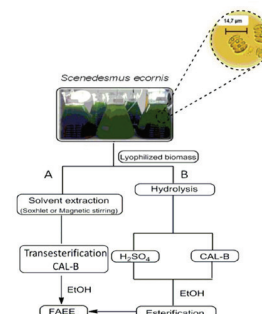


1 Fatty acid ethyl esters from microalgae of *Scenedesmus ecornis* by enzymatic and acid catalysis

Gabryelle F. de Almeida, Pedro H. F. de Araújo, Alexandro C. Florentino, Roberto M. Bezerra, José C. T. Carvalho, Silvia M. M. Faustino and Irlon M. Ferreira

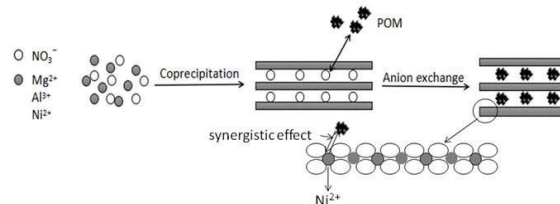
We identified palmitic, linoleic, oleic and stearic acids as the main constituents in the lipid extract from microalgae biomass present in the Amazonian ecosystem (Macapá-AP).



5 Oxidation of cyclohexanol on phosphotungstic acid anion intercalated layered double hydroxides with aqueous H_2O_2 as oxidant

Xueli Bai, Zhaoyang Bai, Dandan Xue, Huiyan Sun, Xin Huang, Yongxiang Zhao and Yue Zhang

The POM anion was successfully inserted by intercalated and nickel supported LDH laminate by Mg_2AlNi and Mg_3Al layered double hydroxide. The synergistic effect exists between the POMs and the nickel supported LDH laminate. Which lead to have a good catalytic performance in the oxidation of cyclohexanol.



10 Esterificação e transesterificação homogênea de óleos vegetais contendo alto teor de ácidos graxos livres

José S. C. Vieira, Taís L. Sousa, Luzilene S. Rosas, Ana L. Lima, Célia M. Ronconi e Cláudio J. A. Mota

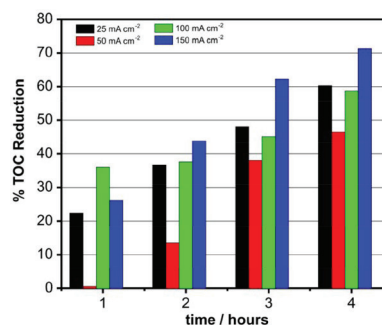
Schematic diagram showing the homogeneous esterification and transesterification steps of Brazilian nut oil (*Bertholletia excelsa*).



17 Tratamento eletroquímico de efluente da produção de biodiesel usando um eletrodo do tipo ADE: $Ti/IrO_2-Nb_2O_5$

Carlos H. M. Fernandes, Marcelo M. Yamasaki, Fernando L. Silva, Vanessa M. Vasconcelos, Robson S. Rocha, Marcos R. V. Lanza, Marilza Castilho, Evandro L. Dall'Óglio e Ailton J. Terezo

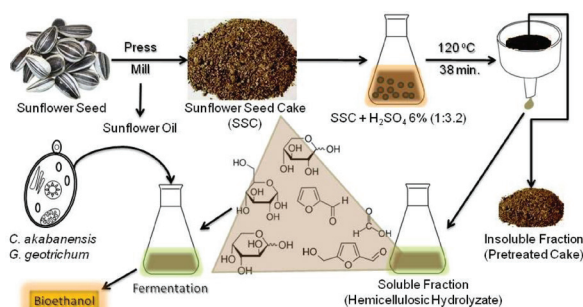
Reduction of the total organic carbon (%TOC) of the Biodiesel wastewater by the electrochemical treatments.



