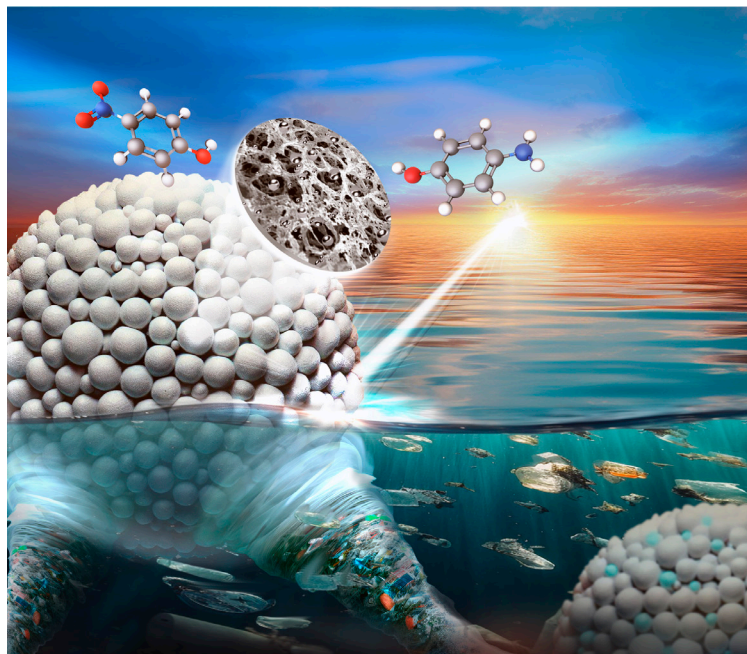


Cover Picture



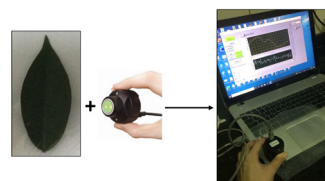
Plastic debris is an environmental and health problem that is catching growing attention from scientists and society in general. Here is proposed a two in one approach to reuse this white pollution, mainly due to commercial polystyrene, turning it into a new porous material that is able to reduce organic compounds like 4-nitrophenol thanks to added nanotechnology, silver nanocatalyst. It is demonstrated that those final foams are able to preserve thermal and plasmonic catalytic features of the silver nanoparticles, opening opportunities for a new approach of reuse of plastic waste to create new multifunctional porous materials. Details are presented in the Article **Silver Nanocatalyst Supported on Waste-Based Polystyrene Foam for Thermal and Plasmonic Reduction of *p*-Nitrophenol** by *Welida T. A. da Silva, Geovânia C. de Assis, Roberta A. de Jesus, Rayssa J. B. Motta, Luiz Fernando R. Ferreira, Yolice Patricia M. Ruiz, André Galembeck, Ricardo Schneider and Rodrigo J. de Oliveira* on page 1317.

Contents

Articles

- 1215 **Assessment of Ora-Pro-Nobis (*Pereskia aculeata* Miller) Leaves Shelf-Life in Different Conditions by Using NIR Spectroscopy and Augmented Matrices with Chemometrics**
Fernanda L. Furlan, Makoto Matsushita, Aline Coqueiro, Paulo Henrique Março and Patrícia Valderrama

SI online



?

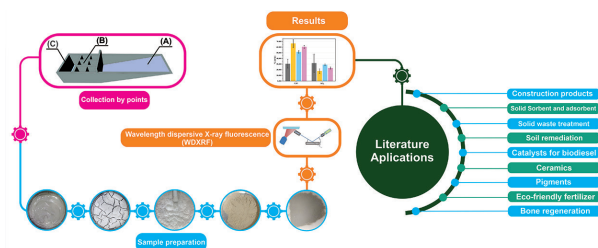
Questions to be answer:
How about shelf-life?
Which package increase the shelf-life?

Graphical Abstract

Ora-pro-nobis leaves: a strategy for the shelf-life evaluation.

1224 Statistical Analysis of the Chemical Composition of Concrete Slurry Waste: A Case Study of Sedimentation Tanks from Concrete Batching Plants in Manaus-Brazil

Jéssica Raíssa M. Guimarães, Yves Nathan M. de Faria, Mateus F. de Oliveira, Lizandro Manzato and Cláudia C. Silva



Graphical Abstract

Cement sludge samples were submitted to wavelength dispersive X-ray fluorescence (WD-XRF) analysis; in view of the results obtained, the possible applications of this residue were evaluated.

