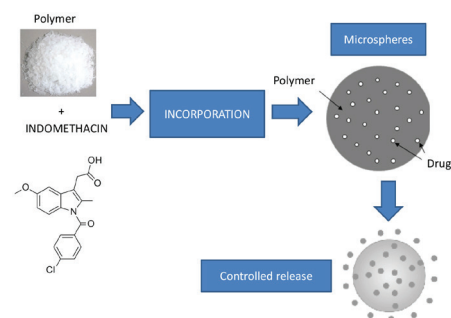


685 Novel PEG 4000 derivatives and its use in controlled release of drug indomethacin

Lúbia G. Nascimento, Suellen A. Lopes, Ayron B. L. Teodolino, Kátia M. Novack, Ana Paula M. Barboza, Bernardo R. A. Neves, M^a Luiza S. Azevedo, Lucas R. D. Sousa and Viviane M. R. dos Santos

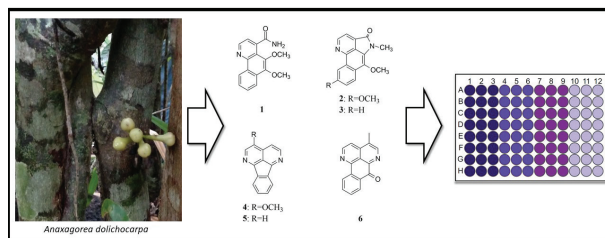
Incorporation and controlled release of drug indomethacin with formation of the microspheres of PEG 4000 incorporated with indomethacin.



692 Dois novos alcaloides azafenantreno de *Anaxagorea dolichocarpa* Sprague & Sandwith

Kaio A. Sales, Anderson A. V. Pinheiro, Diego I. A. F. Araújo, Rodrigo S. de Andrade, M^a de Fátima Agra, Marianna V. Sobral, Hemerson I. F. Magalhães, Valgrícia M. de Sousa, Raimundo Braz-Filho, Marcelo S. da Silva e Josean F. Tavares

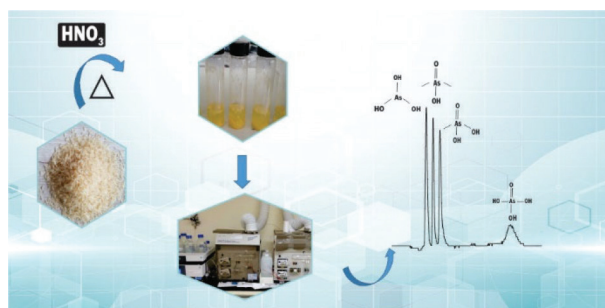
A chemical investigation of *Anaxagorea dolichocarpa* Sprague & Sandwith led to isolation of six (1 - 6) alkaloids, five of which had their cytotoxic activity evaluated against HCT-116 and L929 cell lines.



697 Speciation analysis of arsenic in rice using High Performance Liquid Chromatography coupled with Hydride Generation Atomic Fluorescence Spectrometry (HPLC-HG-AFS)

Gabriella A. Borges, Guilhermina de O. Souza, Patrícia S. F. Lopes, Virginia S. T. Ciminelli, Claudia L. Caldeira and Guilherme D. Rodrigues

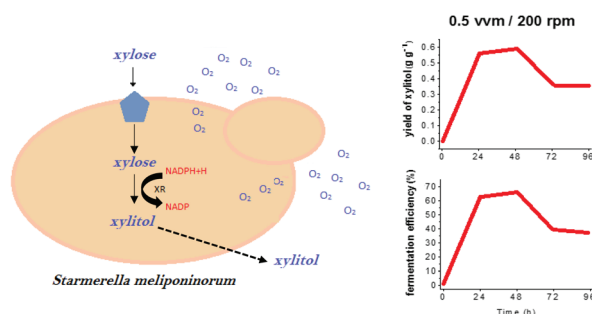
Determination and speciation analysis of the inorganic and organic species of arsenic found most often in rice samples: As(V), As(III), monomethylarsonic acid (MMA), and dimethylarsinic acid (DMA) using HPLC-HG-AFS.



