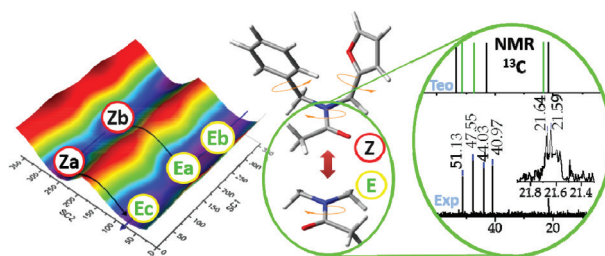


- 1 Insight into the conformational space of N-benzyl-N-(furan-2-ylmethyl)acetamide by NMR spectroscopy and DFT calculations

Jeisson D. Corredor Montaña, Alix E. Loaiza, Gustavo P. Romanelli, Isabelle De Waele, Yeny A. Tobón and Jovanny A. Gómez Castaño

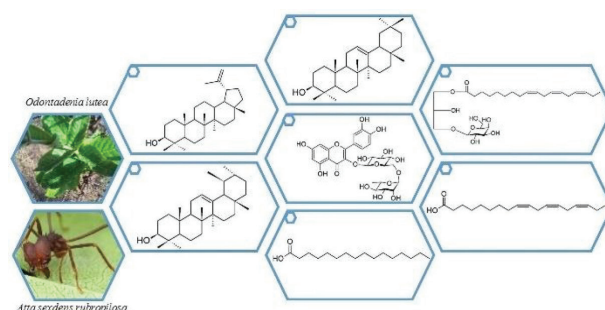
In this paper, we explore the hitherto unknown conformational behavior of the title tertiary amide in deuterated chloroform through a combined experimental/theoretical strategy using one- and two-dimensional NMR spectroscopy and quantum chemical calculations.



- 15 *Odontadenia lutea* (Apocynaceae) leaves: phytochemical study and insecticidal activity against leaf-cutting ants *Atta sexdens rubropilosa* Forel

Weber M. da Silva Junior, Renato G. Santos, Geane K. G. F. Duarte, Gracielle O. S. Cunha, Daniela M. da Silva, Thais F. R. Marchesin, Odair C. Bueno and Antônio C. S. Menezes

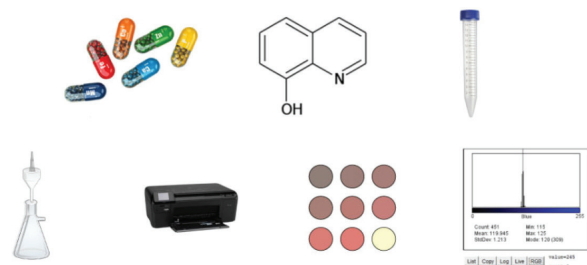
Phytochemical investigation of *O. lutea* leaves resulted in the identification of triterpenes, flavonoid, fatty acids, and glyceroglycolipid. The hexane fraction decreases the average survival of ants from sixteen to six days.



- 20 Uso de um scanner de mesa e espuma de poliuretano para quantificação de ferro total em cápsulas de suplementos alimentares

Fernanda. N. Feiteira, João V. de P. P. Barreiros e Wagner F. Pacheco

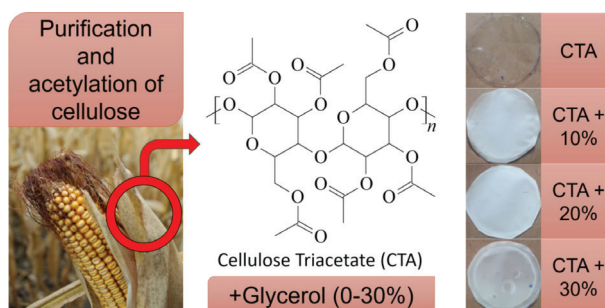
Solubilization and complexation of iron from food supplies, and its sorption on polyurethane foam for quantification by digital images analysis.



- 28 Efeito do teor de glicerol no transporte de vapor d'água através de filmes de triacetato de celulose produzidos a partir do aproveitamento da palha de milho (*Zea mays* L.)

