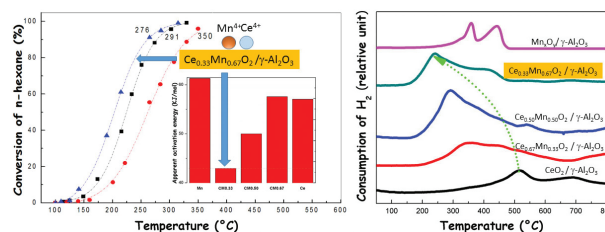


- 391 $\text{Ce}_{0.33}\text{Mn}_{0.67}\text{O}_2$ catalysts supported over $\gamma\text{-Al}_2\text{O}_3$ prepared by modified redox-coprecipitation methods for n-hexane combustion

Jesus Rojas Quispe, Romulo Cruz, Rosario S. Kou and Gino Picasso

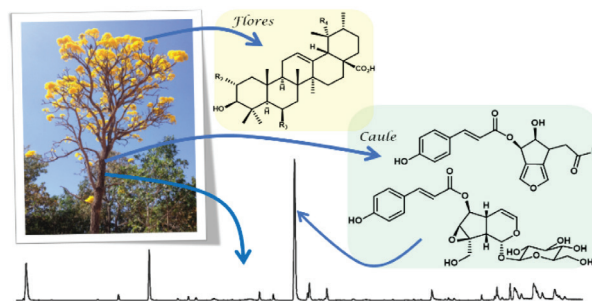
Alumina-supported $\text{Ce}_{0.33}\text{Mn}_{0.67}\text{O}_2$ achieved a total combustion of n-hexane at a lower temperature than did the bulk sample with the same metallic surface density, probably due to the interaction of Ce^{4+} with Mn^{4+} species, which led to an active phase with easy reducibility and labile oxygen.



- 399 Iridoides, triterpenos e outros constituintes das cascas do caule e flores de *Tabebuia caraiba* Bignoniaceae

Aloízio de O. Soares, Caroline Tieppo, Luzinátia R. Soares, Joaquim Corsino, Alex F. Souza, Fernanda R. Garcez e Walmir S. Garcez

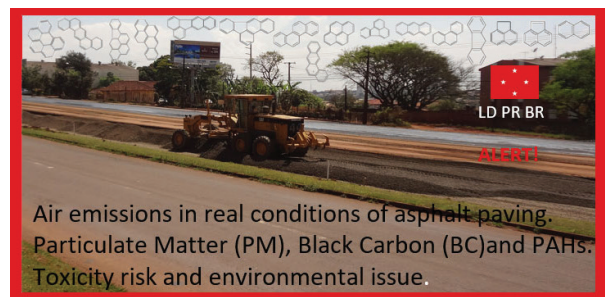
The phytochemical study of *Tabebuia caraiba* led to the isolation of triterpenes and iridoids. The chemical profile by HPLC/MS showed the presence of other constituents, however, most of the isolated compounds could not be detected.



- 404 Emissões de poluentes atmosféricos em condições reais de pavimentação asfáltica: material particulado, black carbon e hidrocarbonetos policíclicos aromáticos

Victor P. Piracelli, Ismael R. Amador, Fabio C. Sabino, Jurandir P. Pinto, Carlos R. Silva Jr. e Maria Cristina Solci

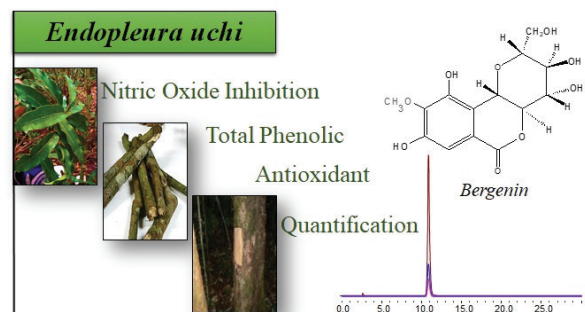
This article access air emissions in two real asphalt paving occasions at the Londrina City. Particulate Matter (PM), Black Carbon (BC) and Polycyclic Aromatic Hydrocarbons (PAHs) are discussed. Health, environment and climate change are related.



