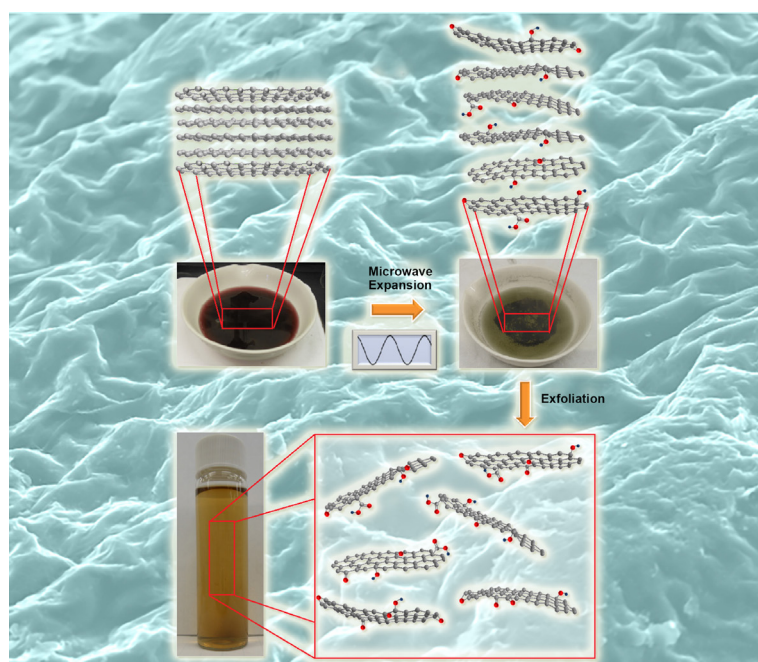


Cover Picture



Microwave-assisted acid method was used to expand graphite from Bay. The expanded graphite obtained was sonicated in acid medium to prepare wrinkled 2D few-layered graphene oxide with 5 to 9 layers that showed good stability in water from pH 4 to 12. The global process is a fast and energy-saving method compared to other processes described in the literature. Details are presented in the Article **Facile Graphene Oxide Preparation by Microwave-Assisted Acid Method** by Marcelo M. Viana, Meiriane C. F. S. Lima, Jerimiah C. Forsythe, Varun S. Gangoli, Minjung Cho, Yinhong Cheng, Glaura G. Silva, Michael S. Wong and Vinicius Caliman on page 978.

Contents

Editorial

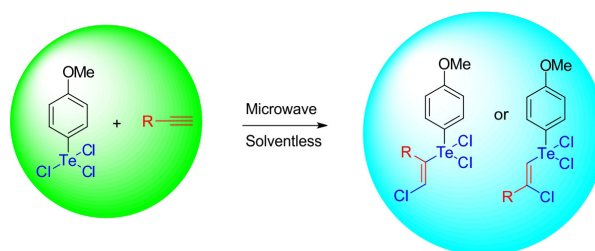
- 831 **Flow Analysis**
Elias A. G. Zagatto

Communication

832 Solventless and Mild Procedure to Prepare Organotellurium(IV) Compounds under Microwave Irradiation

Cleverson Princival, Alcindo A. Dos Santos and João V. Comasseto

SI online



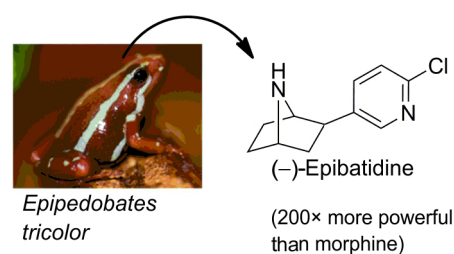
Graphical Abstract

p -Methoxyphenyltellurium trichloride reacts with alkynes in a short reaction time under microwave irradiation in the absence of solvents

