



Graphical Abstracts/J. Fluorine Chem. 142 (2012) 1–5

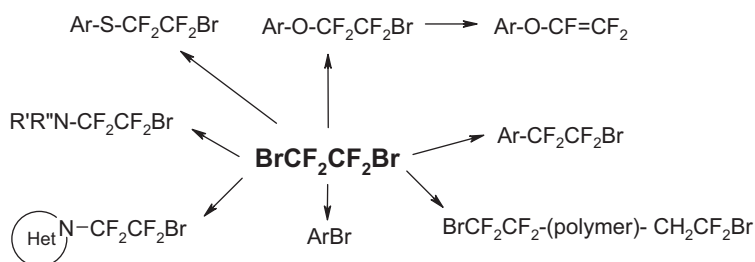
1,2-Dibromotetrafluoroethane (Freon 114B2) as a building block for fluorine compounds

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Wojciech Dmowski

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The review provides an overview of several synthetic applications of 1,2-dibromotetrafluoroethane leading to convenient preparation of numerous fluorine compounds containing $-\text{CF}_2\text{CF}_2-$ moiety via ionic and free radical reactions.

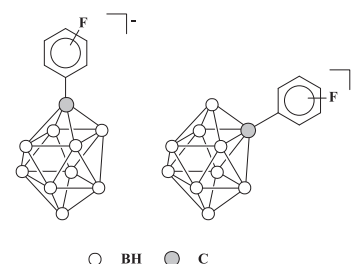
Synthesis and structure of fluorophenyl derivatives of the 10-vertex monocarbaborane anions $[1-\text{CB}_9\text{H}_{10}]^-$ and $[2-\text{CB}_9\text{H}_{10}]^-$

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Vikentii I. Bragin, Alexander A. Korlyukov, Pavel V. Petrovskii, Igor B. Sivaev, Vladimir I. Bregadze

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Moscow, Russia

The C-fluorophenyl-substituted monocarbaborane anions $[1-(\text{X-FC}_6\text{H}_4)-1-\text{CB}_9\text{H}_9]^-$ and $[1-(\text{X-FC}_6\text{H}_4)-1-\text{CB}_9\text{H}_9]^-$ ($X = 2, 3, 4$) were prepared starting from decaborane and the corresponding fluorobenzaldehydes using the Brellochs reaction.



Direct fluorination of carbon monoxide in microreactors

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Walter Navarrini^{a,b}, Francesco Venturini^a, Vito Tortelli^c, Soubir Basak^d, Ketan P. Pimparkar^d, Andrea Adamo^d, Klavs F. Jensen^d

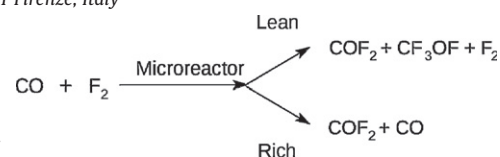
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The direct fluorination of carbon monoxide with pure fluorine is highly exothermic, thus difficult to control. It can easily develop into a thermal runaway with a poor selectivity. Under rich conditions the main product is COF_2 together with the unreacted carbon monoxide but in excess of fluorine perfluoro methyl hypofluorite (CF_3OF) is formed along with the main product.



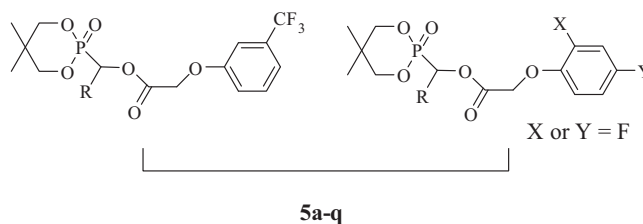
Synthesis and herbicidal activity of 2-(substituted phenoxyacetoxy) alkyl-5,5-dimethyl-1,3,2-dioxaphosphinan-2-one containing fluorine

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Wei Wang, Hong-Wu He, Na Zuo, Xin Zhang, Ji-Sheng Lin, Wei Chen, Hao Peng

Key Laboratory of Pesticide & Chemical Biology, Ministry of Education; Institute of Pesticide Chemistry, College of Chemistry, Central China Normal University, Wuhan 430079, PR China

A series of novel fluorine-containing cyclophosphonates derivatives were designed and synthesized. The results of bioassay showed that some of the target compounds display high herbicidal activity at a dosage of 75 g ai/ha.