- 413 Quantification of bergenin, antioxidant activity and nitric oxide inhibition from bark, leaf and twig of *Endopleura uchi*

Magno P. Muniz, Sergio M. Nunomura, Emerson S. Lima, Arleilson S. Lima, Patrícia D. O. de Almeida and Rita C. S. Nunomura

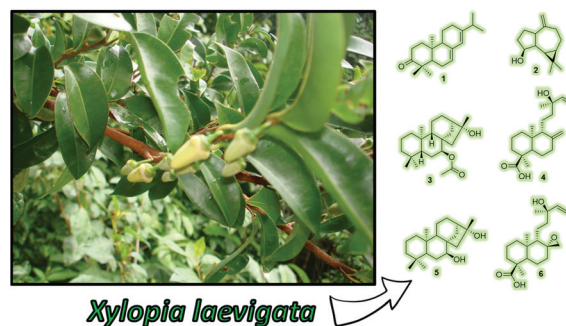
Articles available about *Endopleura uchi* species is mainly address bark studies. For this work, we report the first chemical and biological experiments using the leaf and twig of the species.



419 Diversity of the diterpenes in the leaves of *Xylopia laevigata* (Annonaceae) and their cytotoxicities

Emmanoel V. Costa, Marília F. C. Sampaio, Leociley R. A. Menezes, Livia M. Dutra, Cinara O. S. Costa, Maria Lúcia B. Pinheiro, Felipe M. A. da Silva, Milena B. P. Soares, Daniel P. Bezerra, Andersson Barison and Hector H. F. Koolen

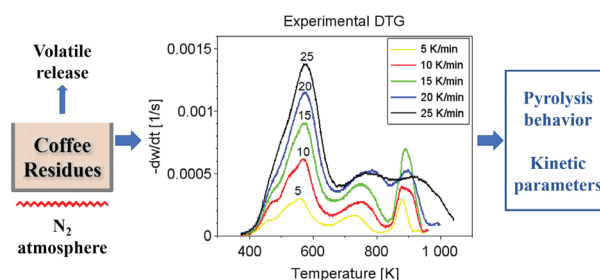
Six known terpenes, five diterpenes and one sesquiterpene were isolated from the leaves of *Xylopia laevigata* (Annonaceae). Additionally, their cytotoxicities were assessed by the Alamar blue assay. The isolated diterpenes are described here for the first time for *X. laevigata*.



426 Kinetic parameters study for the slow pyrolysis of coffee residues based on thermogravimetric analysis

Fernando L. Tibola, Tiago J. P. de Oliveira, Daniel A. Cerqueira, Carlos H. Ataíde and Cássia R. Cardoso

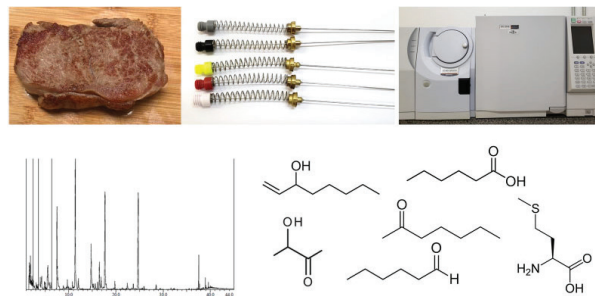
Kinetic parameters for coffee husks pyrolysis were determined using thermogravimetric analyses and different kinetic models. The presence of six different reactions was identified using the model of parallel and independent reactions. This is the first work using this model for coffee husks pyrolysis.



435 Optimization of extraction conditions of volatile compounds of roasted beef by solid-phase microextraction

Vanessa C. Francisco, Larissa C. Almeida, Stanislaw Bogusz Junior, João Oiano Neto and Renata T. Nassu

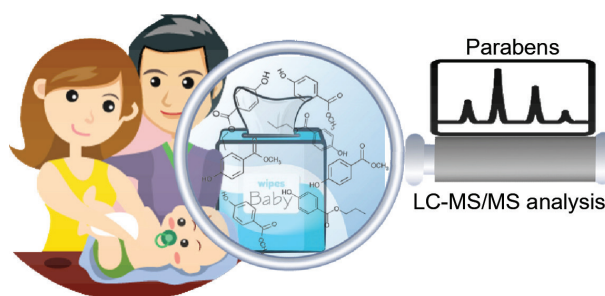
The optimized conditions established in this study will help to extract the largest number of volatile compounds in roasted beef.