<https://dx.doi.org/10.21577/0103-5053.20230034>

1236 Physicochemical Properties of Superabsorbent Hydrogels Formed by Polyelectrolytic Complexation of Carboxymethylcellulose-Chitosan at Basic pH

Gustavo M. da Silva, Ivana L. M. Ferreira, Marcia P. M. Costa and Rafael F. P. Rocha



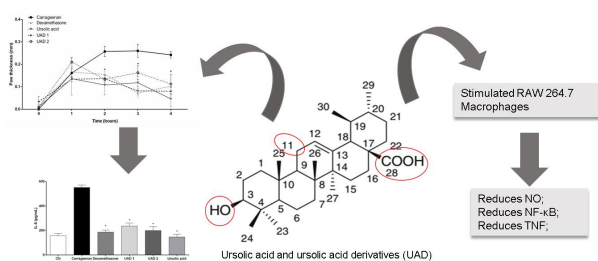
Graphical Abstract

Sample prepared at basic pH remained intact after immersion in water, proving the polyelectrolyte complexes (PEC's) formation by carboxymethylcellulose-chitosan complexation.

<https://dx.doi.org/10.21577/0103-5053.20230035>

1250 Ursolic Acid Derivatives Down Regulate Inflammatory Mediators

Elaine C. Scherrer, Ydia M. Valadares, Caio C. S. Alves, Alessandra P. Carli, Bárbara G. R. Fernandes, Paloma E. Carvalho, Karla A. Ramos, Maiara R. Salvador, Jeferson G. da Silva, Fernando S. Silva, Ângelo M. L. Denadai and Sandra B. R. Castro



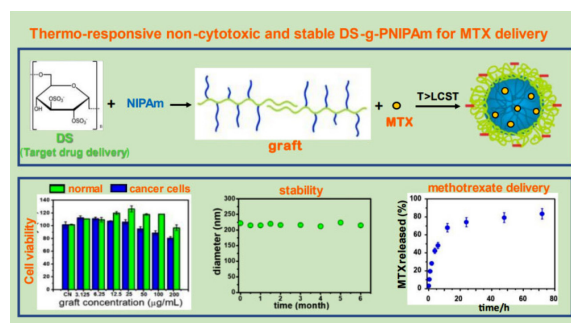
Graphical Abstract

Ursolic acid derivatives reduce inflammatory mediators (nitric oxide (NO), tumor necrosis factor (TNF), interleukin-6 (IL-6) and nuclear factor kappa B (NF-κB)), and decrease the carrageenan paw edema.

<https://dx.doi.org/10.21577/0103-5053.20230036>

1262 Stable and Thermo-Responsive Dextran Sulfate-Graft-PNIPAm Amphiphilic Nanoparticles for Potential Target Methotrexate Delivery

Aline T. dos Santos, Emerson L. da Silva, Raquel C. Montenegro, Jeanlex S. de Sousa, Regina C. M. de Paula and Judith P. A. Feitosa



Graphical Abstract

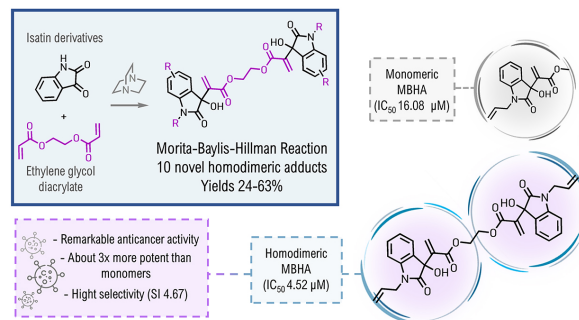
The dextran sulfate-graft-poly(*N*-isopropylacrylamide) (PNIPAm) is amphiphilic, stable, and non-cytotoxic. It forms nanoparticles spontaneously at temperatures close to that of the human body. It incorporates and releases a hydrophobic and extremely toxic drug, used in the treatment of cancer and rheumatoid arthritis, methotrexate, with potential targeting release due to the presence of dextran sulfate.

<https://dx.doi.org/10.21577/0103-5053.20230037>

1273 Synthesis and Anticancer Activity of Homodimeric Morita-Baylis-Hillman Adducts Based on 3-Hydroxyindolin-2-one Core

Maísa C. Coelho, Aleff Castro, Tayná R. Olegário, Rodrigo Cristiano, Boniek G. Vaz, Gabriel F. dos Santos, Lucas S. Machado, Gardênia C. G. Militão, Paulo B. N. da Silva, Mário L. A. A. Vasconcellos and Claudio G. Lima-Junior

SI online



Graphical Abstract

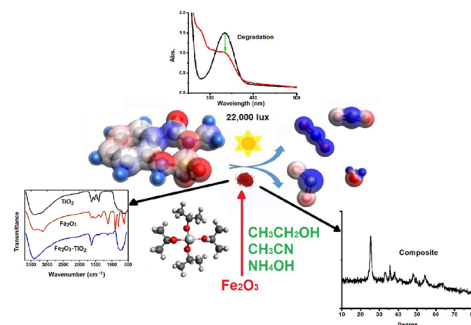
Ten novel dimeric Morita-Baylis-Hillman adducts from ethylene glycol diacrylate are reported. Some of them exhibited an increase in anticancer activity and selectivity, compared to the respective monomeric adducts.

