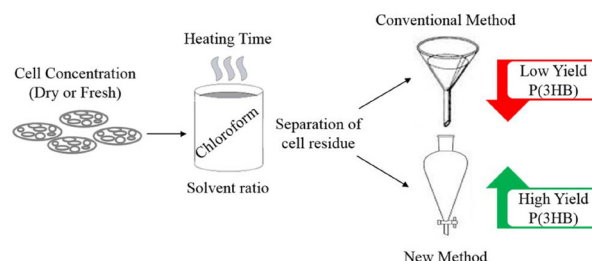


Artigo

- 125 Simplified recovery process of *Ralstonia solanacearum*-synthesized polyhydroxyalkanoates via chemical extraction complemented by liquid-liquid phase separation

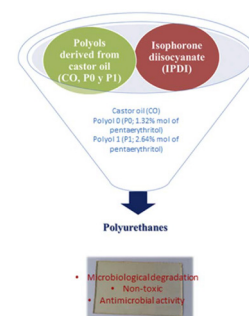
Karine L. Macagnan, Amanda A. Rodrigues, Mariane I. Alves, Lígia Furlan, Sônia M. Kesserlingh, Andréa B. Moura, Patrícia D. de Oliveira, Alan J. A. McBride, Angelita da S. Moreira and Claire T. Vendruscolo

The following parameters were improved in the P(3HB) recovery method: cell concentration, heating time, solvent ratio and separation of cell residue (filtration - conventional method or liquid-liquid separation by polarity difference - new method).



- 131 Actividad antibacteriana, degradación hidrolítica y microbiana y citotoxicidad *in vitro* de poliuretanos sintetizados con poliols derivados del aceite de higuera

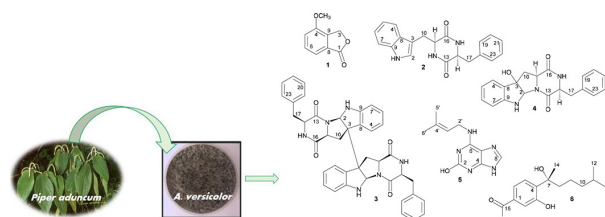
Yomaira L. Uscategui, Luis E. Díaz y Manuel F. Valero



An evaluation of microbiological degradation, *in vitro* cytotoxicity and antimicrobial activity was performed on Polyurethanes synthesized from castor oil (with and without chemical modification) and isophorone diisocyanate (IPDI).

- 138 Cyclo-(trp-phe) diketopiperazines from the endophytic fungus *Aspergillus versicolor* isolated from *Piper aduncum*

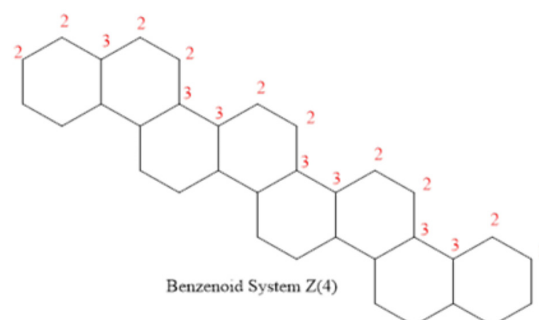
Juliana R. Gubiani, Helder L. Teles, Geraldo H. Silva, M^o Cláudia M. Young, José O. Pereira, Vanderlan S. Bolzani and Angela R. Araujo



An endophytic fungus *A. versicolor* isolated from the leaves of *P. aduncum* was used to produce six known compounds: three peptide derivatives, one adenine derivative, one phthalide derivative and one benzoic acid derivative.

- 143 Molecular descriptors of benzenoid systems

Nazeran Idrees, Muhammad N. Naeem, Fida Hussain, Afshan Sadiq and Muhammad K. Siddiqui



The figure shows zigzag benzenoid system all of whose vertices have degree either two or three, different variants of Zagreb indices of the benzenoid system are computed which mainly depend on the degrees of vertices of the system.

- 146 Revestimentos de alta camada obtidos com a modificação de resinas epóxi novolaca pela reação com organo-siloxano e catálise ácida

Roberta J. Rocha, José A. F. F. Rocco, M^a Auxiliadora S. de Oliveira e Koshun Iha

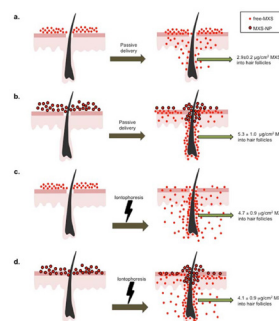
Equipment coated with the high layer coating obtained in the reaction of modified novolac epoxy.