- 23 Fermentação alcoólica de hidrolisado hemicelulósico de torta de girassol por *Galactomyces geotrichum* UFVJM-R10 e *Candida akabensis* UFVJM-R131

Jéssica P. de Matos, Kelton R. de Souza, Alexandre S. dos Santos e Lílian de A. Pantoja

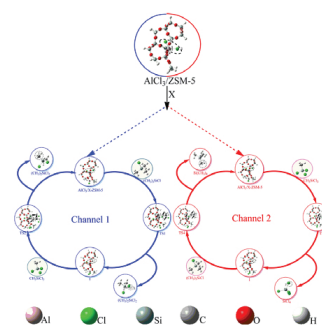
The process represented above show the chemical hydrolysis of the hemicellulose fraction from sunflower seed cake and its conversion into ethanol through the use of unconventional xylose fermenting yeasts.



- 30 Calculation of catalytic reactivity for preparing dichloro-dimethylsilane utilizing pre- and post-modified 24T $\text{AlCl}_3/\text{ZSM-5}$

Wenyuan Xu, Mei Yang, Xiaoyan Li, Shaoming Yang, Xi Chen, Zhili Fang, Xiaoxin Wu and Sanguo Hong

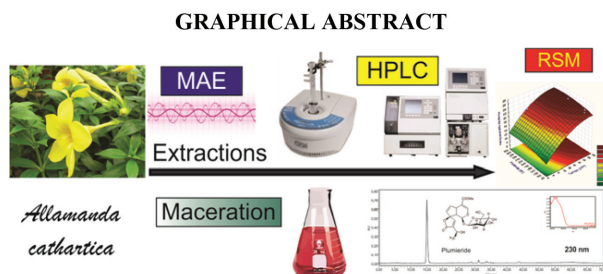
The reaction mechanism of disproportionating methyltrichlorosilane and trimethylchlorosilane are catalyzed by 24T cluster $\text{AlCl}_3/\text{X-ZSM-5}$ (X stands for pre- and post-modified by $(\text{AlCl}_2)^+$, $(\text{BCl}_2)^+$).



- 36 Development and optimization of a microwave-assisted extraction of plumieride from *Allamanda cathartica* L. flowers

Tiago J. Bonomini, Jaqueline A. Góes, Marina da S. Machado, Ruth M. L. da Silva and Angela Malheiros

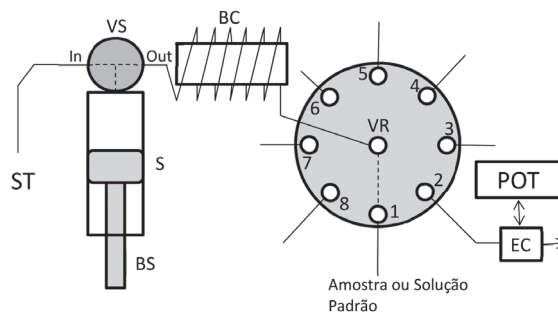
Plumieride was isolated from *A. cathartica* flowers with higher yields with MAE. A simple and accurate HPLC method has been validated to quantify plumieride. Yields of plumieride obtained by MAE and conventional extraction were compared.



- 43 Análise por injeção sequencial com detecção por voltametria de onda quadrada para determinação de As(III) em amostras de águas usando eletrodo de ouro

Fernando H. do Nascimento e Jorge C. Masini

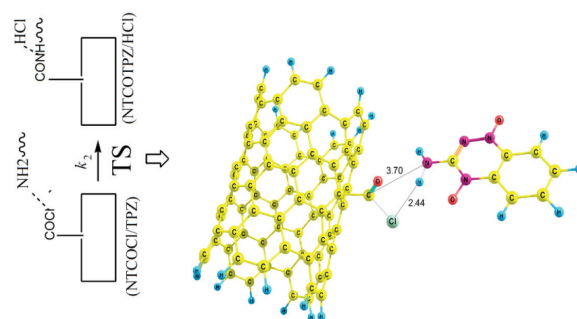
A sequential injection method was developed for determination of As(III) in waters using gold electrodes. The sampling throughput was 20 analyses h^{-1} with LOQ of $5.2 \mu\text{g L}^{-1}$, a value 2-fold lower than that allowed by World Health Organization ($10 \mu\text{g L}^{-1}$).



