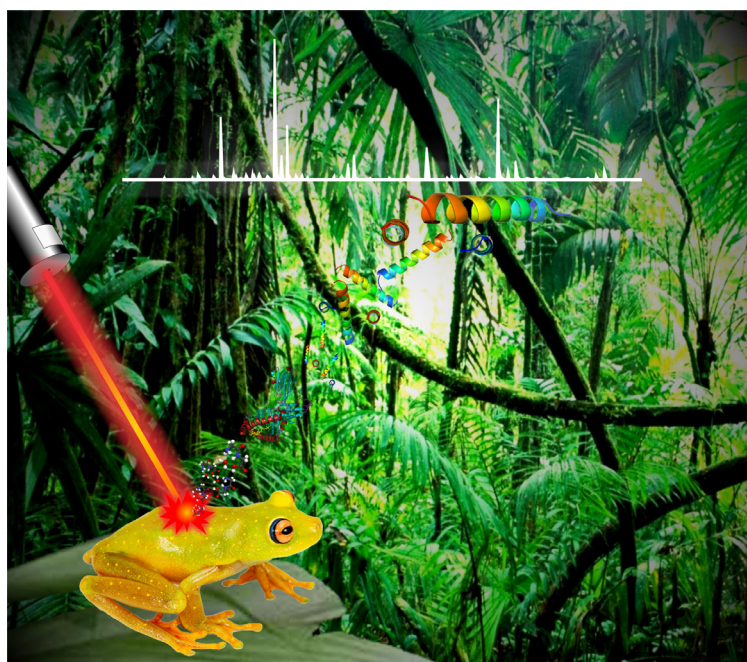


Cover Picture



The number of antibiotic-resistant microbes increases each year, whereas the number of new antibiotics does not follow the same rate, encouraging different surveys focusing on new active substances. From an expedition into the Amazon Rain Forest different green-tree frog (*Hypsiboas cinerascens*) specimens were captured and chemically studied aiming the discovery of new antimicrobial substances. Details are presented in the Article **Cinerascetins, New Peptides from *Hypsiboas cinerascens*: MALDI LIFT-TOF-MS/MS *de novo* Sequence and Imaging Analysis** by Richardson A. Almeida, Marcelo Gordo, Felipe M. A. da Silva, Rafael C. de Araújo, Marcelo H. S. Ramada, Fernando Y. Abrão, Túlio O. G. Costa, Hector H. F. Koolen, Afonso D. L. de Souza and Carlos Bloch Jr. on page 2290.

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2169 Chemistry of Our Oceans
Vanessa Hatje

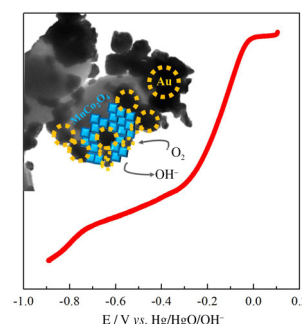
Communication

2171 Metal Oxide/Gold Hybrid Nanocomposites as Electrocatalysts for Alkaline Air Electrodes

Anielli M. Pasqualetti, Francisca E. R. Oliveira and
SI online Fabio H. B. Lima

Graphical Abstract

MnCo₂O₄/Au exhibited a synergistic effect boosting the oxygen reduction and evolution. *In situ* X-ray absorption near edge structure (XANES) revealed that Mn^{III}-Co^{II} play a role in the reduction. Au induced the increase in the Co^{IV} amount, favoring the oxygen evolution



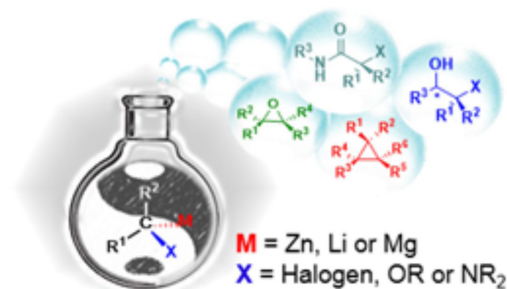
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2175 Zinc, Lithium and Magnesium Carbenoids: Chemical Properties and Relevant Applications in Organic Synthesis

