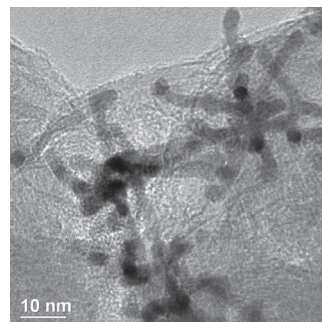


- 133 Influência da composição dos nanofios Pt-Ir/C na atividade catalítica frente a oxidação eletroquímica de etanol em meio ácido

Gláucia R. O. Almeida, Eliana M. Sussuchi, Cristiano T. de Meneses, Luiz P. da Costa, Giancarlo R. Salazar-Banda e Katlin I. B. Eguiluz

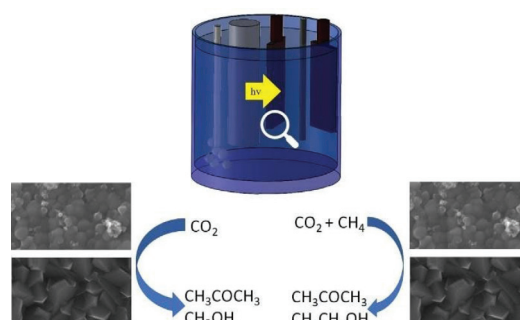
Pt-Ir/C nanowire catalysts were successfully synthesized with different metallic composition and were all more active towards ethanol oxidation than the commercial Pt/C catalyst, and are promising for application in direct ethanol fuel cells.



- 140 Conversão fotoeletrocatalítica de CO₂ e biogás em produtos de interesse energético utilizando semicondutores nanoestruturados de Ti/TiO₂ modificados com óxido de cobre

Laís Bresciani, Letícia Vognach, Carlos H. Lagemann e Simone Stülp

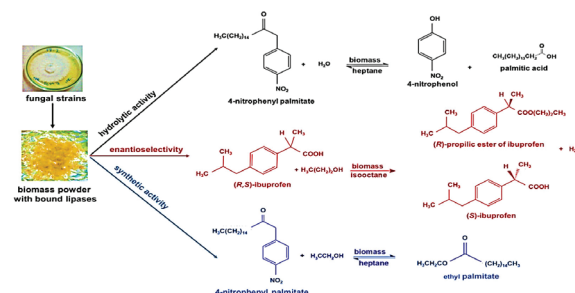
The objective of the work is to modify nanostructured semiconductors of Ti/TiO₂ with copper oxide for application in the photoelectrocatalytic conversion of CO₂ and biogas in fuel products of energetic interest.



- 146 Avaliação da biomassa de fungos amazônicos como fonte de lipases para biocatálise

Israel P. Romano, Vanderlei S. dos Santos, Ana C. de L. P. Louzada, Raimundo C. Pereira Junior, Edson J. do Carmo, Adolfo J. da Mota, Hiléia dos S. Barroso, Ivaldo Itabaiana Junior, José O. Pereira, Spartaco Astolfi Filho e Sandra P. Zanotto

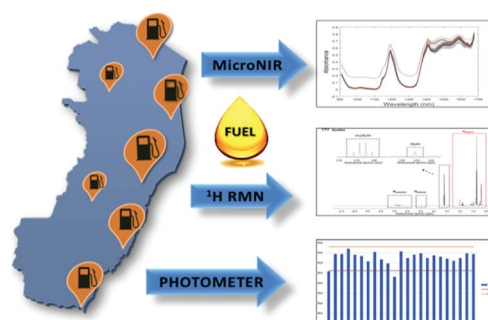
Biomass-bound lipases from fungal organisms may exhibit hydrolytic, synthetic and enantioselective activity - useful capabilities for many important applications in biocatalysis.



