

195 Efeito da ativação mecânica de uma formulação de talco/ caulim/alumina sobre o mecanismo e a cinética de formação de cordierita

João B. Rodrigues Neto, Dachamir Hotza e Rodrigo Moreno

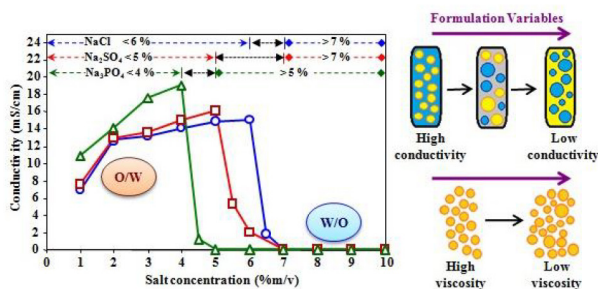


Graphical Abstract

A stoichiometric mixture of talc, kaolin, and alumina was mechanically activated to produce cordierite ($2\text{MgO} \cdot 2\text{Al}_2\text{O}_3 \cdot 5\text{SiO}_2$). Optimal processing conditions were: milling time of 45 min and thermal treatment at 1280 °C for 1 h.

200 Influencia de variables de formulación en la viscosidad de emulsiones de surfactante aniónico-aceite-agua

Gerson Chávez, Irán Parra, Milangel Luzardo, Bélgica Bravo, Nacarid Delgado y Nelson Márquez

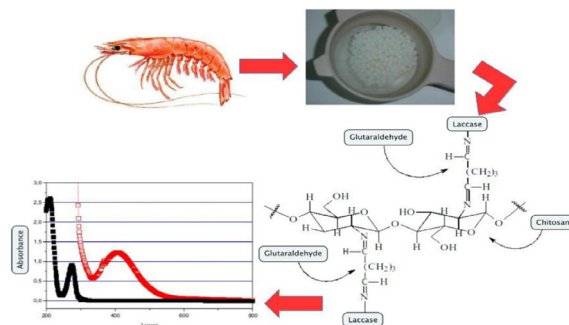


Graphical Abstract

The effect of formulation variables (composition and physicochemical) on properties as conductivity, viscosity and droplet size of o/w emulsions was studied for establishing statistical prediction coefficients.

209 Imobilização e caracterização de laccase e seu uso na biodegradação de efluentes de indústrias papelarias

Sabrina M. V. Pacheco e Carlos H. L. Soares

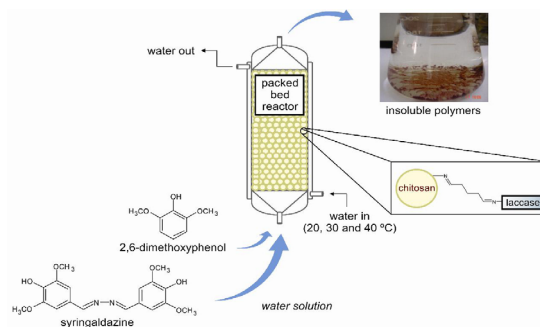


Graphical Abstract

This work presents a study of the immobilization of laccase on chitosan beads which were obtained from shrimp shells. For immobilization, the chitosan beads were activated with glutaraldehyde. The beads were successfully used in the biodegradation of cellulose and paper effluent.

215 Imobilização de laccase de *Aspergillus sp.* em quitosana e sua aplicação na bioconversão de fenóis em reatores de leito fixo

Everton Skoronski, Mylena Fernandes, Agenor Furigo Júnior, Carlos H. L. Soares e Jair J. João



Graphical Abstract

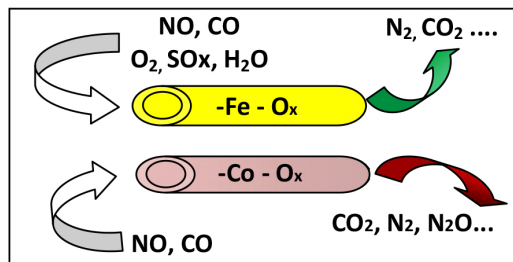
Laccase was covalently immobilized in chitosan. This biocatalyst was applied in the bioconversion of syringaldazine and 2,6-dimethoxyphenol in a packed bed reactor. These compounds produce an insoluble polymer as oxidation product. The reactor was thermo-controlled by water flow in the external jacket.