705 Influence of agitation and aeration on xylitol production by the yeast *Starmerella meliponinorum*

Rosimeire O. da Silva, Meirieleme do N. Serpa and Fábio C. A. Brod

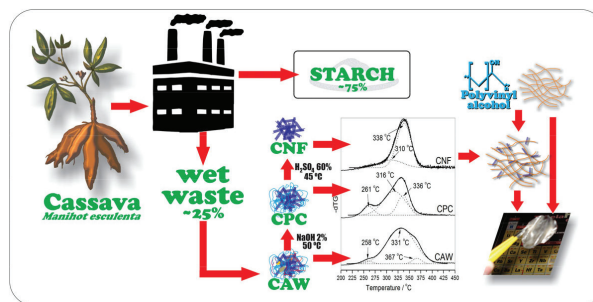
For yeast strain used in this research increasing aeration, there is a gradual increase in the yield of xylitol, showing that the adjustment of this factor is essential in the production of this polyol.



711 Cellulose nanofibers from Cassava Agro-industrial Waste as reinforcement in PVA films

Marcilene N. Schoeler, Fernando R. Scremin, Nayara F. de Mendonça, Viviane P. Benetti, Jhonatan A. de Jesus, Rodrigo L. de O. Basso and Paulo R. S. Bittencourt

Cellulose nanowhiskers can be obtained from cassava fiber and used in polymeric composites, increasing the thermal and mechanical resistance of these systems and valuing this material, which is a residue of the food industry.



718 Bioaccessibilidade de zinco, cálcio e fósforo em extrato de soja e amostras de leite bovino, caprino e ovino

Carla M. Bossu, Eveline A. Menezes e Ana R. A. Nogueira

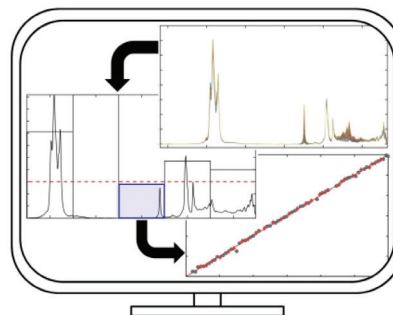
Bioaccessibility of Zn, Ca and P in soybean extract and cow, goat, and sheep milk samples.



723 Quantificação do teor de biodiesel de crambe em misturas com diesel utilizando espectroscopia mir e seleção de variáveis

Lucas G. da Costa, Baltazar V. Siteo, Douglas Q. Santos e Waldomiro Borges Neto

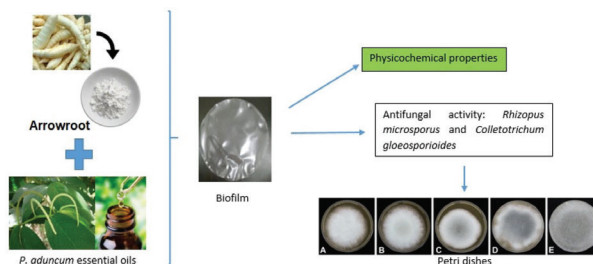
The method of quantification of crambe methyl biodiesel in blends with diesel proposed in this work, which uses the analysis by PLS allied to the selection of variables iPLS presents advantages to the official method, such as waste reduction and analysis time.



729 Incorporation of essential oils from *Piper aduncum* into films made from arrowroot starch: effects on their physicochemical properties and antifungal activity

Anna C. F. Valadares, Cassia C. Fernandes, Josemar G. de Oliveira Filho, Isabella P. B. de Deus, Thayanara M. de Lima, Elizabeth A. J. da Silva, Edson L. Souhie and Mayker L. D. Miranda

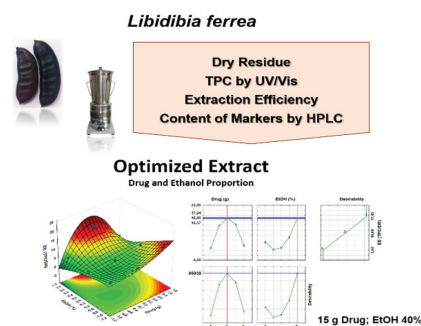
Arrowroot starch films enriched with essential oils from *Piper aduncum* are capable of operating as biodegradable packaging with promising antifungal activity against *Rhizopus microsporus* and *Colletotrichum gloeosporioides*.