- 155 Análise de amostras de combustíveis por fotometria, NIR portátil e RMN de ¹H – uma comparação com os resultados encontrados por técnicas normatizadas

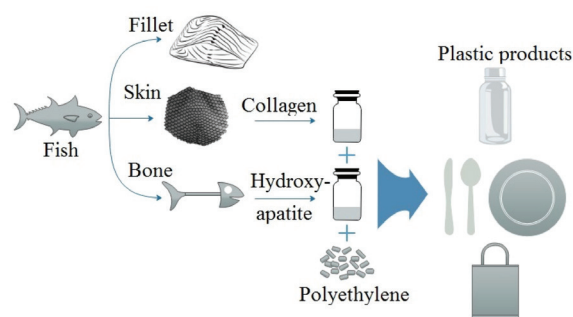
Flavia Tosato, Eliane V. Barros, Danyelle A. Cunha, Francine D. Santos, Thayná Corrêa, Amanda Nunes, Izabella Jastrow, Mylena A. Silverol, Layla U. Pinheiro, Alessandro C. Seabra, Paulo R. Filgueiras, Álvaro C. Neto, Leandro Wang, Ernesto C. Ferreira e Wanderson Romão

Samples of gasoline, ethanol and diesel were collected at gas stations at ES state and analyzed by portable NIR, ¹H NMR and photometry in order to verify the efficiency of the techniques in detect adulteration.



- 168 Reuse of collagen and hydroxyapatite from the waste processing of fish to produce polyethylene composites

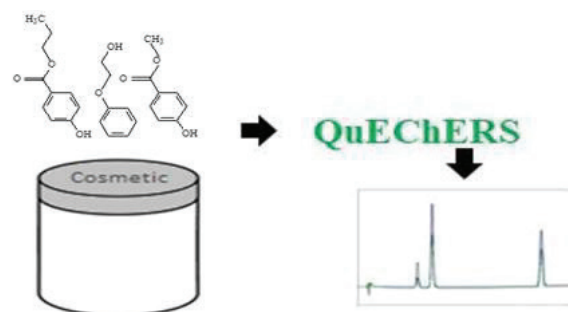
Túlio P. Boaventura, Anderson M. Peres, Viviane S. B. Gil, Camila S. B. Gil, Rodrigo L. Oréfice and Ronald K. Luz



Reuse of waste from the processing of fish to produce composite artifacts.

- 175 Otimização e validação de método baseado em QuEChERS para determinação de conservantes em cosméticos por HPLC-DAD

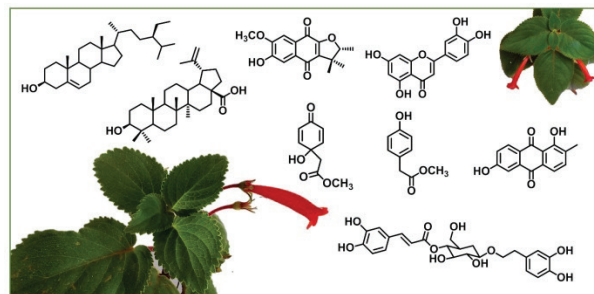
Rafael A. Gonçalves, Noemi Nagata e Patricio G. Peralta-Zamora



Analytical method based in QuEChERS was optimized and validated to be used for analysis of real cosmetic samples. The results showed that QuEChERS can be used for determination of some preservatives in cosmetic matrix.

- 181 Chemical constituents of *Sinningia mauroana* and screening of its extracts for antimicrobial, antioxidant and cytotoxic activities

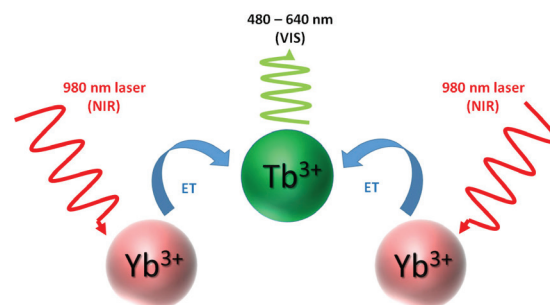
Vanessa Winiewski, Alessandra F. Serain, Eduardo L. de Sá, Marcos J. Salvador and Maria Élide A. Stefanello



Phytochemical study of aerial parts from *Sinningia mauroana* (Gesneriaceae) yielded 17 known compounds, which are been reported for the first time in the species. Additionally, the antimicrobial, antioxidant and cytotoxic activities of its extracts were investigated.