- 49 DFT study on the mechanistic, energetic and structural aspects of adsorption of tirapazamine onto pristine and functionalized carbon nanotubes

Sadaf Avarand, Ali Morsali, Mohammad M. Heravi and S. Ali Beyramabadi

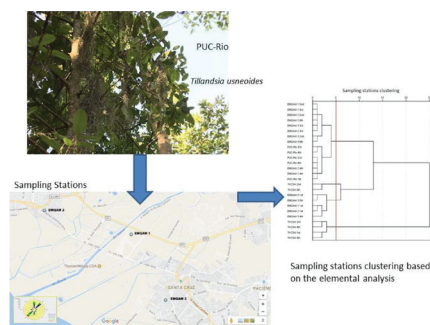
The activation parameters show that for the covalent functionalization, the COCl functionalized single wall carbon nanotube (NTCOCl) is kinetically favored with respect to the NTCOOH.



- 55 Alternative source apportionment in the surrounding region of a large steel industry applying *Tillandsia usneoides* as biomonitor

Laura B. dos Santos, Ana C. Almeida and Jose M. Godoy

Steel work biomonitoring based on the *Tillandsia usneoides*: collection at PUC-Rio, relocation to the sampling stations and clustering based on the elemental analysis.

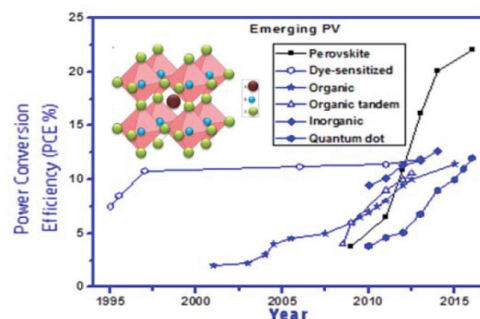


Revisão

- 61 Células solares de perovskitas: uma nova tecnologia emergente

Ellen Raphael, Mariana N. Silva, Rodrigo Szostak, Marco A. Schiavon e Ana F. Nogueira

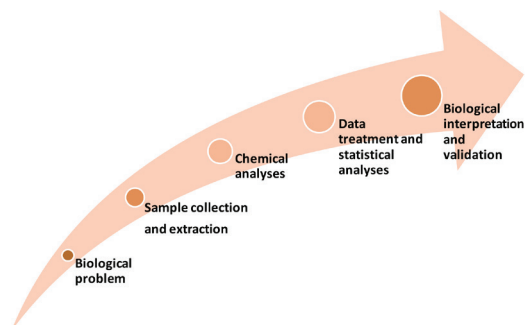
Perovskite solar cells are being one of the most important emerging photovoltaics in this century, with a significant increase in energy conversion efficiency, due to their fantastic properties, diversification of the processing methods and different materials.



- 75 Metabolômica: definições, estado-da-arte e aplicações representativas

Gisele A. B. Canuto, José L. da Costa, Pedro L. R. da Cruz, Ana Rosa L. de Souza, Andréa T. Faccio, Aline Klassen, Karina T. Rodrigues e Marina F. M. Tavares

A metabolomic study follows a workflow that involves steps from the experimental design to the biological interpretation of the system under evaluation.

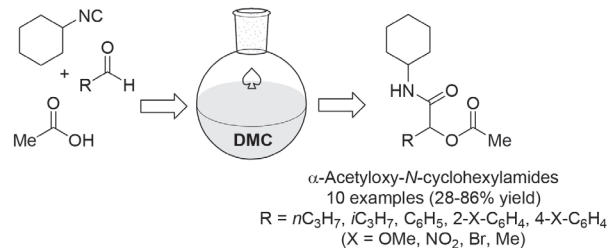


Nota Técnica

- 92 Preparação de α -acetiloxi-*N*-cicloexilamidas através da reação de Passerini utilizando dimetilcarbonato como solvente ambientalmente amigável

Bárbara R. Oliveira, Carla C. Silva, Juliana C. P. Calado, Wagner L. Batista, Fernanda A. Siqueira e Luiz S. Longo Jr.