Rodolfo H. V. Nishimura, Valter E. Murie, Rafael A. Soldi,
João L. C. Lopes and Giuliano C. Clososki

Graphical Abstract

The ambiphilic character of carbenoids, represented by the chinese yin yang, shows how apparently opposite forces can be complementary in organic synthesis



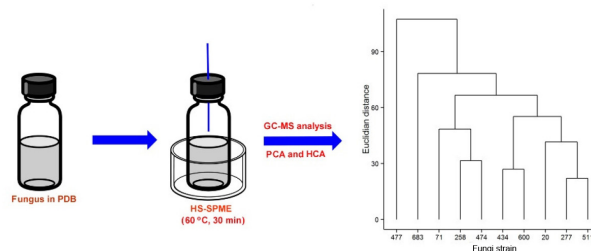
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2189 Volatile Organic Compounds from Filamentous Fungi: a Chemotaxonomic Tool of the Botryosphaeriaceae Family

Francisco C. Oliveira, Francisco G. Barbosa, Jair Mafezoli,
Maria C. F. Oliveira, André L. M. Camelo, Elisane Longhinotti,
Ari C. A. Lima, Marcos P. S. Câmara, Francisco J. T.
Gonçalves and Francisco C. O. Freire

Graphical Abstract

Volatile organic compounds from ten endophytic fungal species belonging to the Botryosphaeriaceae family were extracted by headspace-solid phase micro-extraction (HS-SPME) and analyzed by gas chromatography-mass spectrometry (GC-MS)

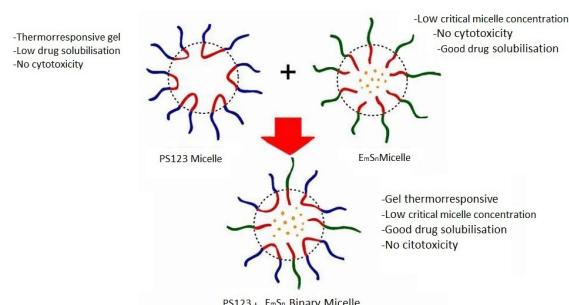


2195 Binary Micellar Solutions of Poly(Ethylene Oxide)-Poly(Styrene Oxide) Copolymers with Pluronic® P123: Drug Solubilisation and Cytotoxicity Studies

Samira A. Oliveira, Carolina L. Moura, Igor M. Cavalcante,
Amanda Araújo Lopes, Luzia K. A. M. Leal, Nilce V. Gramosa,
Maria E. N. P. Ribeiro, Francisco C. F. França,
Stephen G. Yeates and Nágila M. P. S. Ricardo

Graphical Abstract

P123 and EmSn binary micelles presented thermoreversible gelation, low critical micelle concentration (cmc), good drug solubilisation capacity and no cytotoxicity

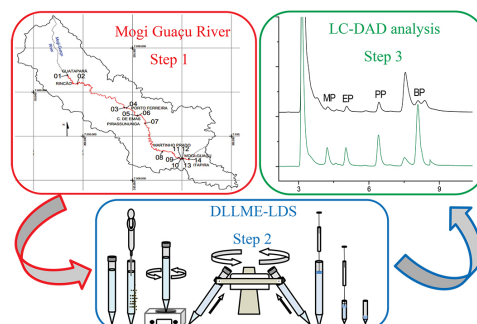


2205 Determination of Parabens in Surface Water from Mogi Guaçu River (São Paulo, Brazil) Using Dispersive Liquid-Liquid Microextraction Based on Low Density Solvent and LC-DAD

Carlos A. Galinaro, Fabiana M. Pereira and Eny M. Vieira

Graphical Abstract

This study has demonstrated the successful analysis of parabens on surface water samples, collected from Mogi Guaçu River (São Paulo state, Brazil), by dispersive liquid-liquid microextraction (DLLME) based on low density solvent (LDS) combined with liquid chromatography with diode array detection (LC-DAD)

