

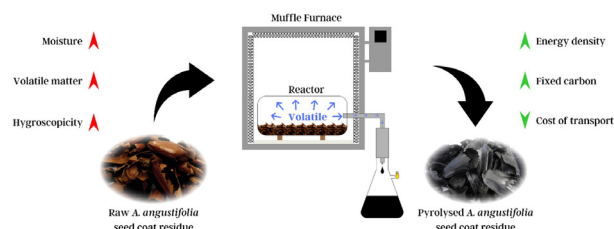
Artigos/Articles

- 1183 An alternative energy generation from charcoal produced from Brazilian pine (*Araucaria angustifolia* (Bert.) O. Ktze) seed residues

Danielle A. Sampaio, Alfredo J. dos Santos Junior, Ananias F. Dias Júnior and Roberto C. C. Lelis

<http://dx.doi.org/10.21577/0100-4042.20170924>

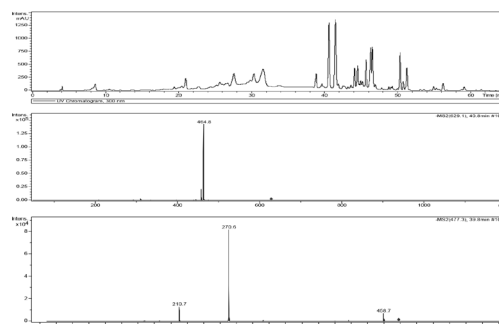
Residues from the seeds of Brazilian pine (*A. angustifolia*) were submitted to the pyrolysis process. The charcoal obtained for seed residues had desirable energetic properties; such as higher fixed carbon and energy density, and its use is promising for bioenergy in the Atlantic Forest.



- 1189 Chemical profile and antioxidant activity of geopropolis from *Melipona subnitida* collected inside and outside the nest
Joselena M. Ferreira, Giuseppina Negri, M^a Luiza F. Salatino, Dejair Message and Antonio Salatino

<http://dx.doi.org/10.21577/0100-4042.20170928>

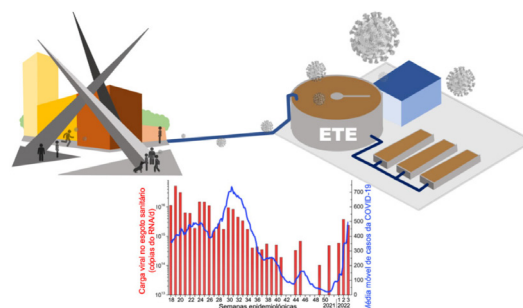
Chromatography profile of ethanolic extract from geopropolis of *M. subnitida* collected inside of the nest, at UV - 300. (-)-ESI-MS/MS spectra of 1-O-Coumaroyl-di-O-galloyl hexose and 1-O-Coumaroyl-2-O-galloyl hexose.



- 1197 Monitoramento da carga viral de SARS-CoV-2 em águas residuais na cidade de Goiânia: epidemiologia baseada em esgoto e um sistema de alerta precoce para COVID-19
Geovana de M. Mendes, Paulo F. N. Estrela, Marcio N. de Souza Junior, Núbia N. de Brito, Andréa F. Arruda, Matheus R. Augusto, Ieda C. M. Claro, Adriana F. A. Duran, Aline D. Cabral, Rodrigo de F. Bueno e Gabriela R. M. Duarte

<http://dx.doi.org/10.21577/0100-4042.20170933>

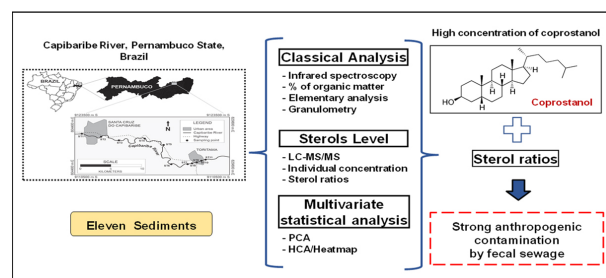
The study aimed to monitor SARS-CoV-2 RNA in wastewater in Goiânia to estimate the viral prevalence in the population and anticipate clinical cases.



- 1205 Evaluation of sediment contamination by urban sewage in a stretch of Capibaribe River, Pernambuco, Brazil
Bruna R. de S. Gomes, Rebeca dos S. França, Alex S. Moraes, Giovana A. Bataglion and Jandyson M. Santos

<http://dx.doi.org/10.21577/0100-4042.20170934>

The present study carried out a comprehensive characterization of sediments from the Capibaribe River using classical and sterol analyses in order to verify the level of environmental contamination.

