

Carta ao Editor/Letter to the Editor

- 1 The Franco-Brazilian network on natural products (FB2NP): a new network promoting cooperation and exchanges in natural products research

Jackson R. G. da S. Almeida, Raphaël Grougnet, Lucindo J. Quintans Jr., Sylvie Chevalier, Marc Feuilloley, Thomas Robert, Stéphane Bach, Raimundo G. de Oliveira Jr., Valérie Thiéry, Jean-Pierre Bazureau, Florence Mongin, Marina Kritsanida, Vincent Sol, Vicente C. de O. Costa, Nathalie Bourgougnon, Pascal Marchand and Laurent Picot

<http://dx.doi.org/10.21577/0100-4042.20170847>

Artigos/Articles

- 4 Exergy and emergy: complementary tools for assessing the environmental sustainability use of biosolids generated in wastewater-treatment plant for energy-production

Natalia A. Cano, Santiago Céspedes-Zuluaga, Camilo Guerrero-Martin and Darío Gallego

<http://dx.doi.org/10.21577/0100-4042.20170806>

The transformation of by-products of processes is of interest for the increase of the efficiency. In addition, the concept of sustainability applied to recovery processes allows retaining a product within a supply chain, giving a longer useful life to available resources. The concepts of exergy complementing the energy concept, allows to have a broader prospect in the evaluation of processes. In this research, both concepts are applied to the use of residual biomass from a WWTP through gasification, where the recovery of all the streams involved is shown.

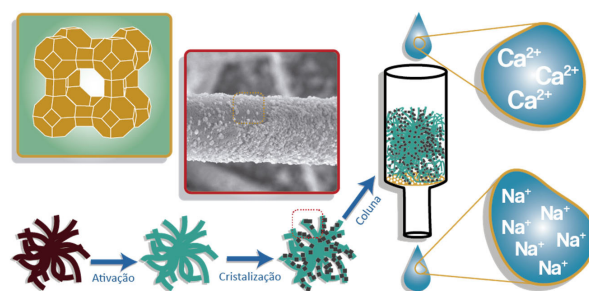


- 16 Zeólita NaA sintetizada sobre fibra de vidro como estratégia para otimização do abrandamento de águas duras

Edipo S. Oliveira, Conceição R. F. Alves, Antonia M. M. França, Ronaldo F. Nascimento, José M. Sasaki e Adonay R. Loiola

<http://dx.doi.org/10.21577/0100-4042.20170797>

Cost-effective zeolite A coated fiber glass is a promising alternative as water softener.

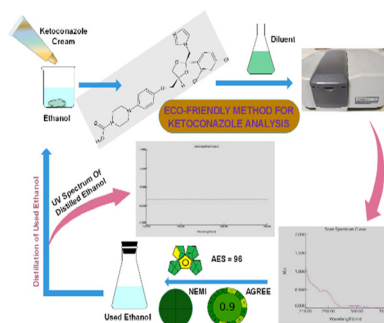


- 23 Eco-friendly multivariant green analytical technique for the estimation of ketoconazole by UV spectroscopy in bulk and cream formulation

Kanaka P. Kannaiah and Abimanyu Sugumaran

<http://dx.doi.org/10.21577/0100-4042.20170798>

The present study explored a simple and economical method for analyzing ketoconazole from the complex cream formulation by utilizing the green solvent with zero wastage and made the method more sustainable and easily adaptable for future use.

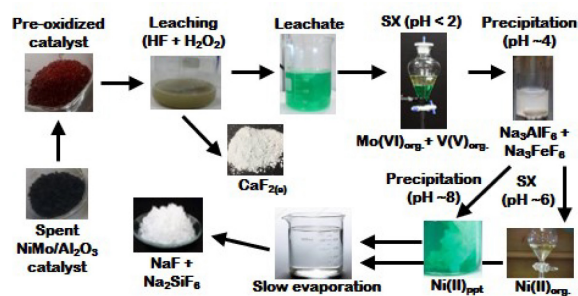


- 31 Processamento de catalisadores gastos de unidade de hidrodesulfurização profunda (*ultra-deep HDS*)

Carolina L. Quintanilha, Júlio C. Afonso, Rubens S. da Silva, Cláudio A. Vianna e José L. Mantovano

<http://dx.doi.org/10.21577/0100-4042.20170800>

Leaching of spent pre-oxidized NiMo/Al₂O₃ catalysts from ultra-deep hydrodesulfurization units in the presence of HF + H₂O₂ mixtures: recovery of the fluoride ion and valuable elements.