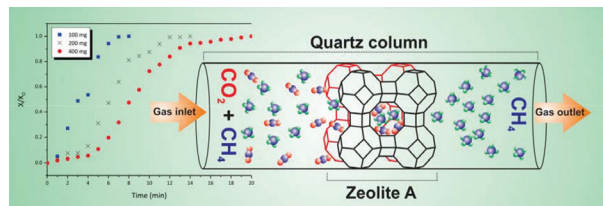
A series of α -acetyloxy-*N*-cyclohexylamides was efficiently obtained via Passerini reaction of cyclohexyl isocyanide, acetic acid, and different aromatic and aliphatic aldehydes using refluxing dimethylcarbonate (DMC) as unconventional solvent.



- 100 Zeólita 4A para purificação do gás de aterro sanitário

José D. V. de Souza Filho, Ari C. A. de Lima, Ronaldo Stefanutti, Wildson M. B. da Silva, Moisés Bastos-Neto, Enrique Vilarrasa-García, Adonay R. Loiola e Francisco S. B. Mota

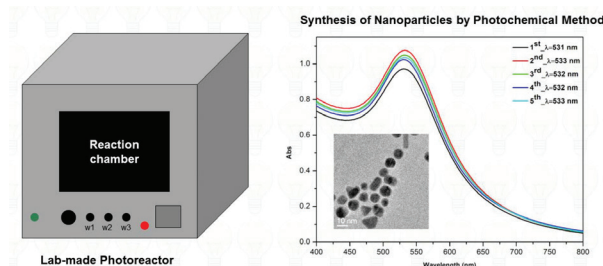
CO_2 adsorption present in landfill biogas using zeolites 4A. The use of zeolites is an alternative to landfill biogas purification targeting the use of methane.



- 105 Assembly of low-cost lab-made photoreactor for preparation of nanomaterials

Vera Katic, Pâmila L. dos Santos, Joyce G. Gabriel, Acacia A. Salomão and Juliano A. Bonacin

A low-cost lab-made photoreactor was assembled and used in preparation of nanomaterials.

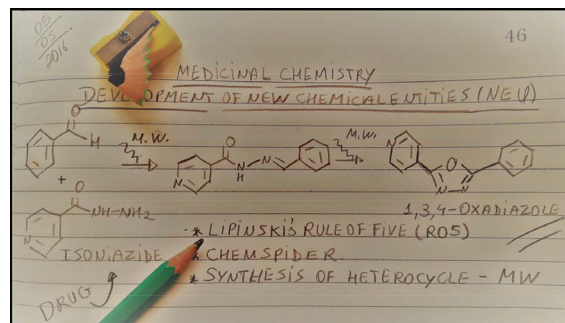


Educação

- 110 Abordagem didática para o desenvolvimento de moléculas bioativas: regra dos cinco de Lipinski e preparação de heterociclo 1,3,4-oxadiazol em forno de micro-ondas doméstico

Victória L. dos A. Santos, Arlan de A. Gonsalves e Cleônia R. M. Araújo

Didactic sequence of development of biative molecules approaching the Lipinski's five-rule and synthesis of 1,3,4-oxadiazole heterocycle using domestic microwave oven.



116 Cloração mecanoquímica da acetanilida

Silvio Cunha, Thiago Fontes, Daniel M. Araújo e Valéria B. Riatto

A green solvent-free synthesis of 4-chloroacetanilide both under hand grinding and mechanical grinding of stoichiometric amounts of acetanilide with trichloroisocyanuric acid.

