

# Sustainable Food Technology

rsc.li/susfoodtech

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 2753-8095 CODEN SFTUAG 3(2) 345–640 (2025)



### Cover

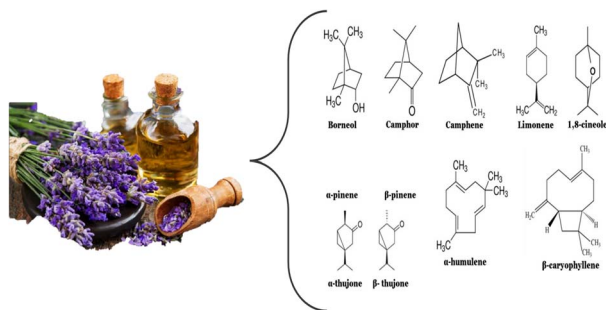
See Jayeeta Bhaumik, Maninder Meenu, and Monika Garg *et al.* pp. 414–424. Image reproduced by permission of Jayeeta Bhaumik and all authors of the article from Sustainable. *Food Technol.*, 2025, 3, 414.

## REVIEWS

354

### Lavender essential oils as natural food protectants: myth or a viable substitute?

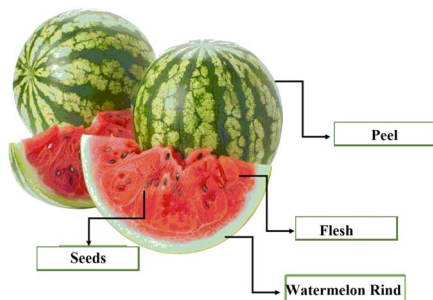
Dheeraj Kumar, Mahesh K. Samota, Somnath Roy, Ana Sanches Silva and Abhay K. Pandey\*



375

### Nutritional composition and bioactive potential of watermelon seeds: a pathway to sustainable food and health innovation

Jasia Nissar, Urba Shafiq Sidiqi, Aamir Hussain Dar\* and Ubaida Akbar



GOLD  
OPEN  
ACCESS

# RSC Applied Polymers

**The application of polymers,  
both natural and synthetic**

**Interdisciplinary and open access**

[rsc.li/RSCApplPolym](https://rsc.li/RSCApplPolym)

**Fundamental questions  
Elemental answers**

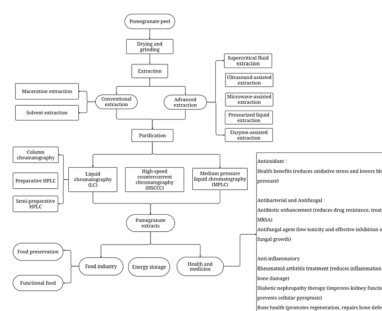


## REVIEWS

396

## A review on the extraction of polyphenols from pomegranate peel for punicalagin purification: techniques, applications, and future prospects

Zhirong Huang, Su Chern Foo and Wee Sim Choo\*

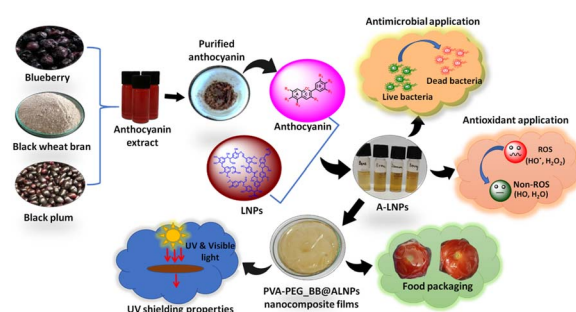


## PAPERS

414

## Development of bionanocomposite packaging films based on lignin nanoencapsulated anthocyanins extracted from agro-waste for enhancing the post-harvest shelf life of tomatoes

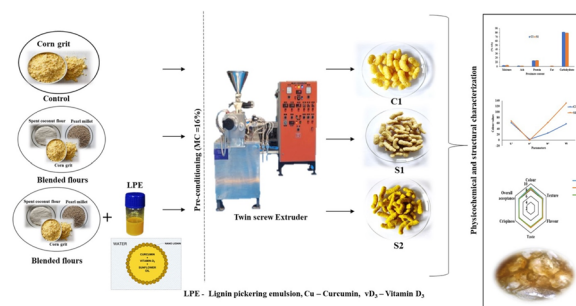
Maninder Meenu,\* Anil Kumar Pujari, Seema Kirar, Mansi, Aniket Thakur, Monika Garg and Jayeeta Bhaumik



425

## Nutrient-rich puffed snacks developed using blended flours and lignin Pickering emulsions containing curcumin and vitamin D<sub>3</sub>