442 A survey of parabens in commercial baby wipes from Brazil and estimation of daily exposure

Bruno A. Rocha, Mariana Z. Bocato, Elder F. Latorraca, João P. B. Ximenez and Fernando Barbosa Jr.

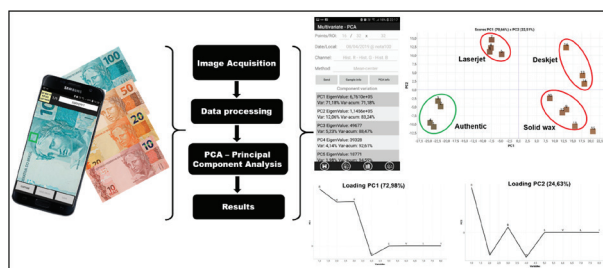
High concentrations of parabens were found in Brazilian baby wet wipes.



447 Classificando cédulas brasileiras (R\$) usando análise de imagem por *smartphone*

Bruno V. Vittorazzi, Rayana A. Costa, Larissa M. Coelho, Marsele M. Isidoro, Kássio M. G. Lima, Paulo R. Filgueiras e Wanderson Romão

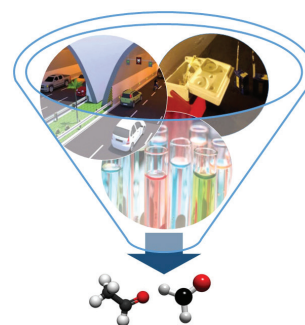
Authenticity of Brazilian banknotes can be evaluated using smartphone application associated with chemometric methods by digital imaging.



455 Fatores de emissão de compostos carbonílicos medidos em um túnel do Rio de Janeiro, Brasil, em condições reais de dirigibilidade

Jose C. S. Almeida, Andre L. do P. Braga, Leonardo Bastos, Graciela Arbilla e Eduardo M. Martins

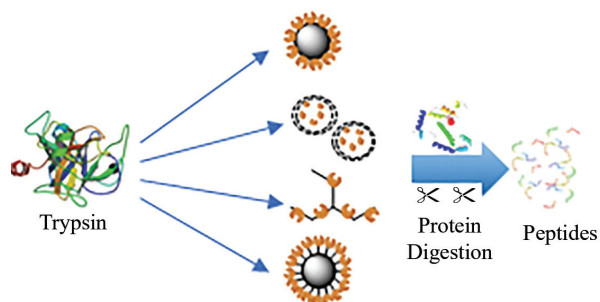
Samples were collected in two sites inside Rebouças tunnel to calculate the emission factors of urban vehicles in real conditions.



Revisão

463 Imobilização enzimática: conceito e efeitos na proteólise

Izadora L. Furlani, Bruno S. Amaral, Regina V. Oliveira e Quezia B. Cass



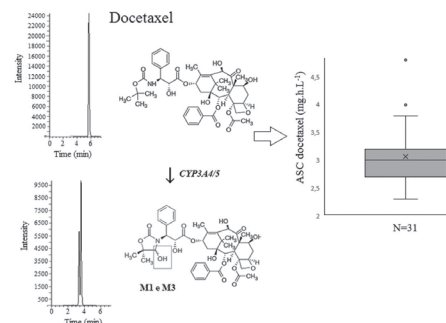
Application of immobilized trypsin in different forms and supports for modulation of proteomic assays.

Nota Técnica

474 Determinação de docetaxel e metabólitos em plasma por UPLC-MS/MS: desenvolvimento de metodologia analítica e aplicação clínica

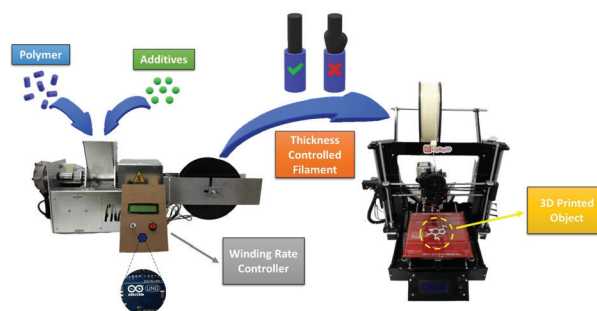
Suziane Raymundo, Victória V. Müller, Mariane Tegner, Andiara Artmann, Natália B. Andriguetti, Gilberto Schwartzmann, Rafael Linden e Marina V. Antunes

A sensitive UPLC-MS/MS method for the determination of Docetaxel and metabolites (M1+M3) in human plasma samples was developed and validated. The method employs a liquid-liquid extraction and a reversed-phase separation with electrospray ionization.