Review

837 Recent Syntheses of Frog Alkaloid Epibatidine

Ronaldo E. de Oliveira Filho and Alvaro T. Omori



Graphical Abstract

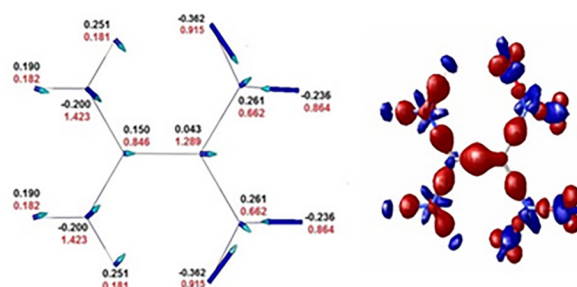
This review presents the recent syntheses of epibatidine since 2002, summarized by the method used to obtain the azabicyclic core

Articles

851 Molecular Electronic Topology and Fragmentation Onset via Charge Partition Methods and Nuclear Fukui Functions: 1,1-Diamino-2,2-dinitroethylene

Tiago Giannerini and Itamar Borges Jr.

SI online

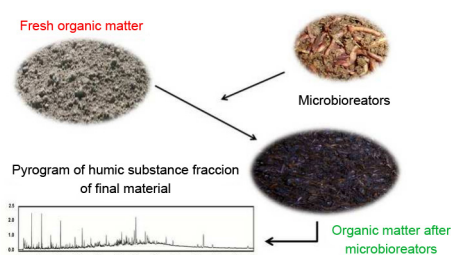


Graphical Abstract

Topological methods and response functions were used to investigate in detail the electronic (charge) properties of 1,1-diamino-2,2-dinitroethylene (FOX-7) including acid-base properties and onset of fragmentation

860 Chemical Differentiation of Domestic Sewage Sludge and Cattle Manure Stabilized by Microbioreactors: Study by Pyrolysis Coupled to Gas Chromatography Coupled to Mass Spectroscopy

Paulo R. Does-Silva, Maria D. Landgraf and Maria O. O. Rezende



Graphical Abstract

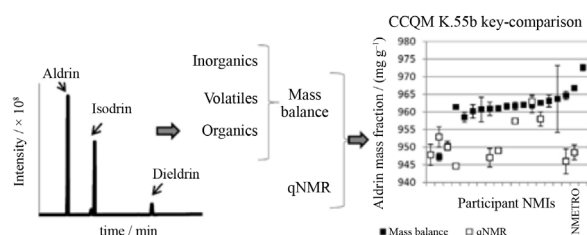
The earthworms act as microbioreactors leading to various several unit operations that conduce the stabilization of the recent organic matter, transforming it in a more refractory material

869 Determination of Aldrin Purity Using a Combination of the Mass Balance Approach and Quantitative NMR

Janaína M. Rodrigues, Eliane C. P. Rego, Evelyn F. Guimarães, Marcus V. B. Sousa, Tânia M. Monteiro, Laura A. Neves, Fernando G. M. Violante, Renato R. R. Almeida, Maria C. B. Quaresma and Raquel Nogueira

Graphical Abstract

Aldrin mass fraction was determined by mass balance, after determination of impurity mass fractions by gas chromatography with flame ionization detection, gas chromatography-mass spectrometry, gas chromatography with electron capture detector (organics), Karl Fischer coulometric titration (water content), and inductively coupled plasma mass spectrometry (inorganics). The results were validated through the participation of the National Institute of Metrology, Quality and Technology in the key-comparison CCQM-K55.b organized by Organic Analysis Working Group/International Bureau of Weights and Measures

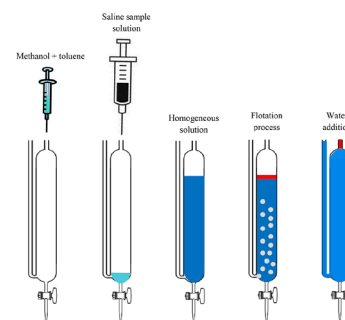


880 Extraction and Separation of Molybdenum by Using Homogeneous Liquid-Liquid Microextraction via Flotation Assistance

Mohammad Rezaee, Maryam Mozaffari, Hedayat Haddadi, Mohammad R. Pourjavadi and Abolfazl Semnani