- 738 Extraction of monomers of hydrolysable tannins from pods of *Libidibia ferrea* (Mart. ex Tul.) L. P. Queiroz: effects of solvent and amount of drug using Response-Surface Methodology and *Desirability* profile

Magda R. A. Ferreira, Patricia A. Sousa, Janaína C. B. Machado and Luiz A. L. Soares

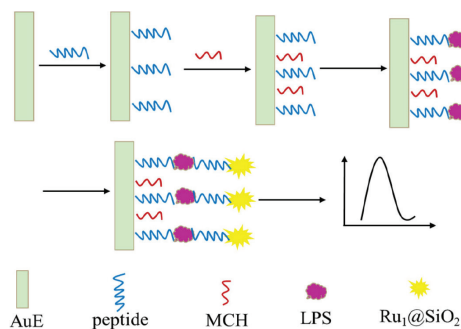
Influence of drug and ethanol proportion on responses of analysis of extracts from *Libidibia ferrea* pods by Response Surface Methodology and *Desirability* profile.



- 747 An electrochemiluminescence sandwich biosensor for the detection of lipopolysaccharide

Xuemei Fan, Zhejian Li, Shumin Wang, Yimeng Wang, Lingmin Yu and Xinhui Fan

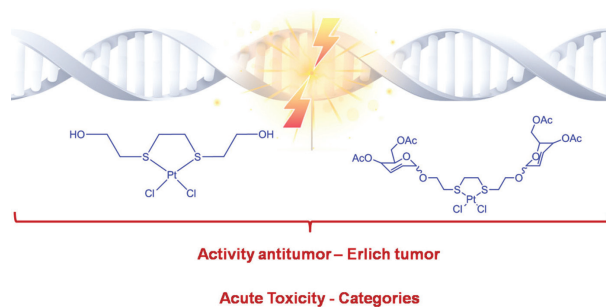
A sensitive sandwich electrochemiluminescence biosensor for the determination of lipopolysaccharide was designed using peptide as recognition molecules.



- 752 Complexos de platina(II) conjugado e análogo a *O*-glicosídeos: síntese, caracterização estrutural e atividade antitumoral

Lidiane M. A. de Lima, Mirelly D. F. Santos, Leonardo S. Albuquerque, Mônica F. Belian, Wagner E. Silva, João R. F. Filho, Jandysom M. Santos, Jaciana S. Aguiar e Teresinha G. da Silva

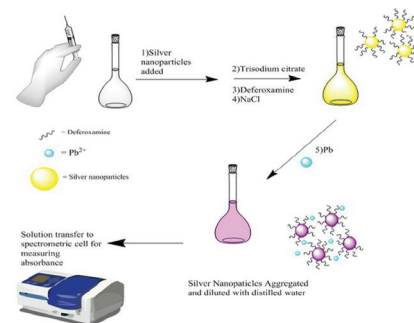
Despite presenting antitumor activities similar to cisplatin, the proposed platinum(II) complexes have reduced toxicity, once the cisplatin is belonging to category 2, *cis*-[PtCl₂(C₆H₁₄S₂O₂)-κ²S] to category 3 and *cis*-[PtCl₂(C₂₆H₃₈O₁₂S₂)-κ²S] to category 4.



- 760 Development of an analytical method for the determination of lead based on local surface plasmon resonance of silver nanoparticles

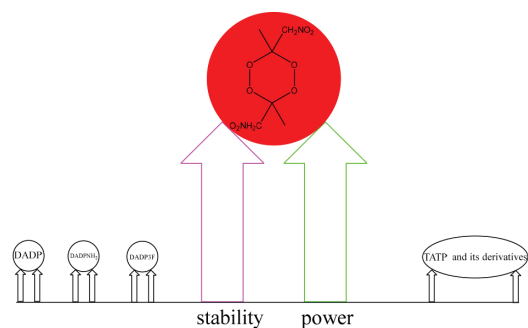
Hamed Azimi, Seyyed H. Ahmadi, Mohammadreza Manafi, Syed H. H. Mousavi and Mostafa Najafi

Colorimetric determination of lead in water samples based on local surface plasmon resonance (LSPR) phenomenon in aggregation of silver nanoparticles in presence of Pb²⁺ and deferoxamine as chelating agent.



- 765 Theoretical studies on diacetonediperoxide derivatives and comparisons with other multi-peroxidic compounds
Zongcheng Miao, Junmei Li, Guoliang Fan and Yi Luan

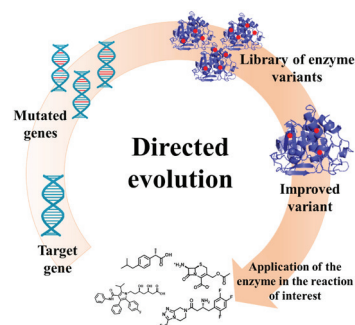
The stability and detonation performance of diacetonediperoxide and its derivatives were investigated and compared with one of TATP counterparts. Results show that DADPNO₂ is a novel candidate for use as an energetic material.