- 221 Conversão química de NO e CO sobre catalisadores à base de óxidos de cobalto ou de ferro

Andreza A. Longati, Willian C. Ferreira, Cristiane M. F. Quintão, Maikel L. Maloncy e Marcelo S. Batista

Graphical Abstract

In NO reduction by CO, iron catalysts exhibit higher activity and selectivity towards N_2 while on cobalt catalyst showed the formation of N_2O . Was also investigated the effect of addition of O_2 , SO_2 or H_2O , commonly present in pollutant emissions.

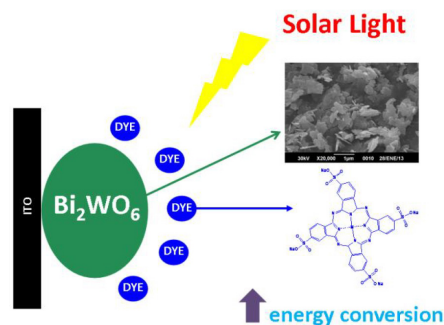


- 226 Celdas solares fotoelectroquímicas basadas en Bi_2WO_6

Lorean Madriz, José Tatá, Verónica Cuartas, Alejandra Cuéllar y Ronald Vargas

Graphical Abstract

Both Bi_2WO_6 and Bi_2WO_6 - (Metal)PcTSNa₄ are able to convert solar energy.

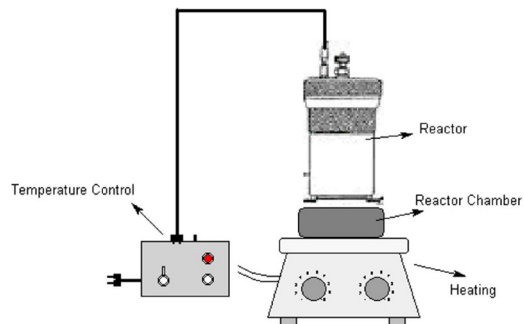


- 232 Impregnação do ácido 12-tungstosfórico em sílica – Parte II: efeito de diferentes solventes na impregnação e atividade catalítica na esterificação metílica de ácido esteárico

Karine I. Scroccaro, Valcineide O. de A. Tanobe, Alan A. de Oliveira, Fernando Wypych e Carlos I. Yamamoto

Graphical Abstract

The heterogeneous catalysis of a methanolic esterification was studied with a new catalyst in a bath reactor, at 80 °C during 2 h and the conversion achieved at 95% of ester formation.

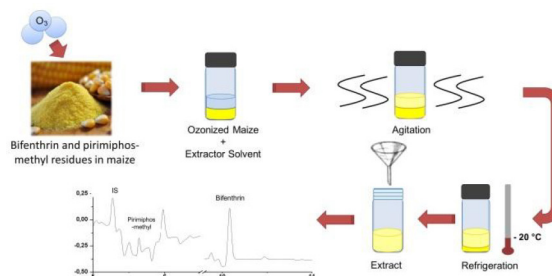


- 238 Desenvolvimento do método de extração sólido-líquido com partição em baixa temperatura para determinação de inseticidas em grãos de milho ozonizados

Romenique da S. de Freitas, M^a Eliana L. R. de Queiroz, Lêda R. D'A. Faroni, Fernanda F. Heleno e Vanessa V. de Moura

Graphical Abstract

The SLE/LTP-GC/ECD method was optimized, validated and applied for bifenthrin and pirimiphos-methyl residues determination in maize grains treated with ozone gas.