Graphical Abstract

Homogeneous liquid-liquid microextraction via flotation assistance was investigated for the extraction of molybdenum from water samples. The developed method was sensitive, reproducible and linear over a wide range

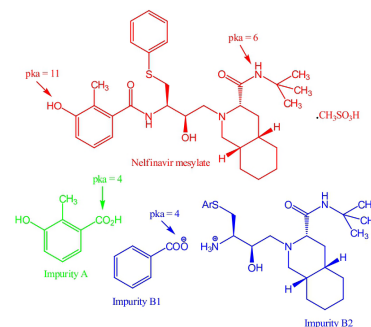


887 Optimization of an Electrolyte System for the Simultaneous Separation of Nelfinavir Mesylate and Two Impurities by Micellar Electrokinetic Chromatography

Carina A. Bastos, Cláudia R. B. Gomes, Marcus V. N. de Souza and Marcone A. L. de Oliveira

Graphical Abstract

A methodology for the determination of nelfinavir and its impurities was proposed using micellar electrokinetic chromatography (MEKC)-UV. The electrolyte was optimized using mixed-level factorial design. The robustness (using Youden's test) showed that the buffer concentration had the greatest effect in the separation factor

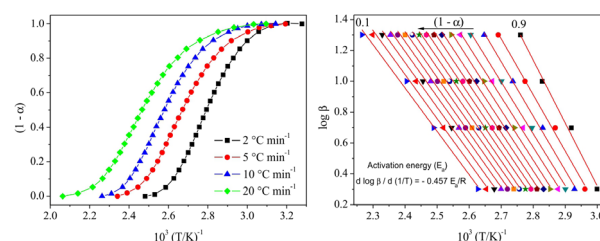


899 Kinetic Investigation of Thermal Formation Processes of SiOC Glasses Derived from C-Containing Hybrid Polymeric Networks

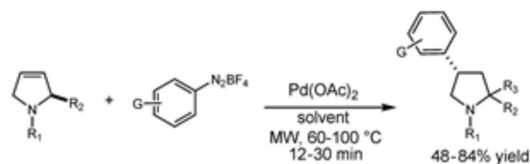
Naiara V. Godoy and Mariana G. Segatelli

Graphical Abstract

The activation energies (E_a) of the thermal degradation processes in C-rich and poor SiOC glasses, determined by Ozawa method, allowed to identify two degradation steps for all samples with different complexities



910 Microwave-Assisted Heck Arylations of Non-Activated
***N*-Acyl-3-pyrrolines with Arenediazonium Tetrafluoroborates**
Fernanda G. Finelli, Marla N. Godoi and
Carlos R. D. Correia

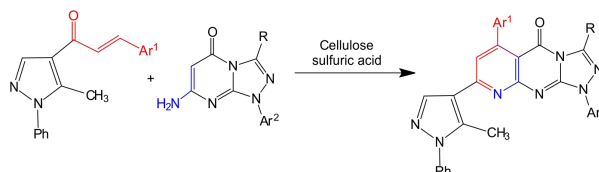
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R ₁	R ₂	R ₃	G	Conventional heating time	Yield	Microwave time	Yield
Boc	H	OH	4-OMe	30 min	15%	15 min	84%
CO ₂ Me	CO ₂ Me	OMe	4-OMe	18 h	86%	12 min	84%
CO ₂ Me	CO ₂ Me	OMe	4-F	18 h	55%	15 min	48%

Graphical Abstract

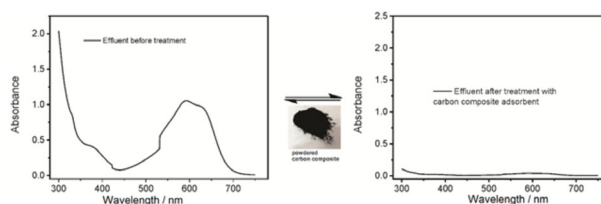
Effective Heck arylations of non-activated *N*-acyl-3-pyrrolines with arenediazonium salts were accomplished applying microwave irradiation