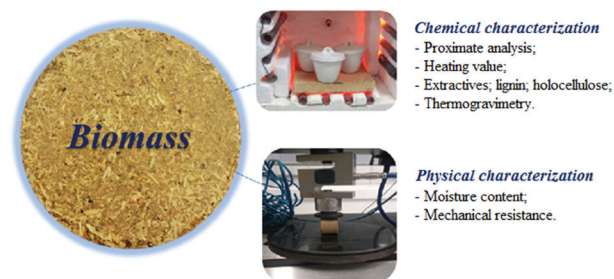
Erlon A. Ribeiro, Guimes Rodrigues Filho, Rosana M^a N. de Assunção, Marcos V. Ferreira, Betina Royer, Felipe V. dos Reis, Daniel A.s Cerqueira e Rodrigo A. A. Muñoz

In this paper the corn straw was used for the production of cellulose triacetate films from mixtures with glycerol (10%, 20% and 30%).



35 Caracterização física e química da biomassa usada como combustível sólido em uma caldeira

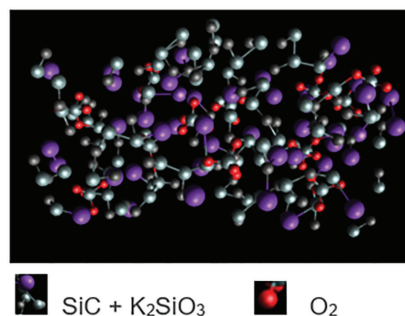
Natália R. de Carvalho, João L. de Barros, Diego A. da Silva, Gabriela T. Nakashima e Fábio M. Yamaji



The energy performance of biomass varies according to its chemical and physical properties, and the burning parameters. Such properties can be determined using biomass characterization standards for energy purposes.

41 Propriedades de proteção térmica do carbetto de silício em revestimentos cerâmicos

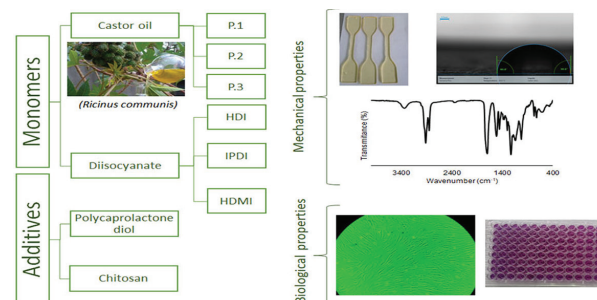
Marcela G. Domingues e José A. F. F. Rocco



Atomic-molecular arrangement of crystalline extrusion of the silicon carbide coating (filler) dispersed in a potassium silicate binder (K₂SiO₃).

48 Efecto de la adición de polímeros de cadena corta sobre la estructura química, propiedades mecánicas, térmicas y biológicas de poliuretanos sintetizados con diisocianatos alifáticos y aceite de higuera

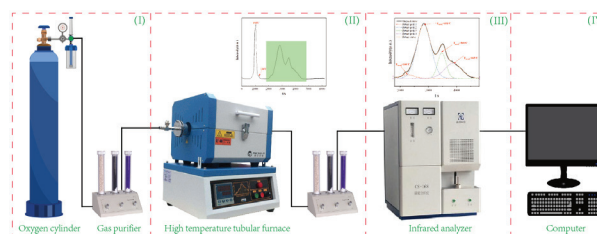
Yomaira L. Uscategui, Luis E. Díaz y Manuel F. Valero



Polyurethanes synthesized with polyols derived from castor oil were evaluated for their mechanical and biological properties. The results indicate that the polyurethanes synthesized with polyols derived from castor oil can be used in the design of biomaterials.

58 Fast determination of the sulfur species in solid phase systems by a TPO-IR method

Shiyun Tang, Song Yang, Sheng Tan, Junjiang Guo and Anjiang Tang

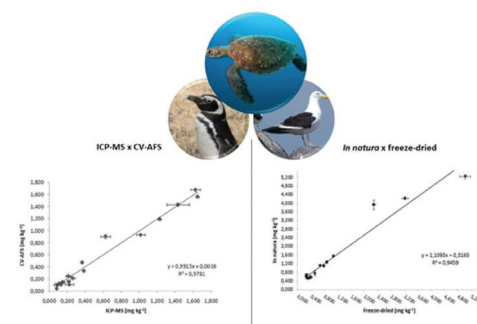


TPO-IR method was used for rapid determination of sulfur species in solid minerals. During the TPO process, sulfur species in minerals are oxidized or pyrolyzed to form sulfur dioxide which is detected by infrared detector. The content of sulfur species was quantified by fitting curve information.