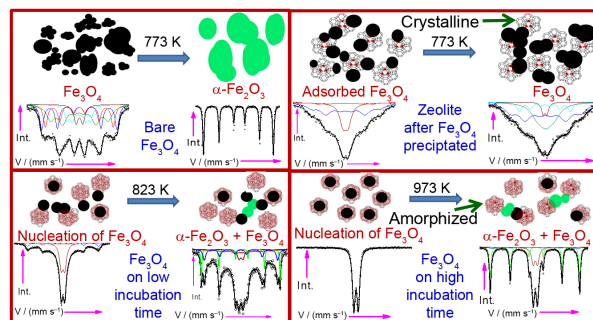


2214 Facile Method to Tune the Particle Size and Thermal Stability of Magnetite Nanoparticles

Loushambam H. Singh, Sudhanshu S. Pati, Maria J. A. Sales, Edi M. Guimarães, Aderbal C. Oliveira and Vijayendra K. Garg

Graphical Abstract

Zeolite confines the growth of the magnetite nanoparticles and provides stability, which prevents from agglomeration and oxidation leading to structural transformation

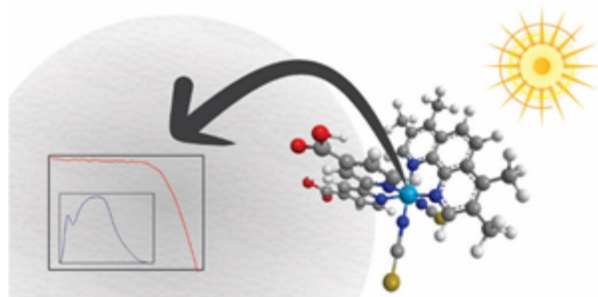


2224 Effects of Methyl-Substituted Phenanthrolines on the Performance of Ruthenium(II) Dye-Sensitizers

Andressa V. Müller, Poliana S. Mendonça, Stéphane Parant, Thibaut Duchanois, Philippe C. Gros, Marc Beley and André S. Polo

Graphical Abstract

Cis-[Ru(Me₂-phen)(dcbH₂)(NCS)₂] was prepared, characterized and employed in dye-sensitized solar cells. The presence of four methyl groups on 1,10-phenanthroline modulates its ground and excited states and the ability to convert sunlight into electrical energy

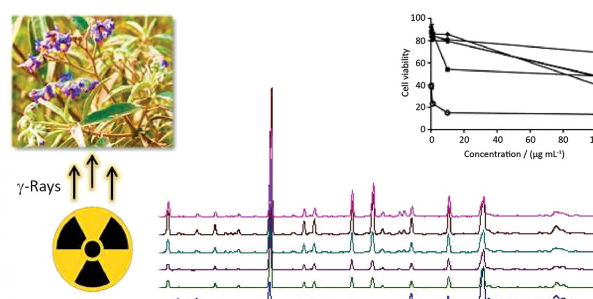


2233 Essential Oil from Flowers of *Solanum stipulaceum*: Composition, Effects of γ -Radiation, and Antileukemic Activity

Aura M. B. Osorio, Thiago M. Silva, Lucienir P. Duarte, Vany P. Ferraz, Márcio T. Pereira, Maria O. Mercadante-Simões, Fernanda C. G. Evangelista, Adriano P. Sabino and Antônio F. C. Alcântara

Graphical Abstract

The essential oil composition of γ -irradiated flowers of *Solanum stipulaceum* was analyzed by gas chromatography (GC). The cytotoxicity of essential oils from non-irradiated and irradiated flowers was also studied



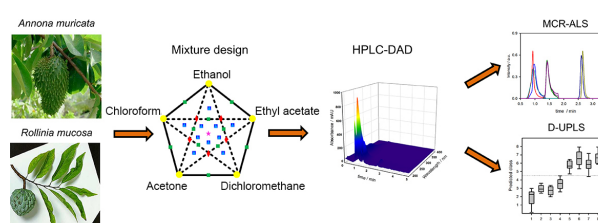
2241 Discrimination of *Annona muricata* and *Rollinia mucosa* Extracts by Using Multivariate Curve Resolution and Partial Least-Squares Regression of Liquid Chromatography-Diode Array Data