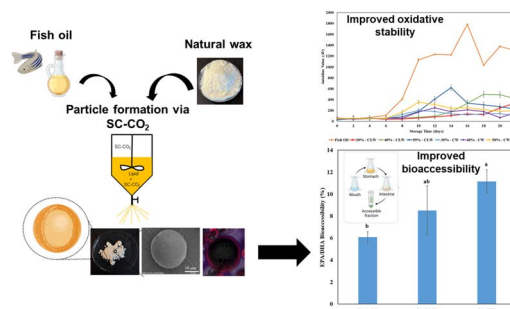
Billu Abraham, Heeba Shakeela, Pavithra Pathrakadavil Ajayan, Charles Brennan, Nitin Mantri, Benu Adhikari\* and Nisha P.\*



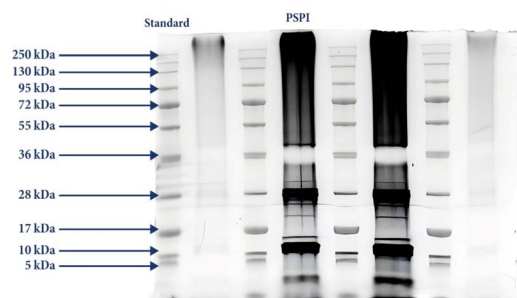
436

## Encapsulation of fish oil in natural wax-based solid lipid particles using supercritical carbon dioxide: a green strategy to develop stable powder fish oil

Purlen Sezer Okur, Deniz Ciftci and Ozan N. Ciftci\*



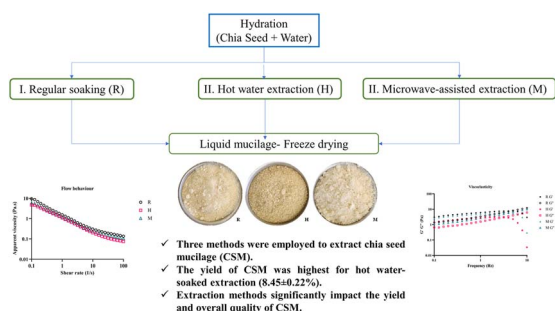
445



### Physicochemical and functional characterization of pumpkin seed protein isolate

Mehvish Habib, Sakshi Singh, Narashans Alok Sagar, Sameer Ahmad, Iqra Qureshi, Shumaila Jan, Kulsum Jan and Khalid Bashir\*

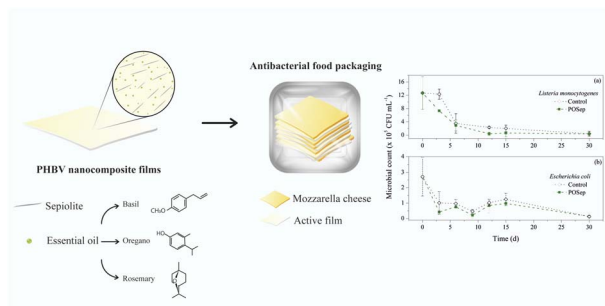
456



### Comparing conventional and novel extraction methods for chia seed mucilage as a sustainable vegan thickening agent

Qiu Yi Tan, Divyang Solanki, Regis Badin and Sangeeta Prakash\*

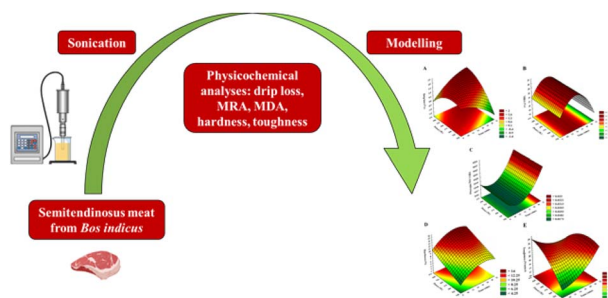
470



### Green active food packaging films based on nanocomposites of PHBV/sepiolite/essential oils

Renata Cerruti da Costa, Pâmela Rosa Oliveira, Leandro Guarezi Nandi, Daiane Mara Bobermin, Marília Miotto, Ismael Casagrande Bellettini, Janaina da Silva Crespo, Tales da Silva Daitx, Cristiano da Silva Teixeira and Larissa Nardini Carli\*

482



### High-intensity ultrasound processing to improve the quality of semitendinosus steak from *Bos indicus* cattle

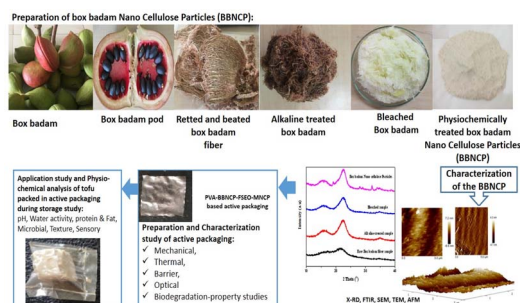
Yago A. A. Bernardo,\* Denes K. A. Do Rosario,\* Lucas P. Marques, Bruno D. Da Silva, Maria Lúcia G. Monteiro and Carlos A. Conte Junior\*