- 64 Determinação de mercúrio em fígado de tetrápodes marinhos por espectrometria de fluorescência atômica acoplada a geração de vapor frio (CV-AFS) e espectrometria de massa com fonte de plasma indutivamente acoplado (ICP-MS): uma comparação sistemática entre as duas técnicas

Raíza F. da Silva, Siomara D. da Rocha, Amauri A. Menegário, Jorge H. Pedrobom, Everton T. Sulato, Karen S. Luko, Lucas P. Elias, Lucia M. de S. Oliveira e Êzio Sargentini Junior

Comparison between the determination of Hg by ICP-MS, CV-AFS and *in natura* and freeze-dried samples of hepatic tissue from marine tetrapods.



- 70 Main minerals and organic compounds in commercial roasted and ground coffee: an exploratory data analysis

Daneysa L. Kalschne, Nathalia K. Silva, Cristiane Canan, Marta de T. Benassi, Eder L. M. Flores and Oldair D. Leite

The commercial Brazilian roasted and grounded coffees, traditional and extra strong ones, showed interesting relationships between organic and mineral composition, with traditional and extra strong segmentation even considering roasted coffee from different commercial origins.

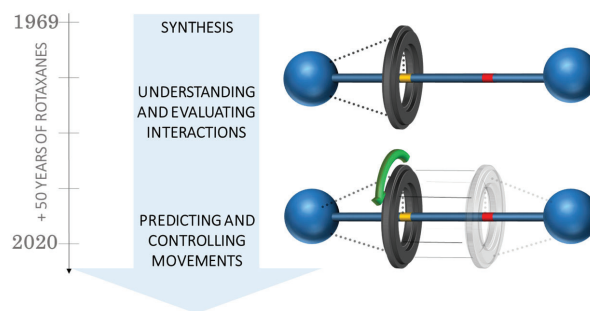


Revisão

- 76 Rotaxanos – interações intercomponentes e movimentos moleculares

Fellipe F. S. Farias, Tainára Orlando, Paulo R. dos S. Salbego e Marcos A. P. Martins

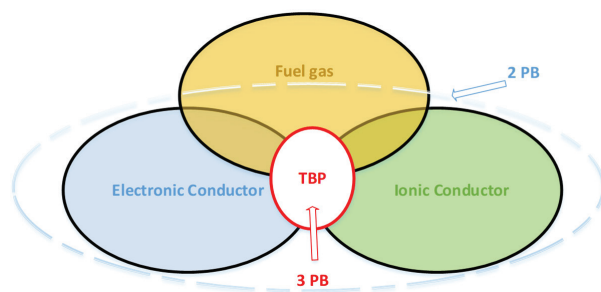
An overview of intercomponent interactions in [2]rotaxane molecules is presented, exhibiting how these interactions are studied, in solution and solid state. It is demonstrated the relation and importance between interactions and the major movements presented by this class of molecules.



- 86 Anodes for SOFC: review of material selection, interface and electrochemical phenomena

Marina Curi, Eduardo da R. Silva, José G. de M. Furtado, Helen C. Ferraz and Argimiro R. Secchi

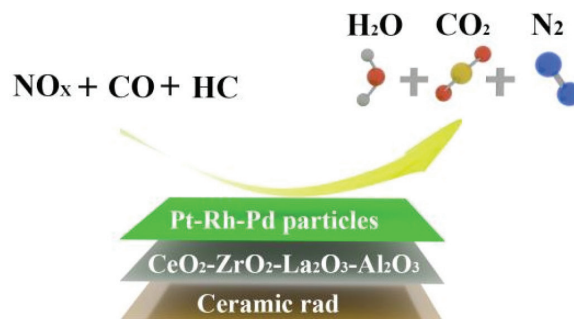
For more than forty years, Ni-YSZ *cermet* composites have been the main anode applied to SOFCs. In this *cermet* conventional anode, the chemical reaction occurs on a three-phase boundary (3PB) defined as an interface composed by an oxygen-ion conductor phase YSZ (electrolyte), an electronic conductor phase (Ni metal) and a fuel gas phase.