916 Cellulose Sulfuric Acid as an Eco-Friendly Catalyst for Novel Synthesis of Pyrido[2,3-*d*][1,2,4]triazolo[4,3-*a*]pyrimidin-5-ones
Sobhi M. Gomha and Sayed M. Riyadh

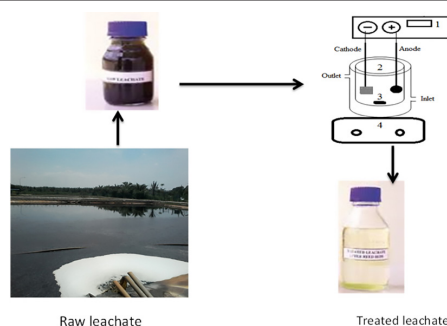
SI online

Graphical Abstract

In the present work, novel procedure for synthesis of pyrido[2,3-*d*][1,2,4]triazolo[4,3-*a*]pyrimidin-5-ones has been reported by using cellulose sulfuric acid as biopolymeric solid support acid catalyst

924 Application of Carbon Composite Adsorbents Prepared from Coffee Waste and Clay for the Removal of Reactive Dyes from Aqueous Solutions
Davis C. dos Santos, Matthew A. Adebayo, Eder C. Lima, Simone F. P. Pereira, Renato Cataluña, Caroline Saucier, Pascal S. Thue and Fernando M. Machado

SI online

Graphical Abstract

Dye-contaminated effluent treated with carbon composite adsorbent. Left untreated effluent, right treated effluent

939 Electrochemical Oxidation of Landfill Leachate: Investigation of Operational Parameters and Kinetics Using Graphite-PVC Composite Electrode as Anode
Zainab H. Mussa, Mohamed R. Othman and Md P. Abdullah

Graphical Abstract

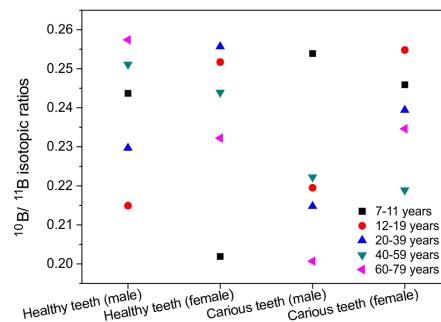
Raw leachate is a complicated sample with high chemical oxygen demand (COD) and color. Hence, a cheap, effective, and easy electrochemical oxidation technique is used in this study to reduce the concentration of pollutants in terms of COD and color

949 Determination of Boron Isotope Ratios in Tooth Enamel by Inductively Coupled Plasma Mass Spectrometry (ICP-MS) After Matrix Separation by Ion Exchange Chromatography

Maoyong He, Zhangdong Jin, Chongguang Luo, Li Deng, Jun Xiao and Fei Zhang

Graphical Abstract

The $^{10}\text{B}/^{11}\text{B}$ ratio in the enamel of the healthy teeth and carious teeth fluctuated over a broad range, ranged from 0.2007 to 0.2574. And it has significant variation with respect to age and gender



955 Determination of Polycyclic Aromatic Hydrocarbons in Groundwater Samples by Gas Chromatography-Mass Spectrometry After Pre-Concentration Using Cloud-Point Extraction with Surfactant Derivatization

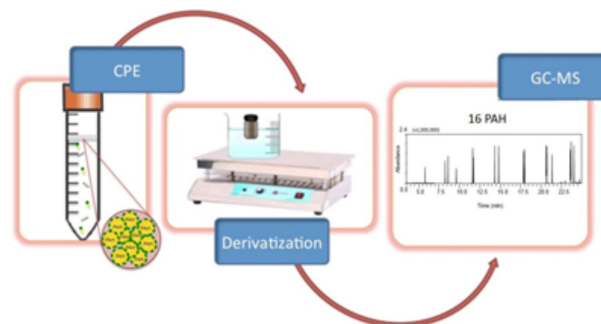


SI online

Sarah A. R. Soares, Cibele R. Costa, Rennan G. O. Araujo, Maria R. Zucchi, Joil J. Celino and Leonardo S. G. Teixeira