SI online

Sabrina Afonso, Pablo L. Pisano, Fabiano B. Silva, Ieda S. Scaminio and Alejandro C. Olivieri

Graphical Abstract

Discrimination of *Annona muricata* and *Rollinia mucosa* samples processed by multivariate curve resolution-alternating least-squares (MCR-ALS) and discriminant-unfolded partial least-squares (D-UPLS) of high-performance liquid chromatography with diode array detection (HPLC-DAD) data

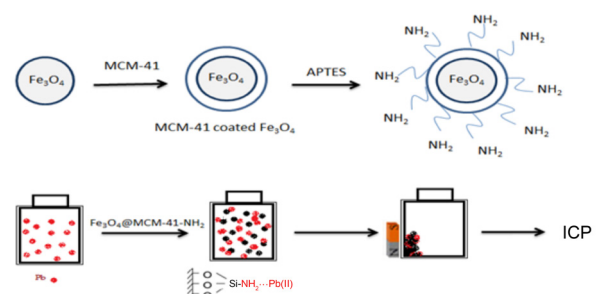


2249 Removal of Lead(II), Copper(II) and Zinc(II) Ions from Aqueous Solutions Using Magnetic Amine-Functionalized Mesoporous Silica Nanocomposites

Ali Mehdinia, Sahar Shegfti and Farzaneh Shemirani

Graphical Abstract

Fe₃O₄ nanoparticles were coated with mesoporous silica, MCM-41, and then amino-functionalization was performed on the MCM-41 surface by 3-aminopropyltriethoxysilane through the silanization reaction with hydroxyl groups of MCM-41. Fe₃O₄@MCM-41-NH₂ was used for extraction of some toxic metal ions from aqueous solutions

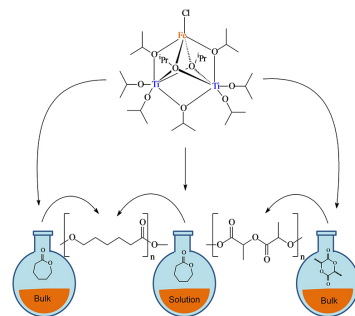


2258 Catalytic Activity of a Titanium(IV)/Iron(II) Heterometallic Alkoxide in the Ring-Opening Polymerization of ϵ -Caprolactone and *rac*-Lactide

SI online Siddhartha O. K. Giese, Cristiano Egevardt, André Luis Rüdiger, Eduardo L. Sá, Thiago Alexandre Silva, Sônia F. Zawadzki, Jaísa F. Soares and Giovana G. Nunes

Graphical Abstract

The heterometallic complex $[\text{FeCl}\{\text{Ti}_2(\text{O}^i\text{Pr})_3\}]$ was employed as initiator of ring-opening polymerization of ϵ -caprolactone and *rac*-lactide in bulk and in solution. The catalytic performance of the heterometallic complex was compared to the activities of other titanium(IV) and iron(II) complexes

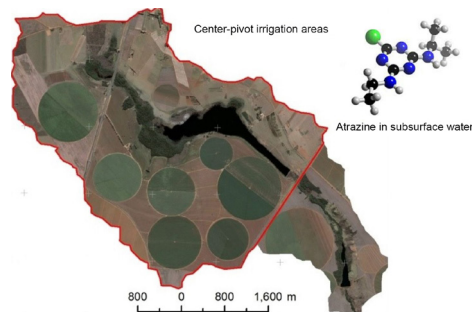


2269 Monitoring of Pesticide Residues in Surface and Subsurface Waters, Sediments, and Fish in Center-Pivot Irrigation Areas

Aderbal A. Rocha, Sérgio H. Monteiro, Graziela C. R. M. Andrade, Franz Z. Vilca and Valdemar L. Tornisielo

Graphical Abstract

This work is about a study of pesticide residue contamination in surface and subsurface waters, sediments and fish of center-pivot irrigation areas. Atrazine was observed below the method quantitation limit in subsurface water