Nota Técnica

- 98 Preparation and properties of Pt-Rh-Pd / CeO₂-ZrO₂-La₂O₃-Al₂O₃ fibrous catalyst via electrospinning
Yu Zhu, Wei-gang Shen, Shuai-shuai Lv, Hong-jun Ni and Xing-xing Wang

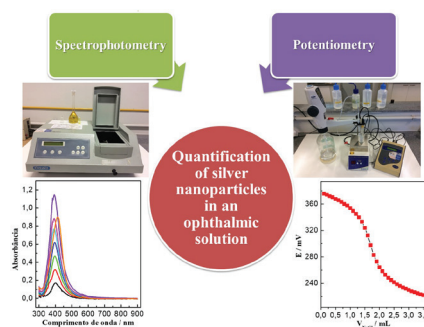
The fiber membrane CeO₂-ZrO₂-La₂O₃-Al₂O₃ prepared by electrospinning technology is used as a catalyst carrier and loaded with catalytically active particles such as Pt, Rh and Pd, which can effectively purify NO_x, CO and HC in automobile exhaust into CO₂, H₂O and N₂.



Educação

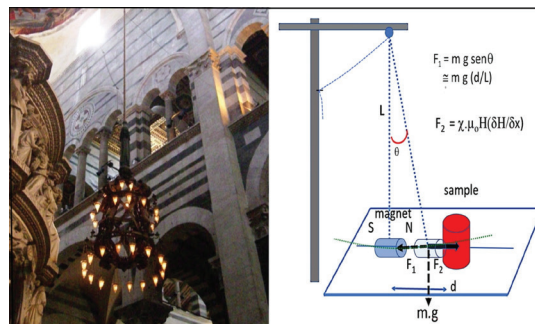
- 105 Quantificação de nanopartículas de prata em um produto farmacêutico por espectrofotometria e potenciometria: uma proposta para aulas práticas de química analítica
Elen C. P. de Brito, Ludmila dos S. Madalena, Richard H. Lima, Gabriel S. Bernardes, Luís A. da Silva e Valéria A. Alves

Spectrophotometry and potentiometry techniques were used to quantify silver in an ophthalmic solution. The average concentrations of Ag were $1.65 \pm 0.03\%$ (w/v) by spectrophotometry and $1.73 \pm 0.06\%$ (w/v) by potentiometry.



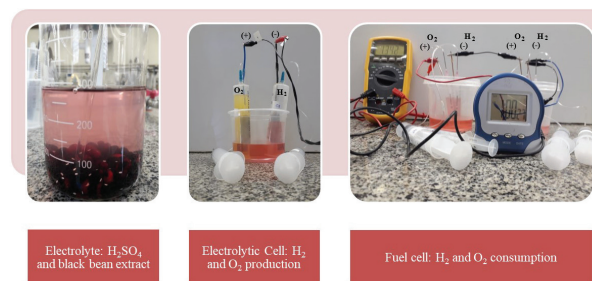
- 112 Galileo's pendulum as a magnetic balance for studying chemical magnetism at home
Henrique E. Toma

In 1583, this beautiful chandelier at the Cathedral of Pisa inspired Galileo to formulate the theory which is being applied in the construction of a pendulum magnetic balance.



- 118 Células eletrolítica e a combustível confeccionadas com materiais alternativos para o ensino de eletroquímica
Marlon M. S. Silveira, Richard H. Lima, Gabriel S. Bernardes, Valéria A. Alves e Luís Antônio da Silva

The experimental proposal focuses on the conversion of electrical energy to chemical energy and *vice versa*. The experiments for the two simultaneous energy conversions were designed with simple, easily accessible and inexpensive reagents and materials. The electrochemical reactions involved in the two conversions are considered fundamental in the teaching-learning process of the basic concepts of water electrolysis and in the recombination of hydrogen and oxygen gases.



Electrolyte: H₂SO₄ and black bean extract

Electrolytic Cell: H₂ and O₂ production

Fuel cell: H₂ and O₂ consumption

Assuntos Gerais

128 Análise sistêmica do patenteamento de indústrias químicas brasileiras líderes em vendas líquidas

Juliévany de S. Santos, Allan C. M. de Carvalho, Márcio N. da S. Florêncio, Simone de C. Silva, Ana K. de S. Abud e Antonio M. de Oliveira Júnior

With a strong presence in almost all production chains, the chemical industry is a strategic sector. The systemic analysis of patenting in these industries in Brazil based on the leading companies showed companies protect their technologies with patent applications despite little partnership.