Graphical Abstract

A cloud-point extraction method using the surfactant (30)*p*-tert-octylphenol polyoxyethylene was proposed as the preceding step for the determination of polycyclic aromatic hydrocarbons by gas chromatography-mass spectrometry

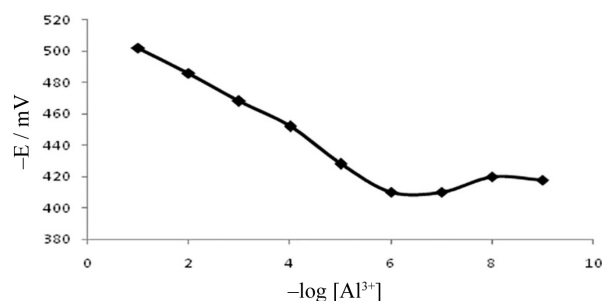


963 Construction of a New Aluminum(III) Cation Selective Electrode Based on 12-Crown-4 as an Ionophore

Masoomeh Esmailpourfarkhani, Gholam H. Rounaghi and Mohammad H. Arbab-Zavar

Graphical Abstract

The macrocyclic ligand, 12-crown-4, was used as an ionophore for fabrication of a polyvinyl chloride based membrane sensor for aluminum(III) cation. It was successfully used for the determination of this metal cation in some rocks and aluminum-magnesium syrup



970 Intercalated 4-Aminobenzenethiol between Au and Ag Nanoparticles: Effects of Concentration and Nanoparticles Neighborhood on its SERS Response

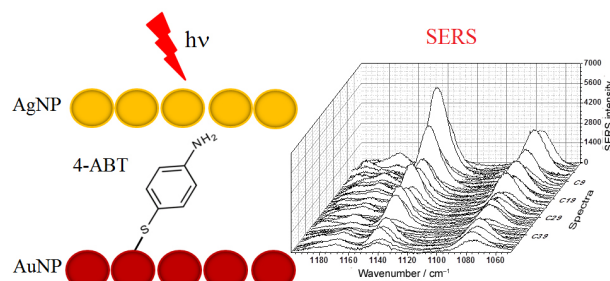


SI online

Elias de Barros Santos, Fernando Aparecido Sigoli and Italo Odone Mazali

Graphical Abstract

Intercalated 4-aminobenzenethiol between gold and silver nanoparticles was prepared and its surface-enhanced Raman scattering (SERS) signal is dependent on sandwiched nanostructure

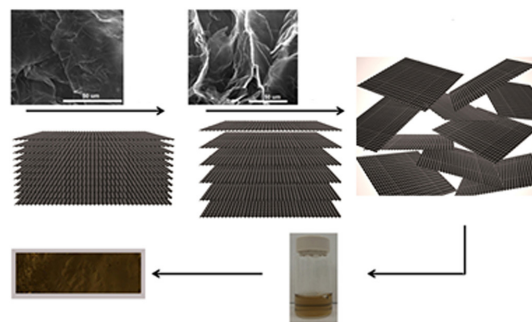


978 Facile Graphene Oxide Preparation by Microwave-Assisted Acid Method

Marcelo M. Viana, Meiriane C. F. S. Lima, Jerimiah C. Forsythe, Varun S. Gangoli, Minjung Cho, Yinhong Cheng, Glaucia G. Silva, Michael S. Wong and Vinicius Caliman

Graphical Abstract

Expansion, exfoliation and oxidation of graphite using a microwave-assisted acid method to prepare few layers graphene oxide (GO) and reduced graphene oxide (rGO) film with relatively high electrical conductivity