- 154 Iontophoresis on minoxidil sulphate-loaded chitosan nanoparticles accelerates drug release, decreasing their targeting effect to hair follicles

Breno N. Matos, Larissa M. A. Melo, Maíra N. Pereira, Thaiene A. Reis, Marcílio Cunha-Filho, Taís Gratieri and Guilherme M. Gelfuso

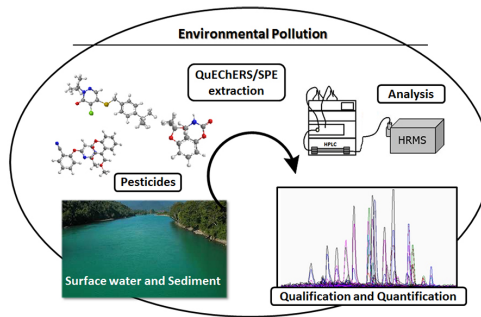
Iontophoresis presents MXS targeting potential to hair follicles; however, it is incapable of preventing dermal exposure. The passive application of MXS-loaded chitosan nanoparticles remains the best way to target MXS to the hair follicles while avoiding possible side effects.



- 158 Determinação de agrotóxicos na água e sedimentos por HPLC-HRMS e sua relação com o uso e ocupação do solo

Marilda Chiarello, Roberta N. Graeff, Luciane Minetto, Gisele Cemin, Vania E. Schneider e Sidnei Moura

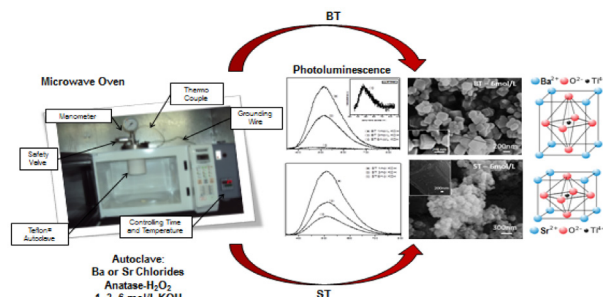
Determination of pesticides in surface water and sediment, based on solid phase extraction and QuEChERS, analyzed by liquid chromatography and high resolution mass spectrometry.



- 166 Síntese de BaTiO₃ e SrTiO₃ pelo método hidrotermal assistido por micro-ondas utilizando anatase como precursor de titânio

Renata S. Magalhães, Wagner D. M. Junior, Agda E. Souza, Silvio R. Teixeira, Máximo S. Li e Elson Longo

BT tetragonal and cubic ST were synthesized using MAH method. BA / Sr chlorides and Anatase-H₂O₂ were used as metal precursors in an alkaline medium. The photoluminescent behaviors of BT and ST were evaluated according to the KOH concentration.



171 Composição química, atividade citotóxica e antioxidante de um tipo de própolis da Bahia

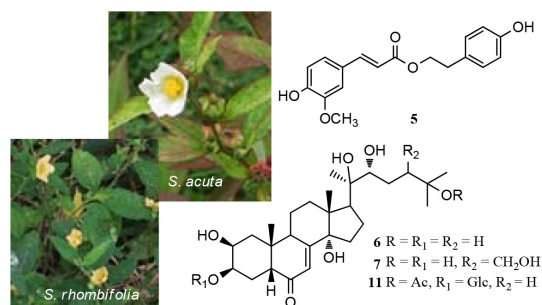
Darlan C. dos Santos, Jorge M. David e Juceni P. David



Saturated hydrocarbons, methyl cinnamate, sitosterol cinnamate and ananixanthone were isolated from the brown propolis (classified as Propolis Type 6). The extracts showed toxicity in the brine shrimp test.

176 Anti-hyperglycemic, antioxidant, and anti-inflammatory activities of extracts and metabolites from *Sida acuta* and *Sida rhombifolia*

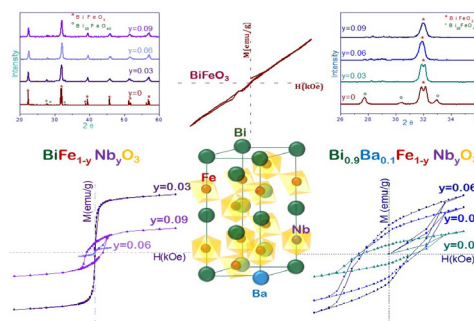
Amira Arciniegas, Ana L. Pérez-Castorena, Antonio Nieto-Camacho, Yuko Kita and Alfonso R. de Vivar



The acetone extracts of *S. acuta* and *S. rhombifolia* inhibited yeast α -glucosidase (IC_{50} 8.49 ± 0.66 and $8.10 \pm 0.34 \mu\text{g mL}^{-1}$, respectively) and showed mild activity on DPPH and TPA tests. Among the isolated compounds 5 was active in all evaluations.