<https://dx.doi.org/10.21577/0103-5053.20230038>

1284 Photocatalytic Degradation of Bentazon Pesticide by a Fe₂O₃-TiO₂ Composite Catalyst Irradiated by UVA, UVB, and Natural Light

Cristian S. Braga, Guilherme G. Bessegato, Keiti Maestre, Fernando R. Espinoza-Quñones, Helton J. Alves, Leandro C. da Silva, Renato Eising and Reinaldo A. Baricatti

SI online



Graphical Abstract

Photocatalysis is a useful tool for environmental remediation. Bentazon molecules can be decomposed into simpler substances by the action of the catalyst (Fe₂O₃-TiO₂) and sunlight (22,000 lux).

<https://dx.doi.org/10.21577/0103-5053.20230039>

1293 Molecular Modeling Studies of β-Sitosterol Extract from Miconia burchellii Triana (Melastomataceae) from Brazilian Cerrado

Marianna C. Silva, Vitor S. Duarte, Lôide O. Sallum, Gracielle O. S. Cunha, Jean M. F. Custodio, Allen G. Oliver, Josana C. Peixoto, Antônio C. S. Menezes and Hamilton B. Napolitano

SI online



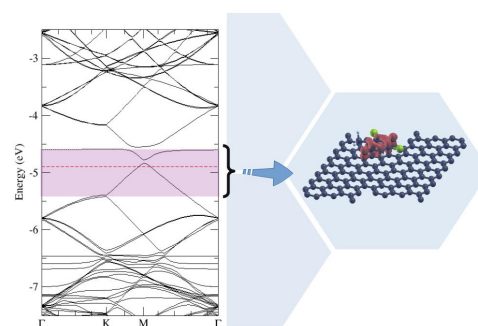
Graphical Abstract

Molecular modeling studies from Cerrado plant.

<https://dx.doi.org/10.21577/0103-5053.20230040>

1303 Theoretical Study of 2,6-Dichloro-3-methyl-1,4-benzoquinone Interacting with Graphene

Leandro C. Sobrinho and Silvette Guerini



Graphical Abstract

Electronic band structure and plot of the local density of states for 2,6-dichloro-3-methyl-1,4-benzoquinone molecule interacting graphene in configuration most stable.

<https://dx.doi.org/10.21577/0103-5053.20230041>

1309 **Featured Properties of the Adsorption of Tebuconazole on Ag Surface Characterized through SERS Spectroscopy**

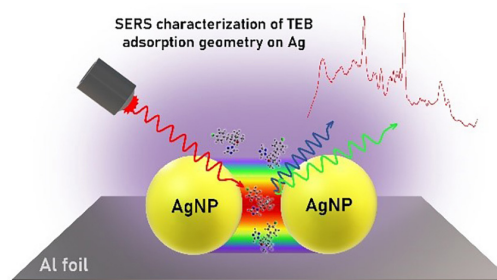


Rafael de Oliveira and Antonio Carlos Sant'Ana

SI online

Graphical Abstract

Adsorption geometries for tebuconazole on silver surface, in different hot spots, were proposed based on studies involving surface-enhanced Raman scattering (SERS) spectroscopy.



<https://dx.doi.org/10.21577/0103-5053.20230042>

1317 **Silver Nanocatalyst Supported on Waste-Based Polystyrene Foam for Thermal and Plasmonic Reduction of *p*-Nitrophenol**

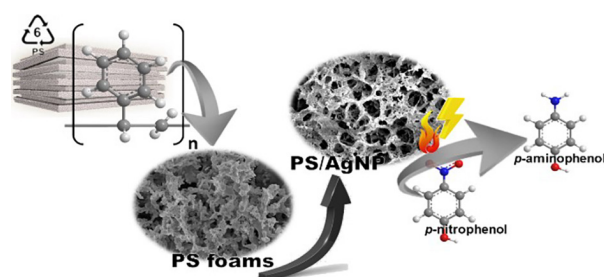


Welida T. A. da Silva, Geovânia C. de Assis, Roberta A. de Jesus, Rayssa J. B. Motta, Luiz Fernando R. Ferreira, Yolice Patricia M. Ruiz, André Galembeck, Ricardo Schneider and Rodrigo J. de Oliveira

SI online

Graphical Abstract

Polystyrene waste, also known as white pollution, has been repurposed as support for silver nanocatalyst. Those nanofoams were able to convert *p*-nitrophenol into aminophenol under plasmonic excitation.