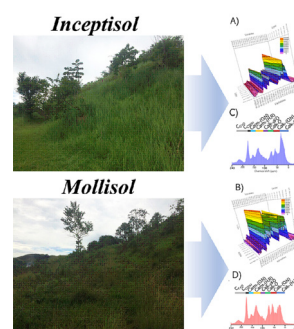


- 40 Spectroscopic techniques combined with chemometrics to study organic matter in tropical soils with different degrees of pedogenetic evolution

Octávio V. T. de Moura, Tadeu A. T. de Castro, Danielle de O. França, Orlando C. H. Tavares, Cristiane F. da Silva, Marcos G. Pereira and Andrés C. García

<http://dx.doi.org/10.21577/0100-4042.20170802>

In Inceptisol, organic carbon stabilization can be facilitated by hydrophobic interactions, whereas in Mollisol, different interaction sites can stabilize like proteinaceous compounds.

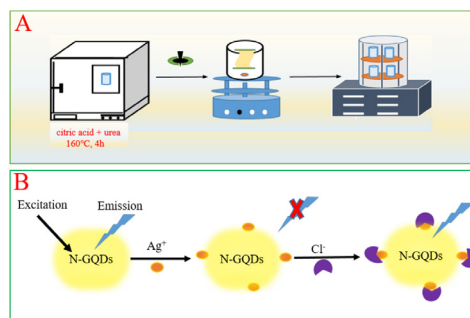


- 48 A novel fluorescence sensor for the detection of chloride ion in artificial sweat and environmental water with nitrogen-doped graphene quantum dots

Xuemei Fan, Shumin Wang, Zhejian Li, Ping Liu, Yimeng Wang, Qiangqiang Sun, Lingmin Yu and Xinhui Fan

<http://dx.doi.org/10.21577/0100-4042.20170801>

A novel fluorescence sensor for the detection of chloride ion was designed with Nitrogen-doped graphene quantum dots.



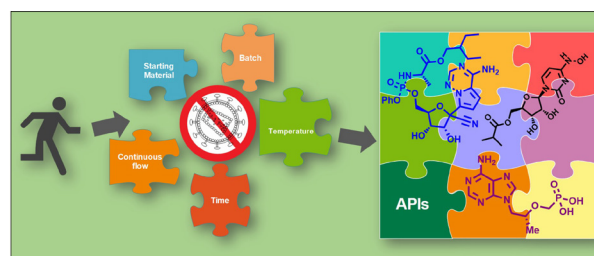
Revisão/Review

- 53 Avanços recentes na síntese do Remdesivir, Molnupiravir (EIDD-2801) e Tenofovir: moléculas promissoras no tratamento da COVID-19

Taniris C. Braga, Juliana A. dos Santos, Pedro P. de Castro e Giovanni W. Amarante

<http://dx.doi.org/10.21577/0100-4042.20170803>

An overview of the synthetic strategies and recent contributions towards the preparation of the antiviral drugs Remdesivir, Tenofovir and Molnupiravir, molecules with potential activity against Covid-19 virus, is hereby presented.

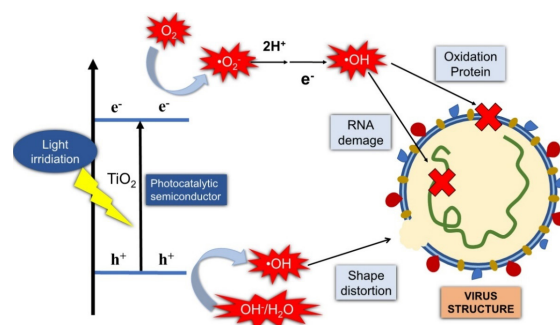


- 74 Challenges of TiO_2 -composite, as a visible active photocatalyst material for SARS-CoV-2 antiviral compared with the other viruses

Diana R. Eddy, Muhamad D. Permana, Annisa Lutfiah, Ateek R. Noviyanti, Yusi Deawati and Iman Rahayu

<http://dx.doi.org/10.21577/0100-4042.20170807>

The increase in the antiviral performance of this compound is further maximized by formulating TiO_2 -based composites and doping it to reduce the bandgap. This review aims to determine the challenges of TiO_2 -based composite as a visible active photocatalyst material for SARS-CoV-2 antiviral.

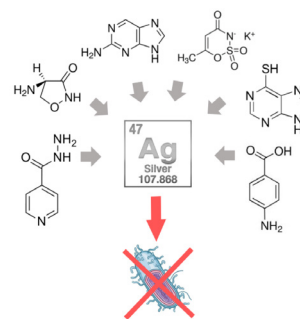


- 83 Silver complexes for tuberculosis treatment: a short review

Bruno T. Biagioni, Mauricio Cavicchioli and Antonio C. Massabni

<http://dx.doi.org/10.21577/0100-4042.20170812>

This paper is a literature review covering the last 10 years on research with Ag(I) complexes that showed activity against the tuberculosis bacillus.