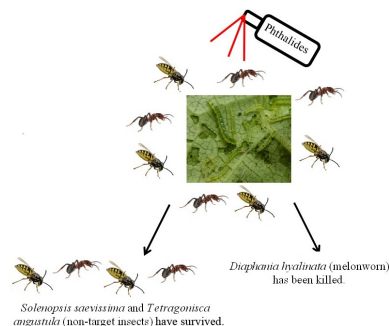


2279 Synthesis and Insecticidal Activity of Lactones Derived from Furan-2(5H)-one

SI online Milena G. Teixeira, Elson S. Alvarenga, Mirian F. Pimentel and Marcelo C. Picanço

Graphical Abstract

Besides the efficiency against insect pests, novel agrochemicals should preferably provide selectivity to non-target species. Therefore, the lactones synthesized in this work are promising as potential novel agrochemicals for the integrated pest management

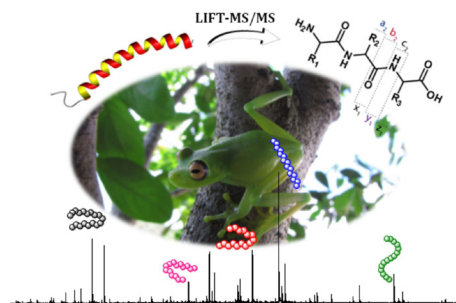


2290 Cinerascetins, New Peptides from *Hypsiboas cinerascens*: MALDI LIFT-TOF-MS/MS *de novo* Sequence and Imaging Analysis

SI online Richardson A. Almeida, Marcelo Gordo, Felipe M. A. da Silva, Rafael C. de Araújo, Marcelo H. S. Ramada, Fernando Y. Abrão, Túlio O. G. Costa, Hector H. F. Koolen, Afonso D. L. de Souza and Carlos Bloch Jr.

Graphical Abstract

In this work, new peptides named cinerascetins were identified from skin secretion of the *Hypsiboas cinerascens*. Imaging analysis localized the peptides on the dorsal tissue. Synthetic cinerascetin-01 was tested against some bacteria and fungi presenting satisfactory antimicrobial activities

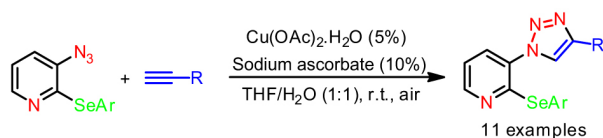


2298 Synthesis of 3-(1*H*-1,2,3-Triazol-1-yl)-2-(arylselanyl)pyridines by Copper-Catalyzed 1,3-Dipolar Cycloaddition of 2-(Arylselanyl)-3-azido-pyridines with Terminal Alkynes

SI online Ricardo F. Schumacher, Patrick B. Von Laer, Eduardo S. Betin, Roberta Cargnelutti, Gelson Perin and Diego Alves

Graphical Abstract

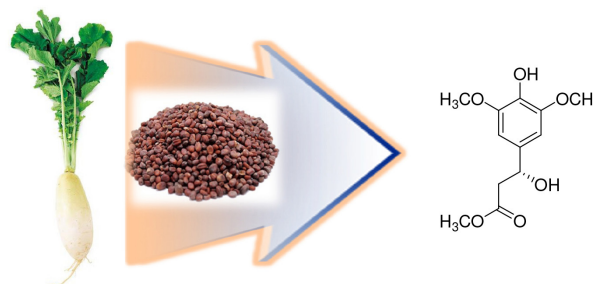
The synthesis of 3-(1*H*-1,2,3-triazol-1-yl)-2-(arylselanyl)pyridines by copper-catalyzed cycloaddition reaction is presented here



2307 Chemical Constituents of the Seeds of *Raphanus sativus* and their Biological Activity

Ki Hyun Kim, Eunjung Moon, Seoung Rak Lee, Kyoung Jin Park, Sun Yeou Kim, Sang Un Choi and Kang Ro Lee