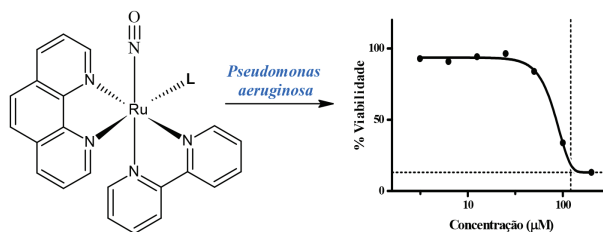
- 188 Judd-Ofelt analysis of Tb^{3+} and upconversion study in Yb^{3+} - Tb^{3+} co-doped CaLiBO glasses

Idelma A. A. Terra, Luis J. Borrero-González, Juliana M. P. Almeida, Antonio C. Hernandez and Luiz A. O. Nunes



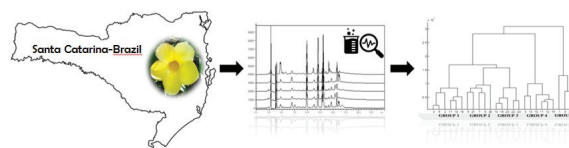
We report on the study of the spectroscopic properties in Ytterbium-Terbium (Yb^{3+} - Tb^{3+}) co-doped calcium lithium borate (CaLiBO) glasses, with the study's focus being on the upconversion process. Our results showed that a cooperative energy transfer (CET) from two Yb^{3+} ions to one Tb^{3+} ion is the origin of the Tb^{3+} upconversion luminescence in the visible region.

- 194 Síntese e caracterização de nitrosil complexos com ação antibacteriana frente a *Pseudomonas aeruginosa*
 Thuanny M. de Sousa, Dayana P. S. Penha, Daniel de L. Pontes, Ana C. F. de B. Pontes e Francisco O. N. da Silva



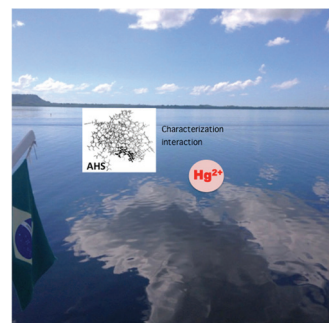
Nitrosyl ruthenium complexes containing 2,2'-bipyridine and phen = 1,10'-phenanthroline ligands presented antibacterial action against *Pseudomonas aeruginosa*.

- 201 Chemical variability of *Allamanda cathartica* L. flowers assessed by multivariate data analysis
 Deivisson W. Rodrigues, Ana Flavia F. Muller, Tiago J. Bonomini, Luiz C. Klein-Júnior, Ruth M. Lucinda-Silva and Angela Malheiros



Allamanda cathartica L. flowers were collected in different locations in the state of Santa Catarina, Brazil. Extractive solutions were analyzed by HPLC-PDA. In order to investigate the similarity of the samples, PCA and HCA analysis were performed.

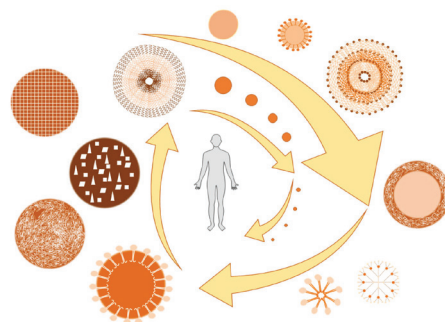
- 206 Complexo estuarino lagunar Mundaú-Manguaba: caracterização da matéria orgânica natural e interação com íons Hg^{2+}
 Alinne D. P. Wanderley, Andre G. R. Mendonça, Luciana C. de Oliveira, Isis M. Figueiredo, Andrea P. Fernandes, Luan T. Batalha e Wander G. Botero



The natural organic matter of the waters of the lagoon estuarine complex Mundaú-Manguaba presented high affinity with Hg^{2+} ions and humification/aromaticity dependent on the characteristics of lagoons.