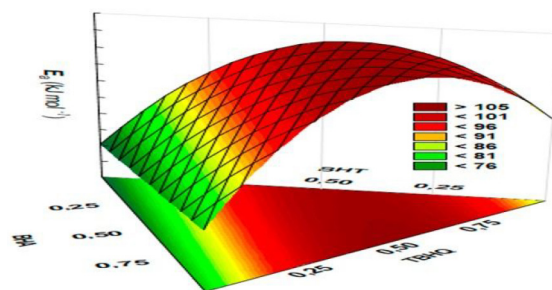


- 244 Estudo da cinética de oxidação de biodiesel B100 obtido de óleo de soja e gordura de porco: determinação da energia de ativação

Diego Galvan, Juliane R. Orives, Rodolfo L. Coppo, Cezar H. F. Rodrigues, Kelly R. Spacino, Jurandir P. Pinto e Dionísio Borsato

Graphical Abstract

In all experiments, addition of antioxidants increased the activation energy. There was a synergistic effect when a mixture of 50% TBHQ and 50% BHA was used.

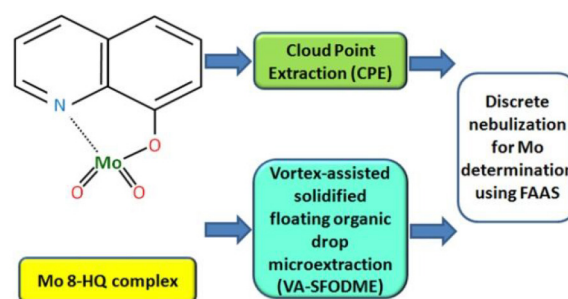


- 249 Avaliação da combinação da nebulização discreta e processos de microextração aplicados à determinação de molibdênio por espectrometria de absorção atômica com chama (FAAS)

Jenny A. Oviedo, Amanda M. D. de Jesus, Lucimar L. Fialho e Edenir R. Pereira-Filho

Graphical Abstract

A comparison between two extraction methods was developed for Mo determination in water and pharmaceutical samples using FAAS with discrete nebulization. The enrichment factors were 31 and 67 for CPE and VA-SFODME, respectively.

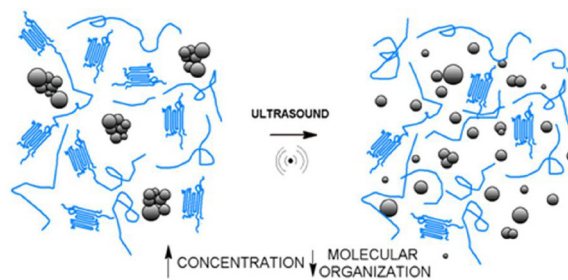


- 255 Efeito da adição de TiO_2 nas propriedades térmicas e na cristalinidade do copolímero de etileno/acetato de vinila

Ana C. S. Valentim, M^a Inês B. Tavares e Emerson O. da Silva

Graphical Abstract

Particles of titanium oxide with good dispersion decreases the degree of crystallinity of EVA copolymer.

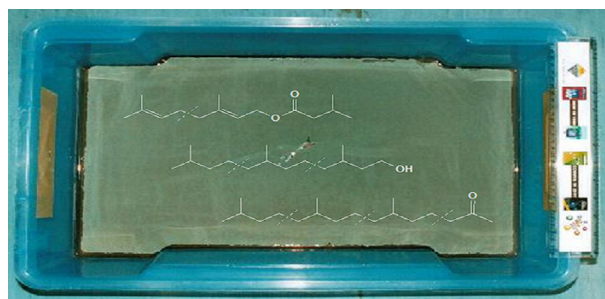


- 260 Biomolecules produced in liquid-state fermentation by a marine-derived fungus, *Penicillium roqueforti*

Roberto Mioso, Francisco J. T. Marante, Irma H. B. de Laguna, Juan E. G. González and Juan J. S. Rodríguez

Graphical Abstract

Top view of *P. roqueforti* culture (blue-green colour) in a plastic box (blue colour), and three volatile terpenoid compounds identified.