182 Modificación de las propiedades estructurales, eléctricas y magnéticas del BiFeO_3 por la incorporación de Ba y Nb

Cristian A. Narváez, Claudia F. Villaquirán Raigoza y Aida P. González Nieva

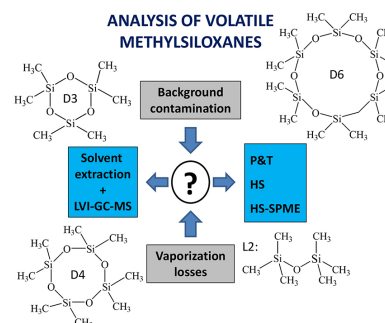


BiFeO_3 exhibits anti-ferromagnetic order within distorted rhombohedrally perovskite structure. Among the possible strategies, substitution of the A and/or B site by rare earth or transition metal elements has been proposed in order to suppress formation of secondary phases and to induce ferromagnetism.

Revisão

192 Problemas en el análisis de metilsiloxanos volátiles (VMS): origen y soluciones

E. Y. Companioni-Damas

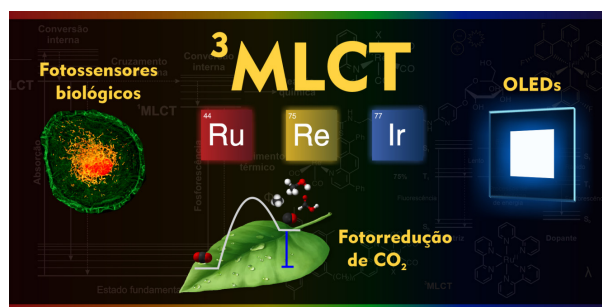


The graphical abstract shows the main problems related with the analysis of volatile methylsiloxanes (VMS): background contamination and vaporization losses, and the techniques commonly used for their analysis. The chemical structures of some VMS are also shown.

- 200 A importância do estado excitado $^3\text{MLCT}$ de compostos de Ru(II), Re(I) e Ir(III) no desenvolvimento de fotossensores, OLEDs e fotorredução de CO_2

Andressa V. Müller, Márcia R. Gonçalves, Luiz D. Ramos, André S. Polo e Karina P. M. Frin

The progresses and challenges of some coordination compounds based on Ru(II), Re(I) and Ir(III) for biomolecules photosensors, electroluminescent devices or CO_2 photoreduction catalysts are reviewed and correlated to their photochemical and photophysical properties.

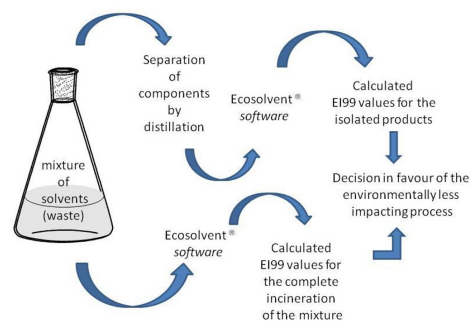


Nota Técnica

- 214 Avaliação dos impactos ambientais dos tratamentos de resíduos de solventes no Instituto de Química da Universidade de São Paulo

Cláudia R. Martins, Patrícia B. Di Vitta, Liliana Marzorati e Cláudio Di Vitta

Ecosolvent® software was used to estimate the environmental impacts for the recovering of some solvents from waste, by distillation, or for the complete incineration of the mixture. In our case, recovering showed to be less impacting than incineration.

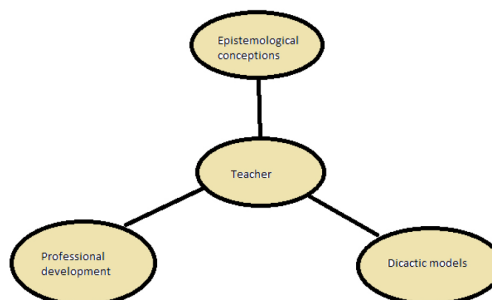


Educação

- 219 Analisando o desenvolvimento profissional de um licenciando em química: relações entre concepções epistemológicas e modelos didáticos

Camila G. Passos e José C. Del Pino

This figure illustrates the interrelationship between the epistemological conceptions and didactic models used by teachers to be able to analyze the professional development process.



- 228 Sinais de fundo em análise instrumental: uma discussão essencial em cursos de graduação

Renata S. Amais, Fábio R. P. Rocha e Joaquim A. Nóbrega

Illustration of the measurement of analytical signal with (a) and without (b) an intense background signal. As well as illumination by the candles is more visible in dark, measurement of analytical signals is feasible without intense background, thus yielding lower detection limits.



238 Introdução à físico-química orgânica utilizando um colorímetro artesanal – uma prática interdisciplinar
Valmir B. Silva e Elisa S. Orth

A homemade colorimeter was constructed and used in a physical organic chemical study in order to study the substituent effect in a nucleophilic catalytic acyl transfer reaction.