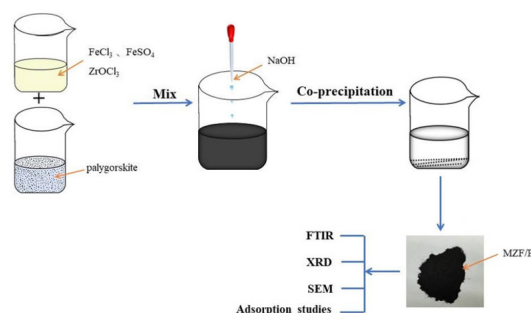


- 1214 Preparation and performance of magnetic zirconium-iron oxide nanoparticles loaded on palygorskite in the adsorption of phosphate from water

Xiaoshuang Song, Yanling Hao, Qiqi Gao and Long Cheng

<http://dx.doi.org/10.21577/0100-4042.20170935>

The adsorbent MZF/P was prepared by a facile method and it exhibited relatively efficient phosphate adsorption performance, was easy to regenerate and could be effectively reused.

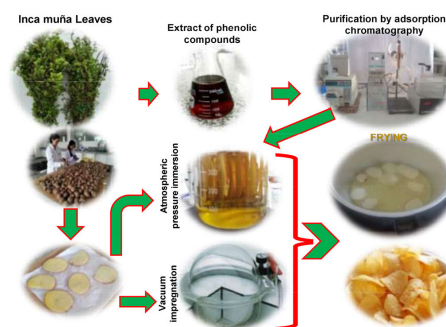


- 1223 Mitigación de la formación de acrilamida en papas fritas tipo chips mediante la adición de antioxidantes fenólicos de Inca muña (*Clinopodium bolivianum*)

Marianella Zegarra, Ana Aguilar-Galvez, Rosana Chirinos, Diego García-Ríos, Marienela Calsin, Romina Pedreschi y David Campos

<http://dx.doi.org/10.21577/0100-4042.20170937>

Phenolic antioxidants obtained from muña Inca leaves mitigate acrylamide formation in potato chips. The highest levels of mitigation (67.4%) were obtained with vacuum impregnation.

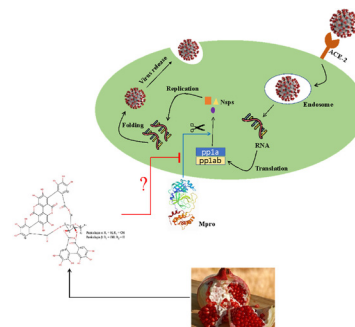


- 1230 *In silico* prediction of inhibitory potential of a punicalagin β -anomer against SARS-COV-2 main protease (M^{pro})

Norberto Monteiro, Vitória Monteiro, Lorena Lima, Anna Karolline and Richele Machado

<http://dx.doi.org/10.21577/0100-4042.20170938>

Inhibitory effect of the punicalagin anomers against SARS-COV-2 main protease (M^{pro}).

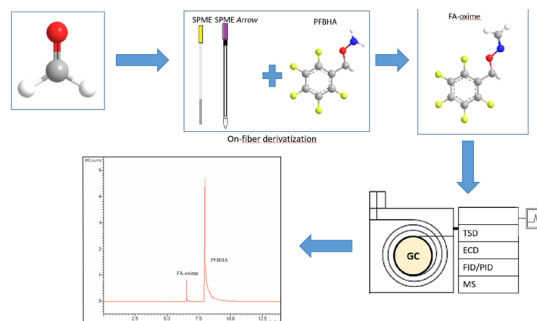


- 1236 Innovative gas chromatographic determination of formaldehyde by miniaturized extraction and on-fiber derivatization, via SPME and SPME Arrow

Stefano Dugheri, Giovanni Cappelli, Jacopo Ceccarelli, Niccolò Fanfani, Lucia Trevisani, Donato Squillaci, Elisabetta Bualetti, Riccardo Gori, Nicola Mucci and Giulio Arcangeli

<http://dx.doi.org/10.21577/0100-4042.20170939>

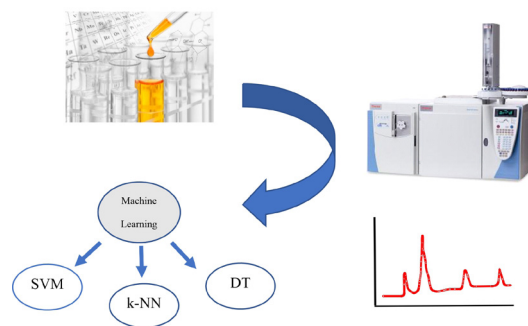
This work proposes an innovative fully-automated application of headspace solid-phase microextraction (SPME) with on-fiber derivatization for the analysis of airborne FA emitted from liquid solutions or solid manufactures, in static mode, via gas chromatography-mass spectrometry.