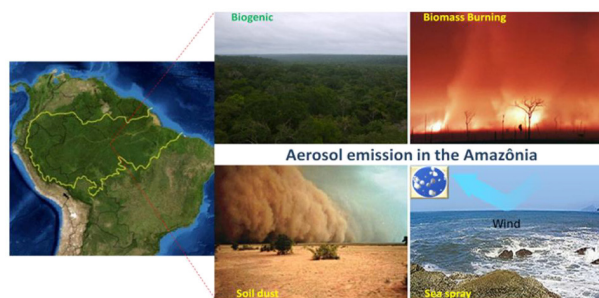


268 Composição elementar do aerossol atmosférico na região central da Bacia Amazônica

Andréa Arana e Paulo Artaxo

Graphical Abstract

A regional identity for the natural biogenic aerosol was found for the Central Amazon Basin and can be used in dynamical chemical region models. The sources found are the biogenic, biomass burning, soil dust and sea salt emissions.

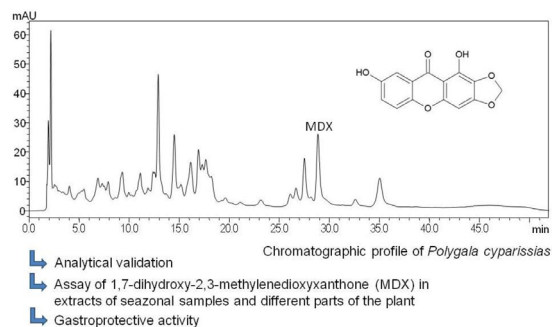


277 Validation of an HPLC method for the determination of 1,7-dihydroxy-2,3-methylenedioxyxanthone in extracts obtained from *Polygala cypris* A. St. Hil. & Moq. (Polygalaceae) and evaluation of the influence of its content on the gastroprotective activity

Luiz C. Klein-Júnior, Sérgio F. de Andrade, Valdir Cechinel-Filho and Tania M. B. Bresolin

Graphical Abstract

An HPLC method development and validation for the quantification of 1,7-dihydroxy-2,3-methylenedioxyxanthone (MDX) on *Polygala cypris* was achieved and its potential correlation with the gastroprotective effect of different extracts was evaluated.



281 Intraspecific variability of *Holostylis reniformis*: concentration of lignans, as determined by maceration and supercritical fluid extraction (SFE-CO₂), as a function of plant provenance and plant parts

Gislaine F. Martins, Marcos D. P. Pereira, Lucia M. X. Lopes, Tito da Silva, Paulo de T. V. e Rosa, Fernanda P. Barbosa, Gisele B. Messiano and Antoniana U. Krettli

Graphical Abstract

¹H NMR, HPLC-DAD-ESI/MS, HPLC-DAD, GC-MS, and chemometric techniques were used to analyse of lignans, sesquiterpenes, aliphatic hydrocarbons, fatty acids and esters in the extracts obtained by maceration and SFE-CO₂ extraction.

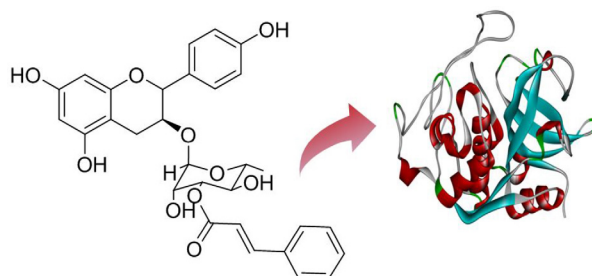


288 Constituintes químicos das cascas do caule de *Vochysia thyrsoidea* Pohl. (Vochysiaceae) e avaliação das atividades citotóxica e inibitória frente as catepsinas B e K

Lorena R. F. de Sousa, Jame's A. da Silva, Paulo C. Vieira, Maísa B. Costa, Mirley L. dos Santos, Aline B. Sbardelotto, Cláudia do Ó Pessoa, Manoel O. de Moraes e Antônio C. S. Menezes

Graphical Abstract

A new flavonoid, catechin-3-O-(3''-O-trans-cinnamoyl)-α-rhamnopyranoside, isolated from *V. thyrsoidea* had showed inhibitory activity against cathepsin B (IC₅₀ = 62.02 μM).