492

## PVA–nano cellulose active packaging films with clay nano particles and fennel seed essential oil for enhanced thermal, barrier, antimicrobial, antioxidant and biodegradation properties to improve the shelf life of tofu

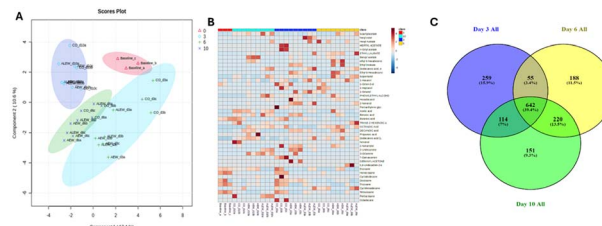
Ramesh Shruthy and Radhakrishnan Preetha\*



507

## Effects of acidic and alkaline electrolyzed water treatments on the volatilomics and proteomics changes in fresh-cut apple during storage

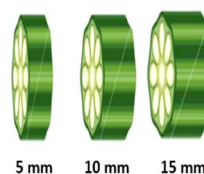
Zinash A. Belay,\* Mbukeni Nkomo, Gadija Mohamed, Makgafele L. Ntsoane and Oluwafemi James Caleb\*



520

## Heat and moisture transport in okra cylinders with shrinkage effects under solar drying: a multiphysics-based simulation approach

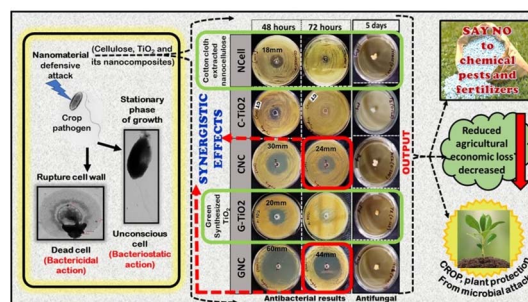
Nnaemeka Nwakuba,\* Nnaemeka Ezeanya, Ibiba Taiwo Horsfall, Victor Okafor, Chibuike Ononogbo, Macmanus Ndukwu, Marlin Simo-Tagne and Sabbas Asoegwu



537

## Synergistic antimicrobial effects of waste cotton cloth extracted cellulose with phytomicrofabricated TiO<sub>2</sub> for potential application in agriculture

Chhavi Sharma, Archana Rana, Amit Kumar Kesharwani, Dinesh Singh,\* Ritu Srivastava and Shailesh Narain Sharma\*





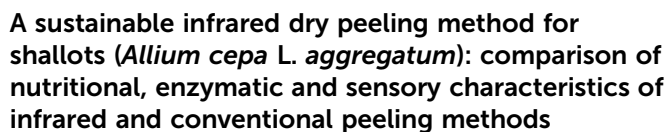
559



570



582



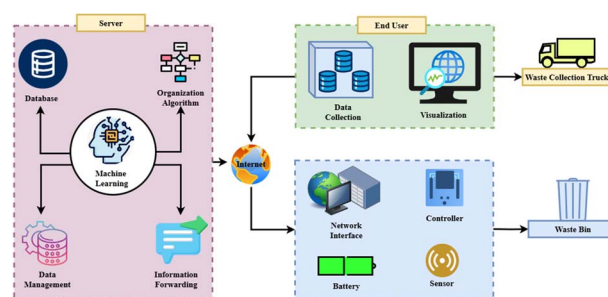
This journal is © The Royal Society of Chemistry 2025

## PAPERS

599

## Investigation of a deep learning-based waste recovery framework for sustainability and a clean environment using IoT

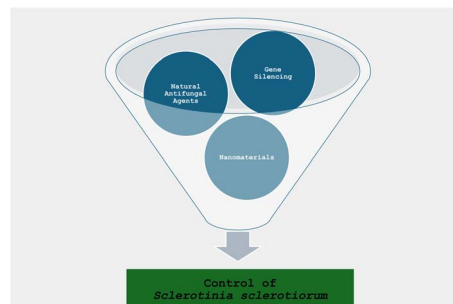
M. Arun\*



612

## Recent strategies for controlling the white mould fungal pathogen (*Sclerotinia sclerotiorum*) using gene silencing, botanical fungicides and nanomaterials

Timothy O. Ajiboye,\* H. G. Visser, E. Erasmus and M. Schutte-Smith



## EXPRESSION OF CONCERN

637

## Expression of concern: Protein complexations and amyloid fibrilization as novel approaches to improve techno-functionality of plant-based proteins

Zakir Showkat Khan,\* Shubham Mandliya, Shweta Suri, Seerat Bhinder, Pintu Choudhary, Shreya Mandal, Narender Kumar Chandla, Koyel Kar, Ömer Said Toker, Slim Smaoui, Mohamad Sayeed Bhat, Hari Niwas Mishra, Navdeep Singh Sodhi, Bhavnita Dhillon and Thameed Aijaz