- 1245 Identifying olive oil fraud and adulteration using machine learning algorithms

Yasin Yakar and Kerim Karadağ

<http://dx.doi.org/10.21577/0100-4042.20170948>



The adulteration of olive oils can be detected with machine learning algorithms.

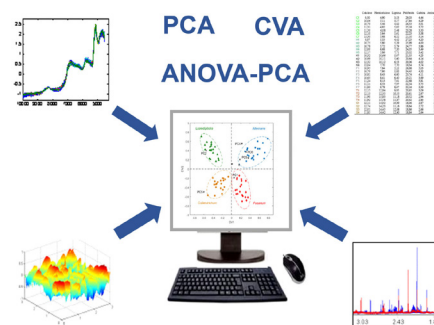
Revisão/Review

- 1251 Quimiometria III – Revisitando a análise exploratória dos dados multivariados

Márcia M. C. Ferreira

<http://dx.doi.org/10.21577/0100-4042.20170910>

Three methods for pattern recognition, used as exploratory data analysis, are revisited: PCA, Fisher's canonical variate analysis and ANOVA-PCA. The mathematical bases of the three methods are discussed as well as examples are presented.

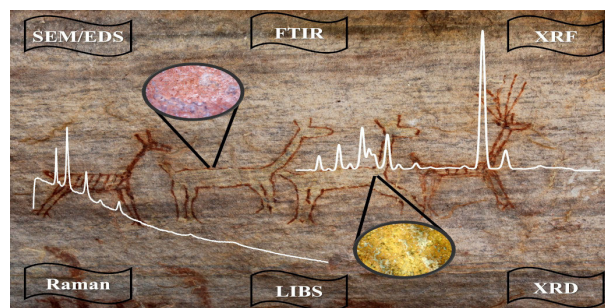


- 1265 A química analítica aplicada aos estudos de pigmentos rupestres: uma revisão

Benedito B. Farias Filho, M^a Conceição S. M. Lage, Ana Luisa M. L. do Nascimento, Iasmin M^a R. de S. Vieira, Danyel D. M. de Almeida e Wilkins O. de Barros

<http://dx.doi.org/10.21577/0100-4042.20170929>

Approaches to analytical techniques employed for the study of rock art are discussed in this review.



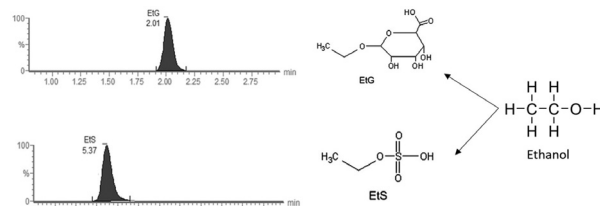
Nota Técnica/Technical Notes

- 1278 Determinação de etil-glicuronídeo e etil-sulfato em sangue por UPLC-MS/MS: aplicação clínica em vítimas de trauma

Isabela R. Ott, Mariane Tegner, Fernando E. Gerbase, Octaviano P. Z. Sagrilo, Rafael Linden e Marina V. Antunes

<http://dx.doi.org/10.21577/0100-4042.20170926>

We present a UPLC-MS/MS method for the quantification of the ethanol metabolites ethyl-glucuronide (EtG) and ethyl-sulfate (EtS) in blood samples. EtG and EtS blood levels from trauma patients with positive alcoholism were 0.25 to 14.11 $\mu\text{g mL}^{-1}$ and 0.13 to 5.53 $\mu\text{g mL}^{-1}$.

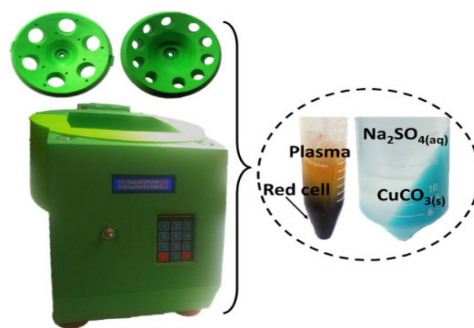


- 1284 Design, development, and implementation of 3D-printed polylactic acid centrifuge rotors for laboratory-scale applications

Luis F. Aiquipa Moreno, Alexander G. Guillén Vasquez, Elizabeth C. Pastrana and Roxana Y. Pastrana

<http://dx.doi.org/10.21577/0100-4042.20170936>

Low-cost 3D printed centrifuge.