SI online

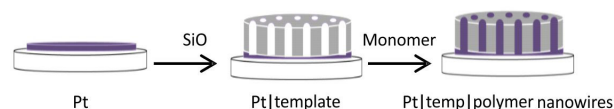


Graphical Abstract

Fifteen constituents, including a new phenolic compound, were isolated from the seeds of *Raphanus sativus*. Some of the isolated compounds showed moderate antiproliferative activities and significant anti-neuroinflammatory effects

2313 Electrosynthesis and Characterisation of Polymer Nanowires from Thiophene and its Oligomers

María Angelica del Valle, Andrea C. Ramos, Fernando R. Diaz and Manuel A. Gacitua



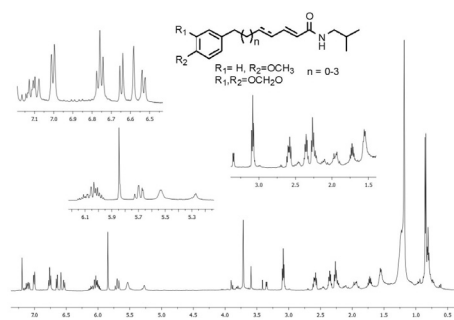
Graphical Abstract

Polythiophene was electrosynthesised as nanowires from the monomer and some of its oligomers on a Pt electrode previously modified with a template

2321 Piperamides from *Piper ottotonoides* by NMR and GC-MS Based Mixture Analysis

Thiago Wolff, Priscila F. P. Santos, Ligia M. M. Valente, Alvicler Magalhães, Luzineide W. Tinoco, Rita C. A. Pereira and Elsie F. Guimarães

SI online



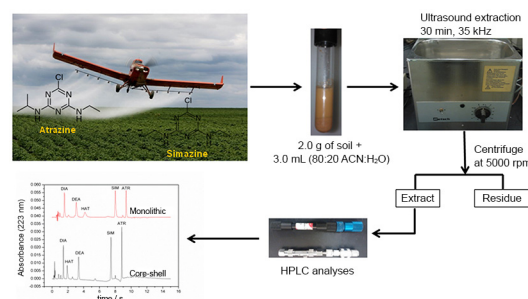
Graphical Abstract

A new and five known piperamides were unequivocally characterized in mixture from few amounts of semi-purified fractions from fruits, leaves, stems and roots of *Piper ottotonoides* by using nuclear magnetic resonance and gas chromatography-mass spectrometry

2331 Evaluation of Monolithic and Core-Shell Columns for Separation of Triazine Herbicides by Reversed Phase High Performance Liquid Chromatography

Ricardo P. Urio and Jorge C. Masini

SI online

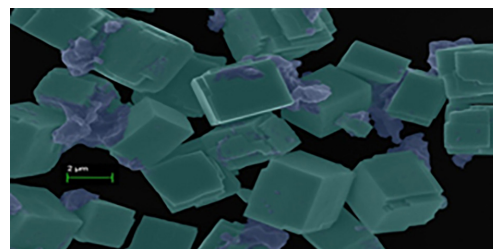


Graphical Abstract

Monolithic and core-shell chromatographic columns were evaluated for separation of triazines and some of their metabolites in ultrasound extracted soil

2339 Facile Microwave-Assisted Synthesis of Lanthanide Doped CaTiO₃ Nanocrystals

Sandra C. Pereira, Alberthmeiry T. Figueiredo, Cristiano M. Barrado, Marcelo H. Stoppa, Yashashchandra Dwivedi, Maximo S. Li and Elson Longo



Graphical Abstract

Fast synthesis of lanthanide doped CaTiO₃ produces a microcube-like structure and a region without well-defined morphology. The structural disorder and observed photoluminescence emission are correlated

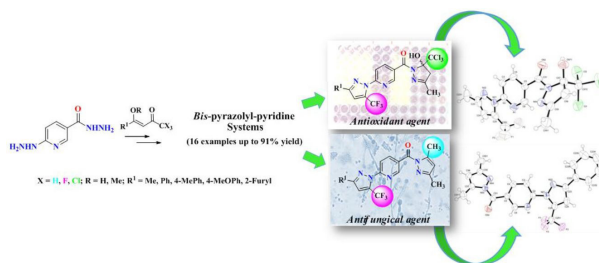
2346 **Synthesis, Structure Elucidation, Antioxidant and Antimicrobial Activity of Novel 2-(5-Trifluoromethyl-1H-pyrazol-1-yl)-5-(5-(trihalomethyl-1H-pyrazol-1-yl)-1-carbonyl)pyridines**