- 480 Construção de equipamento de baixo custo para enrolar filamentos de impressoras 3D

Diego C. de Andrade, Thiago V. B. Ferraz, André L. B. Formiga e Juliano A. Bonacin

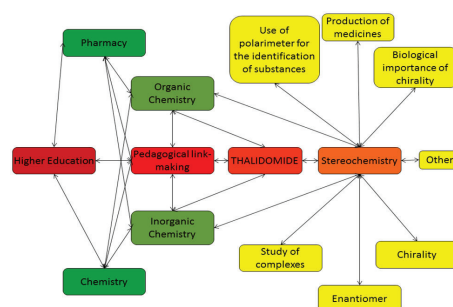


Construction of an accessory coupled to the extruder for winding the filaments of 3D printer.

Educação

- 486 O uso do caso talidomida auxiliando na construção de significados em aulas de Química do Ensino Superior

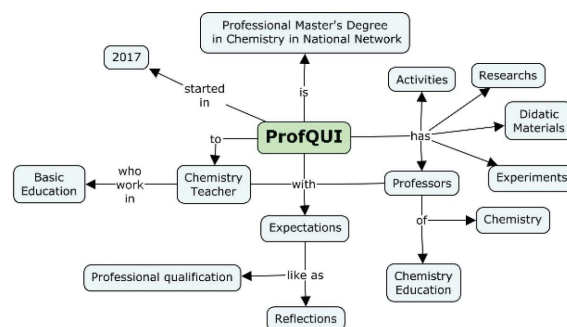
Leandro A. de Oliveira e Ana L. de Quadros



Pedagogical link-making among chemical concepts and a historical fact involving these concepts can contribute significantly to the engagement of students with the content and, as a result, with knowledge.

- 493 Desafios e perspectivas atuais na formação do professor de química: expectativas sobre o mestrado profissional em química em rede nacional (PROFQUI)

Gláucia R. Gonzaga, Daniel C. de Paiva e Marcelo L. Eichler

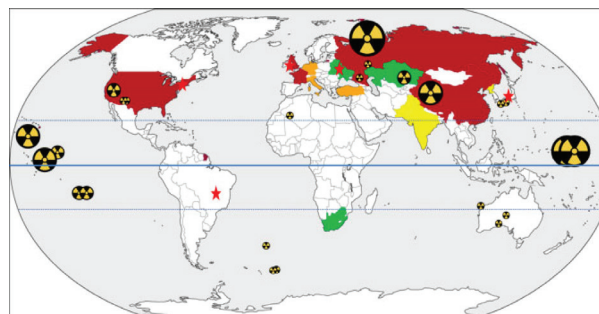


The PROFQUI was projected for high school teachers of chemistry. The objectives are to raise difficulties and propose perspectives for chemistry teaching based on the elaboration of innovative educational products for the different school contexts.

Assuntos Gerais

- 506 Radionuclídeos como marcadores de um novo tempo: o Antropoceno

Cleyton M. da Silva, Graciela Arbilla, Wilson Machado e Ricardo Soares



Anthropocene: the Atomic Age.

- 515 Epidemiologia do esgoto como estratégia para monitoramento comunitário, mapeamento de focos emergentes e elaboração de sistemas de alerta rápido para COVID-19

Fernando F. Sodré, Cristina C. S. Brandão, Carla S. Vizzotto e Adriano O. Maldaner

Wastewater-based epidemiology is an emerging and relatively inexpensive strategy for monitoring contagion curves in near real time and creating early warning systems, especially in regions where clinical trials are scarce.



Errata

- 520 Errata

Analysis of the baseline drift artifact in Hadamard transform separation techniques

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