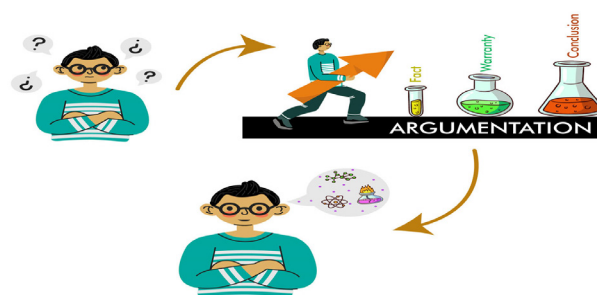
Educação/Education

- 1289 Argumentación desde la enseñanza de las soluciones químicas

Edgar E. Vargas, Gina J. León y Leonardo F. Martínez

<http://dx.doi.org/10.21577/0100-4042.20170940>

The research highlights the importance of working argumentative processes at different levels of academic training, with the purpose of developing structured arguments as proposed by Toulmin.

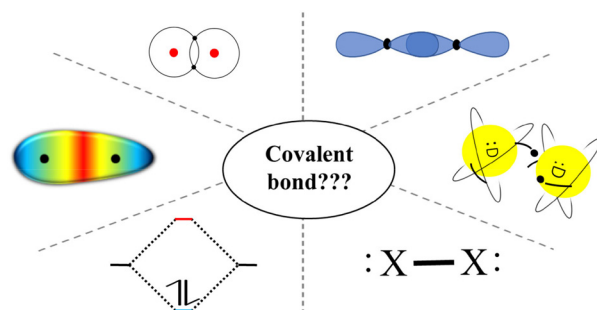


- 1296 Identifying conceptions of the covalent bond: an analysis from a systematic review

Ricardo S. Baltieri, Marco A. Cebim and Amadeu M. Bego

<http://dx.doi.org/10.21577/0100-4042.20170941>

The Graphical Abstract shows different types of covalent bond representations and conceptions, since atoms that are happy to share the electrons, through electrons like dots and lines, and using a map of charge density.

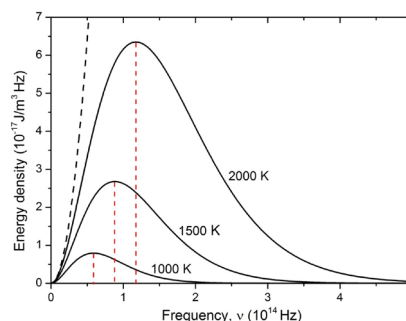


- 1303 Radiação térmica e a fórmula de Planck

Lucas M. A. Gontijo e Clóves G. Rodrigues

<http://dx.doi.org/10.21577/0100-4042.20170942>

Energy density versus frequency for three temperature values. The dashed curve was obtained using the Rayleigh-Jeans equation for a temperature of 2000 K.

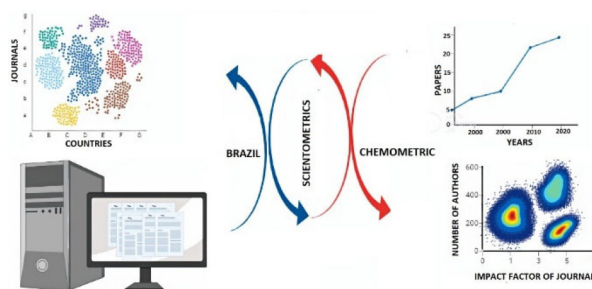


Assuntos Gerais/General Subject

1315 Perfil cientométrico da Quimiometria no Brasil

Germano Veras, Vitor D. Alves, Hilthon A. Ramos, Mirelly Gomes, Lêda Figueiredo e Emily V. S. Matias

<http://dx.doi.org/10.21577/0100-4042.20170930>



Cientometry of the chemometrics in Brazil: scientific production, human resource development and maturity stage of the area.

Errata/Erratum

1322 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

<http://dx.doi.org/10.21577/0100-4042.20170965>

Addition related to the article published in the *Quim. Nova*, Vol. 43, No. 4, 413-418, 2020
(<https://dx.doi.org/10.21577/0100-4042.20170514>)