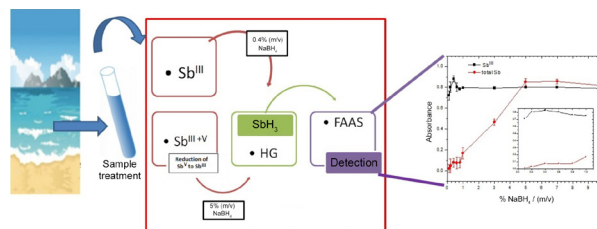


985 Noteworthy Method for Direct Determination of Sb^{III} and Total Inorganic Antimony in Natural Waters

Thaís S. Neri, Dayene C. Carvalho, Vanessa N. Alves and Nívia M. M. Coelho

Graphical Abstract

A procedure was developed for the direct determination of Sb^{III} and total inorganic Sb in water samples by hydride generation atomic absorption spectrometry (HG AAS), without pre-reduction of Sb^V

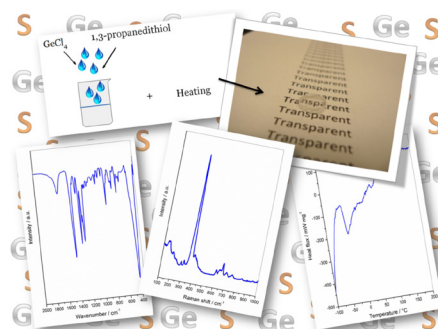


992 New Flexible and Transparent Solution-Based Germanium-Sulfide Polymeric Materials

Denise T. B. De Salvi, Aldo E. Job and Sidney J. L. Ribeiro

Graphical Abstract

These polymers present germanium and sulfur in their structure. They are transparent in the visible range and show flexibility. Other characteristic is the glass transition temperature found in temperatures below 0 °C, which may suggest applications in low temperatures

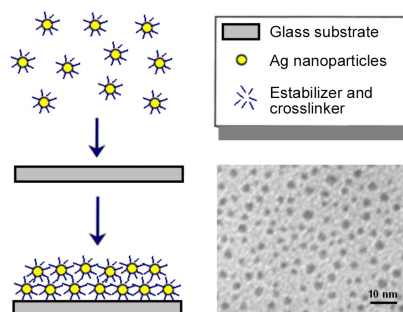


1004 Silver Nanoparticle Thin Films Deposited on Glass Surface Using an Ionic Silsesquioxane as Stabilizer and as Crosslinking Agent

Andressa C. Schneid, Marcelo B. Pereira, Flavio Horowitz, Raquel S. Mauler, Carla R. Matte, Manuela P. Klein, Plinho F. Hertz, Tania M. H. Costa, Eliana W. de Menezes and Edilson V. Benvenuti

Graphical Abstract

One step deposition of thin films containing silver nanoparticles on glass surfaces was made using charged silsesquioxane as nanoparticle stabilizer and as crosslinking agent. The system showed antimicrobial activity and it is promising as coating for glass used as food package and for hospital instruments that require sterilization



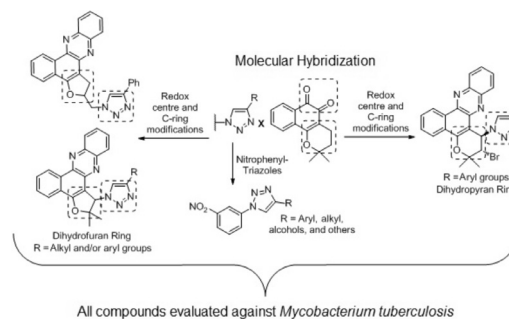
1013 On the Search for Potential Antimycobacterial Drugs: Synthesis of Naphthoquinoidal, Phenazinic and 1,2,3-Triazolic Compounds and Evaluation Against *Mycobacterium tuberculosis*

SI online

Guilherme A. M. Jardim, Eduardo H. G. Cruz, Wagner O. Valença, Jarbas M. Resende, Bernardo L. Rodrigues, Daniela F. Ramos, Ronaldo N. Oliveira, Pedro E. A. Silva and Eufrânio N. da Silva Júnior