Revisão

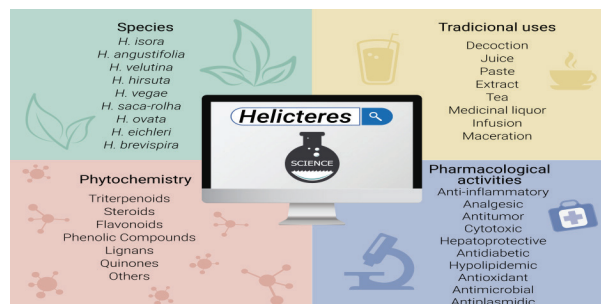
- 773 Evolução dirigida de enzimas: pequenas modificações, melhores biocatalisadores
Iris S. Teixeira e Cintia D. F. Milagre

Scientific progress in the field of Directed Evolution today enables the opportunity to tune or create a given biocatalyst for a specific application. The generated biological systems are good models for sustainable organic synthesis.



- 787 *Helicteres* L. species (Malvaceae *sensu lato*) as source of new drugs: a review
Diégina A. Fernandes, Edileuza B. de Assis, M^a Sallett R. Souza, Pedro I. V. de Souza and M^a de Fátima V. de Souza

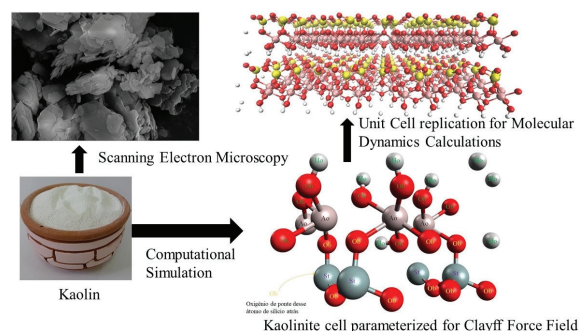
Bibliographic analysis of the traditional use, chemical and pharmacological profile of *Helicteres* L. species (Malvaceae *sensu lato*) searching for new drug sources.



Educação

- 804 Implementação do campo de força ClayFF no GROMACS: uma aplicação em estrutura de caulinita
Eric Mochiutti, Rodrigo L. da C. Schwartz, João P. O. Lima, Arthur L. S. Carvalho, Roberto de F. Neves, Davi do S. B. Brasil e Marlice C. Martelli

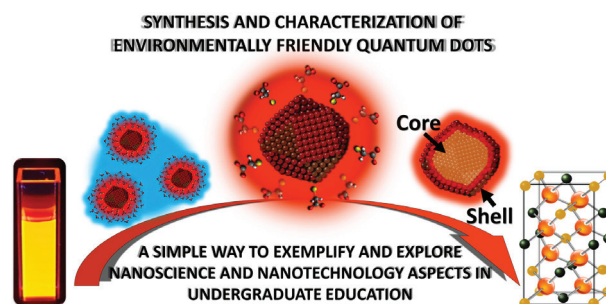
Molecular simulation applied to the kaolinite crystal structure, used as an example of the ClayFF force field implementation for molecular dynamics studies in GROMACS software, with unit cell parameterization and replicated systems.



- 813 Síntese e caracterização de pontos quânticos ambientalmente amigáveis, um meio simples de exemplificar e explorar aspectos da nanociência e nanotecnologia em cursos de graduação

Calink I. L. Santos, Juan C. A. Ferreira, Letícia R. C. Cunha, Roberto Vaz e Marco A. Schiavon

Nanotechnologies and nanomaterials can be interdisciplinary tools in education. Quantum dots are nanomaterials of technological interest and involve lots of important subjects in chemistry teaching and may be helpful to discuss a variety of concepts in a deeper and applied way.



Assuntos Gerais

- 823 Mulheres cientistas na química brasileira

Naiane Naidek, Yane H. Santos, Patricia Soares, Renata Hellinger, Thayna Hack e Elisa S. Orth

Gender gap numbers of scientists in the field of chemistry in Brazil are presented beginning from early stages since undergraduate course until higher stage of a career such as presidency and overall recognition.