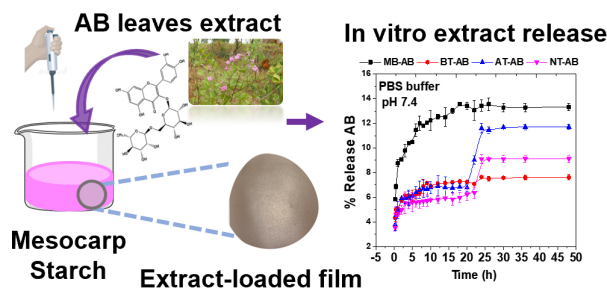
<https://dx.doi.org/10.21577/0103-5053.20230044>

1333 **Controlled Release of Rutin from Babassu Coconut Mesocarp Starch Films**

Liane M. Carvalho, Cicero W. B. Bezerra, Claudia Q. da Rocha, Leticia N. de Oliveira, Luna N. Vasconcelos and Sirlane A. A. Santana

Graphical Abstract

Schematic representation of the production of babassu mesocarp films loaded with *Arrabidaea brachypoda* leaf extract and controlled release assay at pH 7.4.



<https://dx.doi.org/10.21577/0103-5053.20230045>

1347 **Evaluation of the Metabolic Production from the Co-Culture of *Saccharicola* sp. and *Botryosphaeria parva*, an Endophytic Fungi Associated with *Eugenia jambolana* Lam.**

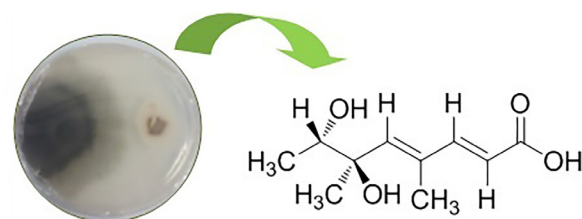


Mayra F. Costa, Maiara S. Borges, Vanessa M. Chapla, Carolina R. Biasetto, Isabele R. Nascimento, Vanderlan S. Bolzani and Angela R. Araujo

SI online

Graphical Abstract

A new carboxylic acid and eight known compounds were isolated from co-culture of *Saccharicola* sp. and *Botryosphaeria parva*, an endophytic fungi in *Eugenia jambolana*.



Botryosphaeria parva and
Saccharicola sp.

<https://dx.doi.org/10.21577/0103-5053.20230046>

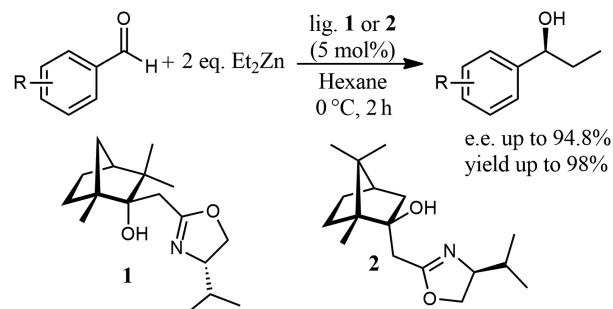
1353 New Catalysts Derived from Natural Products as Highly Stereoselective Chiral Inductors for Diethylzinc Addition to Aromatic Aldehydes

Celso L. Wosch, Ricardo Labes, Kahlil S. Salome, Vitor S. Melo, Renan R. Schorr, Palimécio G. Guerrero Jr., Nathalya K. Lima, Gustavo Frensch, Beatriz H. L. N. S. Maia and Francisco A. Marques

SI online

Graphical Abstract

Chiral ligands derived from (+)-camphor and (-)-fenchone for the addition of diethylzinc to aromatic aldehydes showed enantiomeric excess up to 96%.



<https://dx.doi.org/10.21577/0103-5053.20230047>

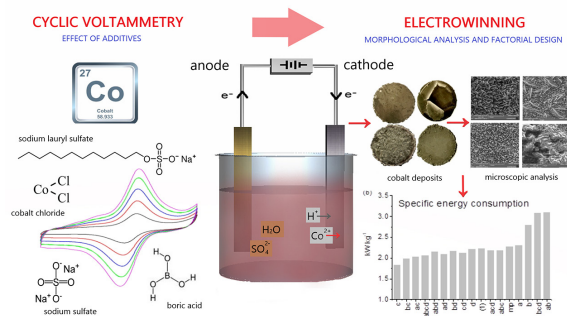
1360 Voltammetric Study on the Electrowinning of Cobalt in the Presence of Additives

Danielle C. de Castro, Iranildes D. dos Santos, Marcelo B. Mansur and Achilles J. B. Dutra

SI online

Graphical Abstract

Cyclic voltammetry was applied to investigate the influence of some organic and inorganic additives on cobalt electrowinning since it is an energy-intensive process and requires an industrially acceptable cobalt deposit production at low operating costs.



<https://dx.doi.org/10.21577/0103-5053.20230048>