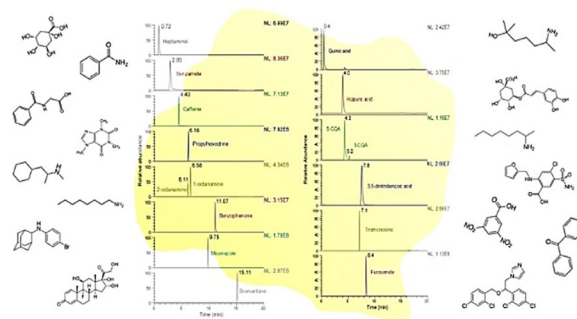
Nota Técnica/Technical Notes

- 89 Development and application of a test mixture for untargeted liquid chromatography-mass spectrometry analysis of urine samples

Clarisse L. Torres, Vinicius F. Sardela, Fernanda B. Scalco, Francisco R. de Aquino Neto and Rafael Garrett

<http://dx.doi.org/10.21577/0100-4042.20170796>

A test mixture was developed and applied to LC-MS untargeted metabolomics. Its use quickly indicated column degradation during sample analysis and that only visual inspection of pooled QC clustering in PCA does not guarantee reliable data.



- 97 Designing and fabrication of a low-cost dip-coater for rapid production of uniform thin films

David A. Castillo-Vilcatoma, Steven J. Loarte, Arturo A. Fernandez-Chillice, Elizabeth C. Pastrana and Roxana Y. Pastrana

<http://dx.doi.org/10.21577/0100-4042.20170805>

Dip-coater machine to produce high quality thin films.

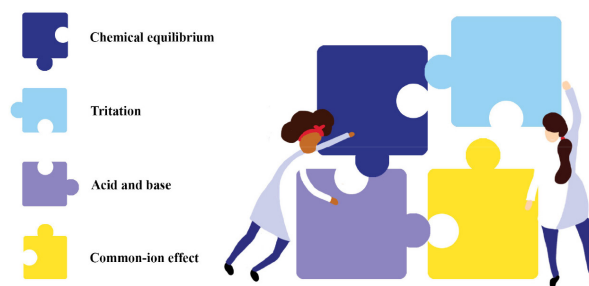


Educação/Education

- 101 Aprendizagem cooperativa e colaborativa no ensino de equilíbrio químico a calouros

Carolina Sotério, Daniel L. Teodoro e Salete L. Queiroz

<http://dx.doi.org/10.21577/0100-4042.20170809>



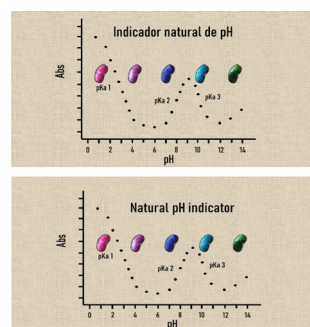
Cooperative and collaborative learning in the chemistry classroom.

- 113 Otimização da extração de antocianinas presentes no feijão-preto e impregnação do extrato em matriz polimérica natural para uso como indicador de pH

Chalder N. Nunes, Aline B. Jansen e Sueli P. Quináia

<http://dx.doi.org/10.21577/0100-4042.20170825>

Easily obtained from black beans, a natural pH indicator can be used to determine the acidity or basicity of aqueous solutions. The indicator had its pKa values determined and was also impregnated with paper and cotton for greater practicality.

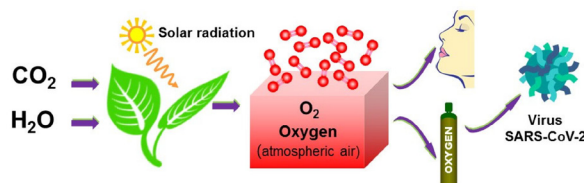


Assuntos Gerais/General Subject

- 121 Oxigênio no contexto da COVID-19: o que sabemos sobre a molécula que respiramos e o papel central da química

Bruna C. Cerqueira, Bruna R. Silva, Rafael Campos, Lourenço L. B. de Santana, Wilson A. Lopes, Luciana A. Silva, Rodrigo De Paula e Silvio Cunha

<http://dx.doi.org/10.21577/0100-4042.20170795>

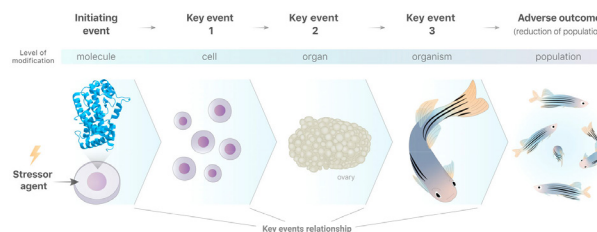


The role of chemistry in COVID-19 pandemic is highlighted through the medical oxygen utility in health, oxygen chemical characterization and its cycle in nature, industrial production, and how oxygen saturation level in blood is measured.

- 132 AOPs são o futuro da ecotoxicologia?

Paula Suares-Rocha, Gisela de A. Umbuzeiro

<http://dx.doi.org/10.21577/0100-4042.20170813>



An AOP can be defined as a set of key events, induced by a stressor agent at a molecular level, connected by relationships between these events, which will culminate in an adverse effect on an organism or a population.