Revisão

- 293 Semioquímicos de moscas das frutas do gênero *Anastrepha*
 Alana Lima-Mendonça, Adriana de L. Mendonça, Antônio
 E. G. Sant'Ana e Ruth R. Do Nascimento

Graphical Abstract

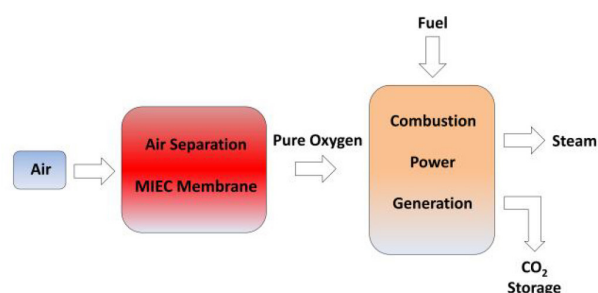
This paper reports the advances on the chemical communication of *Anastrepha* species, involving cuticular hydrocarbons and volatile compounds released by male flies and fruit hosts, which function as attractants for females.



- 302 Membranas de condução mista iônica e eletrônica (MIEC):
 composições, preparação e desempenho
 Giulliani S. Garcia, Priscila L. Rachadel, Ricardo A. F.
 Machado, Dachamir Hotza e João C. D. da Costa

Graphical Abstract

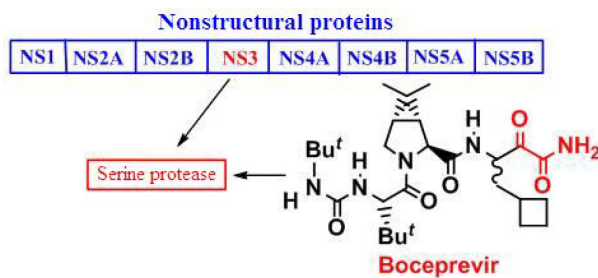
Mixed ionic and electronic conducting (MIEC) ceramic membranes are a potential application in clean energy delivery due to high selectivity for O₂ separation and the lowest efficiency losses when compared with conventional processes for O₂ separation.



- 308 Proteases virais: importantes alvos terapêuticos de compostos
 peptidomiméticos
 Estela M. F. Muri

Graphical Abstract

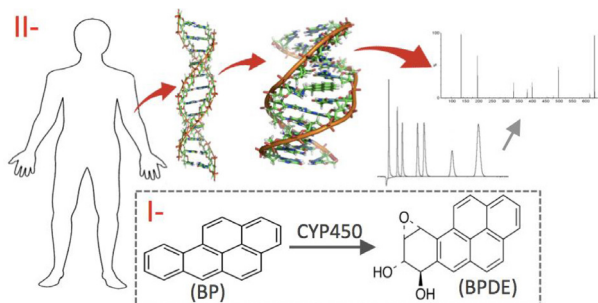
A review on design and synthesis of peptidomimetic compounds designed to act as inhibitors of serine and aspartyl proteases of Dengue, Hepatitis C and AIDS virus.



- 317 A importância da determinação analítica de intermediários
 reativos e de seus produtos de reações com biomacromolé-
 culas: uma mini revisão
 Eline S. Gonçalves, Juliana M. B. da Silva, Thelma Pavesi
 e Josino C. Moreira

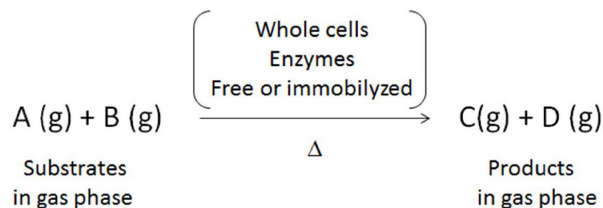
Graphical Abstract

I-After human exposure to chemical carcinogens such as benzo[a]pyrene (BP), enzymes available in the cytochrome P450 (CYP450) metabolizes them in products such as benzo[a]pyrene diol epoxide (BPDE). II- BPDE metabolic can react with DNA producing adducts that can be used as indicator of cancer's susceptibility.



