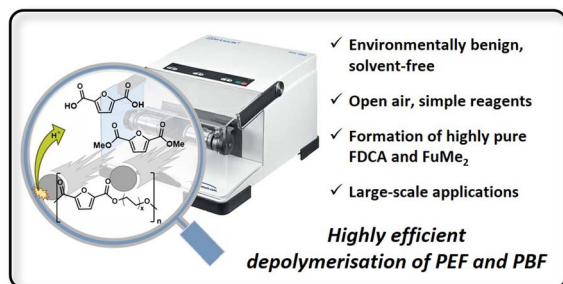
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### CO<sub>2</sub> hydrogenation on Ni(111): microkinetic modelling vs. kinetic Monte Carlo simulations – choosing the right approach for unravelling reaction kinetics

Alejandro Gracia, Pablo Lozano-Reis, Fermín Huarte-Larrañaga, Pablo Gamallo\* and Ramón Sayós

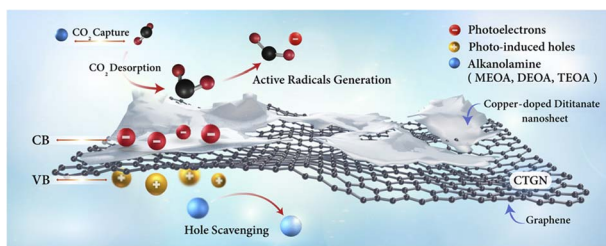
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### Highly efficient mechanochemical depolymerisation of bio-based polyethylene furanoate and polybutylene furanoate

Divya Jain, Florian Cramer, Pauline Shamraienko, Hans-Joachim Drexler, Brigitte Voit\* and Torsten Beweries\*

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### Effects of alkanolamines on photocatalytic reduction of carbon dioxide to liquid fuels using a copper-doped dititanate/graphene photocatalyst

Wannisa Neamsung, Nutkamol Kitjanukit, Apisit Karawek, Napatr Chongkol, Napat Lertthanaphol, Poomipat Chotngamkhum, Kongphoom Khumsupa, Poomiwat Phadungbut, Woranart Jonglertjunya, Pattaraporn Kim-Lohsoontorn and Sira Srinives\*

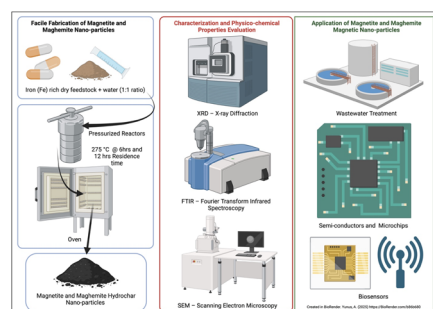


## PAPERS

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# Facile fabrication of magnetite (Fe<sub>3</sub>O<sub>4</sub>) nanoparticles by hydrothermal carbonization of waste iron supplements

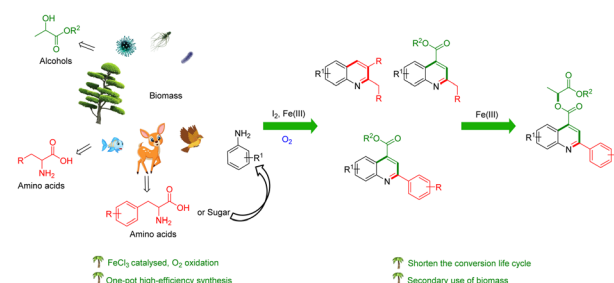
Ahmed I. Yunus, Samuel A. Darko,\* Yongsheng Chen and Joe F. Bozeman III\*



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# One-pot iron chloride-catalyzed sustainable syntheses of quinolines from amino acids, alkyl lactate and arylamine

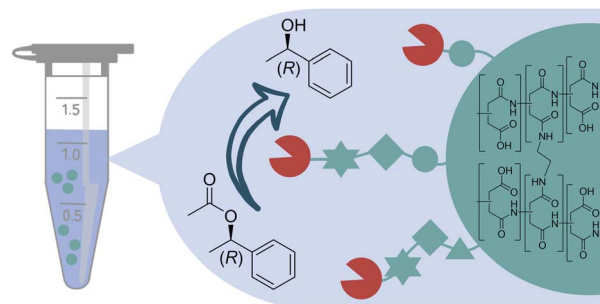
Meitian Fu, Lu Yin, Junjie Li, Sihan Zhao, Fujun Wang, Minglong Yuan\* and Chao Huang\*



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# Functionalized poly(aspartic acid) hydrogel particles as carriers for covalent enzyme immobilization

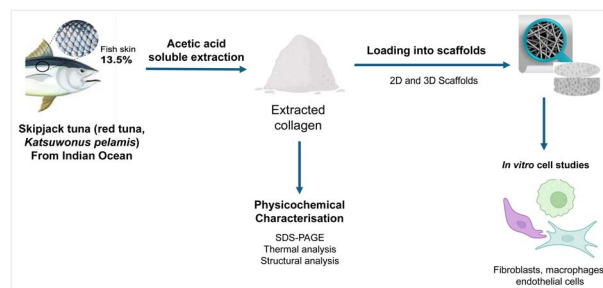
Johanna Meyer, Lars-Erik Meyer, Hadir Borg, Dirk Dorfs and Selin Kara\*



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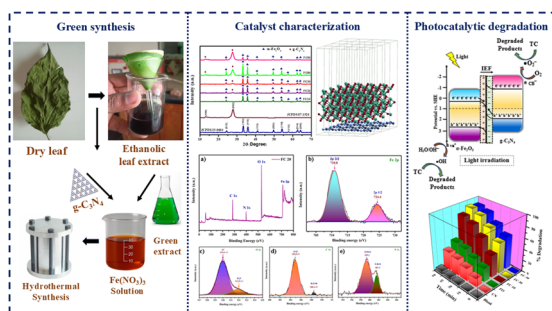
# Collagen from skipjack tuna skin waste enhances cellular proliferative activity, vascularization potential and anti-inflammatory properties of nanofibrous and hydrogel scaffolds

Tejaswini Petkar, Marie Andrea Laetitia Huët, Devesh Bekah, Itisha Chummun Phul, Nowsheen Goonoo and Archana Bhaw-Luximon\*





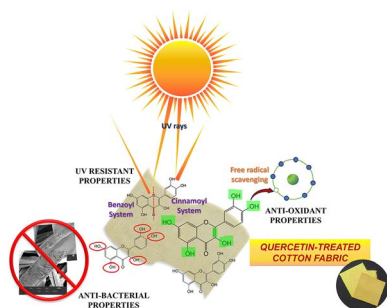
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***Nyctanthes arbor-tristis* L. mediated sustainable synthesis of  $\alpha$ -Fe<sub>2</sub>O<sub>3</sub>/g-C<sub>3</sub>N<sub>4</sub> S-scheme heterojunctions for enhanced photocatalytic degradation of tetracycline hydrochloride: a mechanistic insight and DFT study**

Mano Ranjan Barik, Jagadish Kumar and Sushanta Kumar Badamali\*

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**A facile and sustainable method for integrating bio-based quercetin into cotton structures to impart multifunctionality: a thorough study on the effects of treatment conditions**

Mandira Mondal and S. Wazed Ali\*