Graphical Abstract

The present study describes the synthesis of naphthoquinoidal derivatives, phenazines and aryl triazoles as well as the evaluation of these compounds against *Mycobacterium tuberculosis*. This report represents an important contribution to the discovery of new anti-tuberculosis derivatives

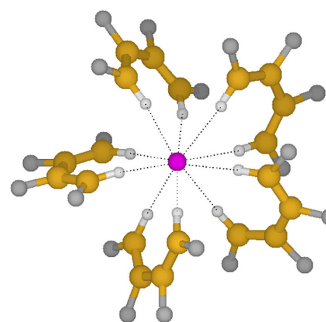


1028 Theoretical Study of Molecular and Electronic Structures of 5₁ Knot Systems: Two-Layered ONIOM Calculations

Aguinaldo R. de Souza and Nelson H. Morgon

Graphical Abstract

Theoretical study of the molecular fragment present in the experimental structure of the [5₁ knot:∞(PF₆)₉]Cl system using ONIOM(M06/6-31G(2d,p):PM6) method

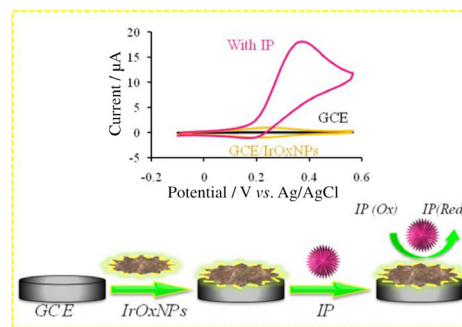


1034 Amperometric Detection of Isoprenaline Based on Glassy Carbon Electrode Modified by Iridium Oxide Nanoparticles

Mahmoud Roushani and Somayeh Farokhi

Graphical Abstract

A simple and very sensitive electrochemical sensor based on iridium oxide nanoparticles (IrOxNPs) has been developed by modification of glassy carbon electrode (GCE) and utilized to determine isoprenaline (IP). This sensor was used successfully for IP determination in human urine samples. The detection limit of the modified electrode toward IP was 90 nmol L⁻¹



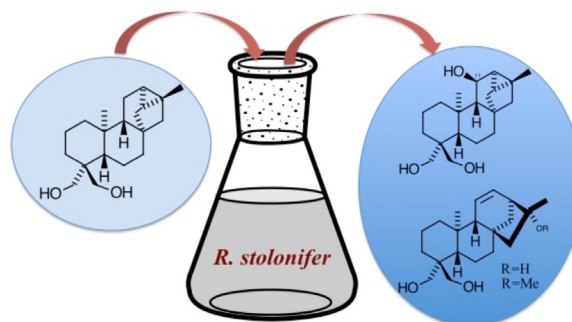
1043 Biotransformation of the Diterpene *Ent*-18,19-dihydroxytrachylobane by *Rhizopus stolonifer*

SI online

Daniely H. P. Vasconcelos, Jair Mafezoli, Paula K. S. Uchôa, Natalia N. Saraiva, Mary A. S. Lima, José N. Silva Júnior, Francisco G. Barbosa, Marcos C. Mattos, Maria C. F. de Oliveira, Cristiano S. Lima and Maria N. G. Pessoa

Graphical Abstract

The diterpene *ent*-18,19-dihydroxytrachylobane was biotransformed by *Rhizopus stolonifer*, and yielded three new compounds: *ent*-11B,18,19-trihydroxytrachylobane, *ent*-16a,18,19-trihydroxykaur-11-ene and *ent*-18,19-dihydroxy-16a-methoxykaur-11-ene



Short Reports

1048 Fluorescence Quenching of Two *meso*-Substituted Tetramethyl BODIPY Dyes by Fe(III) Cation



Lucas C. D. Rezende and Flavio S. Emery

SI online

Graphical Abstract

Chemical structures of the main borodiazaindacenes (BODIPYs) and the fluorescence turn-off observed under black light for the pyridyl-substituted BODIPY with growing concentration of Fe(III)