SI online

Helio G. Bonacorso, Susiane Cavinatto, Maiara C. Moraes, Everton P. Pittaluga, Luis R. Peroza, Tarciele Venturini, Sydney H. Alves, Sílvia T. Stefanello, Félix A. A. Soares, Marcos A. P. Martins, Nilo Zanatta and Clarissa P. Frizzo

Graphical Abstract

Synthesis, structure, antioxidant and antimicrobial activity evaluation of novel 2-(5-trifluoromethyl-1H-pyrazol-1-yl)-5-(5-(trihalomethyl-1H-pyrazol-1-yl)-1-carbonyl)pyridines bearing two distinct trihalomethyl substituted pyrazole rings

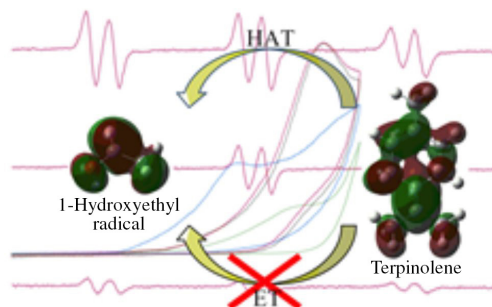


2362 **Mechanism of Hop-Derived Terpenes Oxidation in Beer**

Natália E. C. de Almeida, Inara de Aguiar and Daniel R. Cardoso

Graphical Abstract

The oxidation of hop-derived terpenes in beer has been shown to occur through a hydrogen atom abstraction by 1-hydroxyethyl radical rather than by an electron transfer mechanism

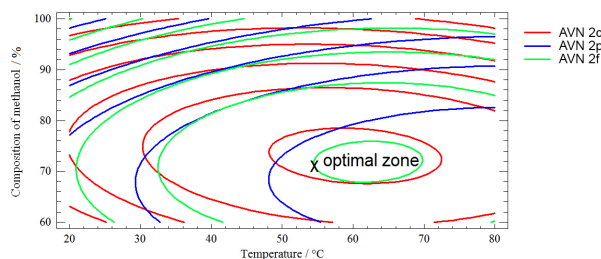


2369 **Optimization of Parameters for Extraction of Avenanthramides from Oat (*Avena sativa* L.) Grain Using Response Surface Methodology (RSM)**

Maria Maliarova, Viera Mrazova, Michaela Havrlentova and Jozef Sokol

Graphical Abstract

The optimization method which combined desirability function with response surface methodology (RSM) models was chosen to find the best extraction conditions for obtaining maximum yield of major avenanthramides from oat grain



Short Report

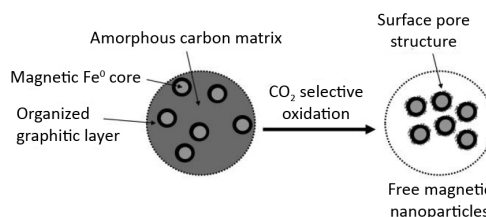
2379 **Selective Oxidation of Amorphous Carbon by CO₂ to Produce Fe@C Nanoparticles from Bulky Fe/C Matrices**

SI online

Fernanda G. Mendonça, José D. Ardisson, Rochel M. Lago and Juliana C. Tristão

Graphical Abstract

Fe⁰ cores encapsulated in a carbon matrix treated with CO₂ to selectively oxidize the amorphous carbon and release carbon coated magnetic nanoparticles



2384 **Spectrophotometric Determination of Aluminium in Hemodialysis Water**

Eder J. Santos, Eduardo B. Fantin, Ronei E. Paixão, Amanda B. Herrmann and Ralph E. Sturgeon

Graphical Abstract

This work describes a simple and fast spectrophotometric method for the determination of aluminium in hemodialysis water employing alizarin red S in the presence of polyvinylpyrrolidone 40