323 Biocatálise heterogênea em fase sólido/gás: princípios e aplicações

Victor H. Perez, Samyra I. S. Boeno, Patrícia R. Ferreira, Everson A. Miranda e Gustavo P. Valença

**Graphical Abstract**

Substrates in gas phase are converted in gaseous products by enzymatic way using biocatalysts (whole cells or enzymes) free or immobilized.

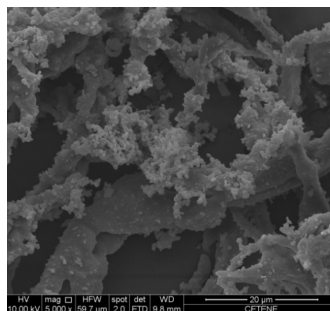
Nota Técnica

331 Nanopartículas de poli-hidroxibutirato-co-valerato como suporte para a imobilização da lipase de *Candida antarctica* fração B

Ilizandra A. Fernandes, Nádia L. D. Nyari, José V. de Oliveira, Elisandra Rigo, M^a Cristiane M. de Souza, Luciana R. B. Gonçalves, Sibele B. C. Pergher e Débora de Oliveira

Graphical Abstract

The immobilization of *Candida antarctica* B lipase using nanoparticles of poly-hydroxybutyrate-co-valerate (PHBV) as support was made and tested for esterification reaction of geraniol and oleic acid. The derivative was used without significant loss of activity for 4 successive cycles.



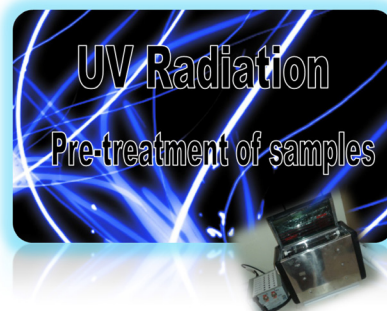
Time (h)	Residual Activity (%)		
	40 °C	60 °C	80 °C
0	100	100	100
1	100	82	100
3	100	80	100
21	100	67	54

337 Aplicação da radiação ultravioleta como forma de contribuição para a Química Verde e construção de um reator fotoquímico alternativo e de baixo custo, para pré-tratamento de amostras

Marcos M. Gouvêa, Glayce S. Lima, Adalberto A. Silva Neto, Annibal D. Pereira Netto e Flávia F. de C. Marques

Graphical Abstract

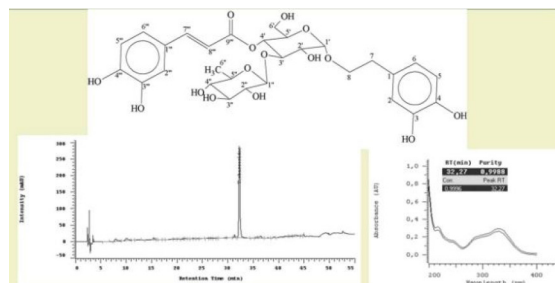
The main applications of UV radiation and the construction of an alternative and low-cost photochemical reactor to be used for the pretreatment of samples in the laboratory.

344 Isolamento do verbacosídeo e validação de método analítico para padronização do extrato bruto das partes aéreas de *Buddleja stachyoides* Cham. & Schltdl. (Scrophulariaceae)

Daniella M. S. de Oliveira, Marilis D. Miguel, Milena Kalegari, Obdúlio G. Miguel e Thais F. Moreira

Graphical Abstract

Development and validation of method for determination of verbacoside in alcoholic crude extract of the aerial parts of *Buddleja stachyoides* Cham. & Schltdl. (Scrophulariaceae).