Revisão

- 212 Abrindo a caixa de Pandora dos nanomedicamentos: há realmente muito mais 'espaço lá embaixo'
 Alessandra C. Apolinário, Giovanna C. Salata, Arthur F. R. Bianco, Claudio Fukumori e Luciana B. Lopes



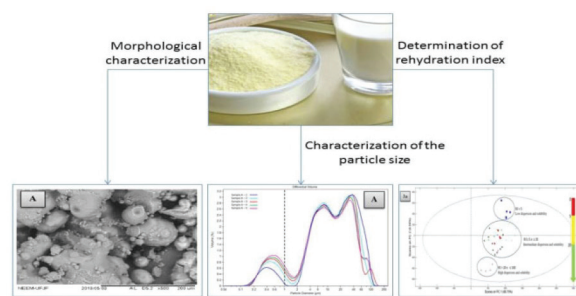
Nanotechnology applied to the medical, biomedical and pharmaceutical fields have been under investigation for many years, but there are still plenty of possibilities for application to human health.

Nota Técnica

226 Particle size distribution applied to milk powder rehydration

Júlia d'Almeida Francisquini, Evandro Martins, Isis Rodrigues T. Renhe, Luiz F. C. de Oliveira, Rodrigo Stephani, Ítalo T. Perrone and Antônio F. de Carvalho

Whole powder milks were analyzed by scanning electron microscopy and particle size analysis. By statistical analysis a more modern rehydration index was developed as a complement to the technique that is usually used to determine powders rehydration.

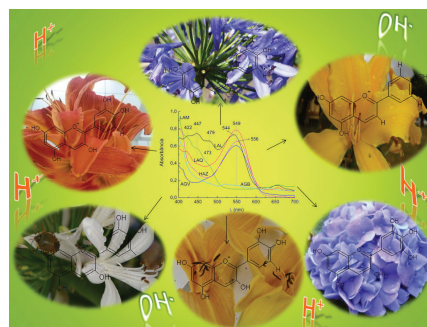


Educação

231 Extratos de *Lilium* sp., *Agapanthus* sp. e *Hydrangea* sp.: comportamento como indicadores naturais em diferentes faixas de pH

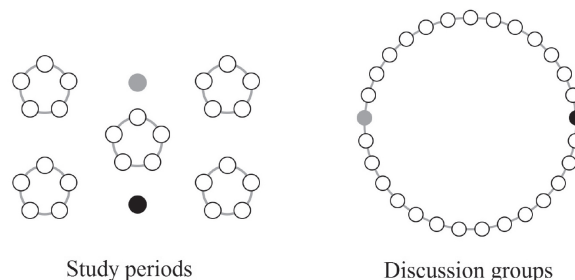
Jhulli M. da Silva, Renata de C. Martins, Fabiele Bernardi, Camila de M. R. dos Santos, Keller P. Nicolini e Jaqueline Nicolini

An experimental propose using flowers extracts: The picture shows the flowers used to extract the dyes in presence of H^+ and OH^- ions (indicating the tests done in aqueous solutions).



239 Influência da frequência e participação no desempenho em um ambiente de aprendizagem centrado no aluno

Camila A. T. Cicuto e Bayardo B. Torres



Organizational representation of study periods and discussion groups. Students: white circles; teacher: black circle and monitor: gray circle.

Assuntos Gerais

249 Só erra quem faz, e quem faz erra! Um manifesto pelo cálculo da propagação de incertezas

Luís M. Gonçalves

$$\Delta y = \sqrt{\sum_i \left(\frac{\partial y}{\partial x_i} \right)^2 (\Delta x_i)^2}$$

The equation of propagation of uncertainty is a simple and powerful equation that chemists should apply wisely and more often.