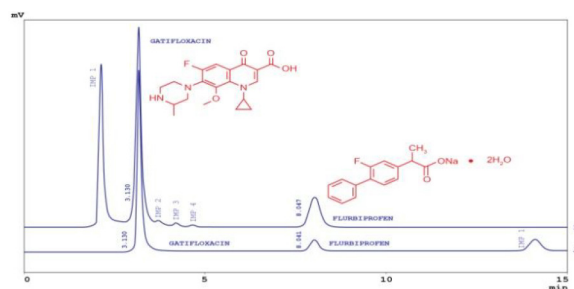


- 349 Stability-indicating RP-HPLC method for simultaneous determination of gatifloxacin and flurbiprofen in binary combination

Islam U. Khan, Syed N. Razzaq, Irfana Mariam, Muhammad Ashfaq and Syed S. Razzaq

Graphical Abstract

A stability indicating RP-HPLC method for the simultaneous determination of Gatifloxacin, Flurbiprofen and stress induced degradation products/impurities in pharmaceutical formulations, human serum and urine is described.



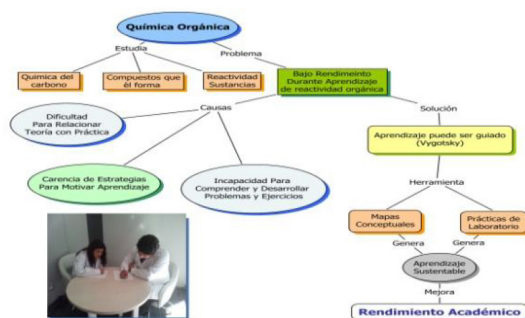
Educação

- 355 Mapas conceptuales como herramienta pedagógica en la enseñanza de la Química Orgánica

Francisco J. C. Urrutia, Carlos M. C. Díaz y Leontina del C. L. Santibáñez

Graphical Abstract

The present work demonstrates that the use of concept maps generates a sustainable learning which improves academic performance in learning reactivity in organic chemistry.



- 361 Software para simulação de mecanismo de supressão da luminescência: modelo cinético de Stern-Volmer

Lauro C. Dias Júnior e João B. Marques Novo

Graphical Abstract

Stern-Volmer kinetic equation: τ_0 and τ are, respectively, the excited state lifetime of a luminophore in the absence and presence of a luminescence quencher, $[Q]$ is the concentration of the quencher, k_q and K_{SV} are, respectively, the true quenching and Stern-Volmer constants.

$$\frac{\tau_0}{\tau} = 1 + K_{SV} \cdot [Q]$$

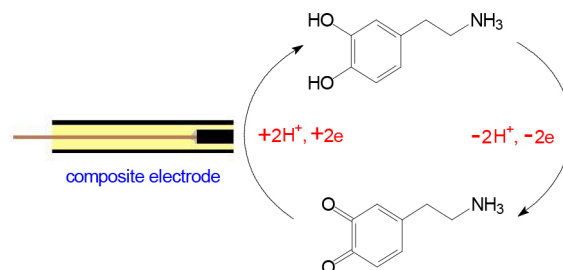
$$K_{SV} = k_q \cdot \tau_0$$

- 367 Eletrodo composto à base de grafite-Araldite®: aplicações didáticas – Parte II

Carolina M^a F. Calixto, Sidney X. dos Santos e Éder T. G. Cavalheiro

Graphical Abstract

The reversible oxidation/reduction of the neurotransmitter dopamine at a graphite/commercial epoxy resin composite electrode is used in teaching experiments to demonstrate principles of electroanalysis.



- 373 Ressonância: desenvolvimento, utilização e avaliação de um software educacional

José N. da Silva Júnior, Francisco G. Barbosa, Antonio J. M. Leite Junior e Valeska M. Eduardo

Graphical Abstract

The figure illustrates the educational software being accessed on a computer, from which structures emerge in different forms of visualization, as an example of what the software provides the user, among other things.



Assuntos Gerais

- 377 Perfil dos bolsistas PQ da área de Química baseado na Plataforma Lattes

Alexandre D. Alves, Horacio H. Yanasse e Nei Y. Soma

Graphical Abstract

This Graphical Abstract gives the most important keywords in the Periodical Table format that summarizes how we combine different information public data from the Brazilian Chemistry area.