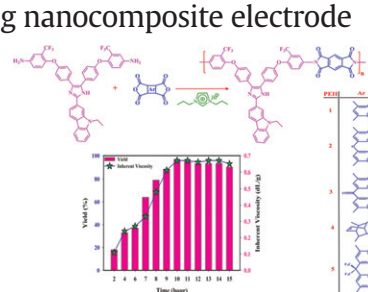
Synthesis and characterization of trifluoromethylated poly(ether-imidazole-imide)s based on unsymmetrical diamine bearing carbazole and imidazole chromophores in ionic liquids: Study of electrochemical properties by using nanocomposite electrode

J. Fluorine Chem., 142 (2012) 29

Mousa Ghaemy, Marjan Hassanzadeh, Mehdi Taghavi, Seyed Mojtaba Amini Nasab

Polymer Chemistry Research Laboratory, Department of Chemistry, University of Mazandaran, Babolsar 47416-95447, Islamic Republic of Iran

A series of novel thermally stable poly(ether-imidazole-imide)s bearing ether linkage, substituted imidazole, carbazole ring and bulky CF₃ groups in the backbone was successfully prepared by polycondensation reaction between a new unsymmetrical diamine and commercially available dianhydrides via a two-stage method including poly(amic acid) formation and chemical imidization and a one stage method in imidazolium based ionic liquids without using NMP-pyridine-acetic anhydride.



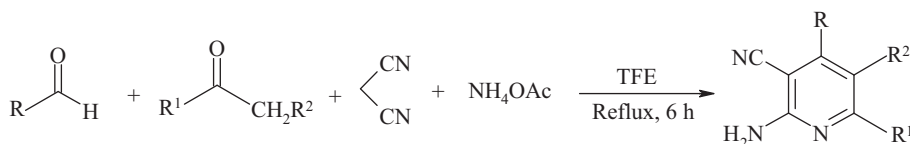
A concise and versatile synthesis of 2-amino-3-cyanopyridine derivatives in 2,2,2-trifluoroethanol

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Samad Khaksar, Mandana Yaghoobi

Department of Chemistry, Ayatollah Amoli Branch, Islamic Azad University, Amol, Iran

2-Amino-3-cyanopyridine derivatives were synthesized in excellent yield in 2,2,2-trifluoroethanol.



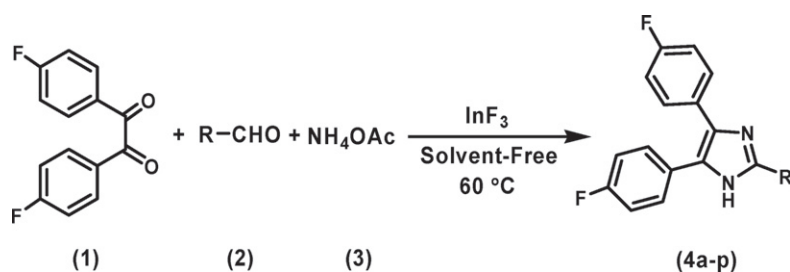
Indium trifluoride: A highly efficient catalyst for the synthesis of fluorine-containing 2,4,5-trisubstituted imidazoles under solvent-free conditions

J. Fluorine Chem., 142 (2012) 45

Mudumala Veerarayana Reddy, Yeon Tae Jeong

Department of Image Science and Engineering, Pukyong National University, Busan 608-737, Republic of Korea

An efficient and one-pot protocol for the synthesis of fluorine-containing 2,4,5-trisubstituted imidazoles promoting by InF₃ under solvent-free conditions is described.



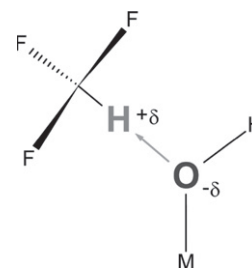
Interaction of trifluoromethane (CHF₃) with alkali hydroxides and carbonates

Andrii Vakulka^{ab}, Gašper Tavčar^a, Tomaž Skapin^{ab}

^aDepartment of Inorganic Chemistry and Technology, Jožef Stefan Institute, Jamova 39, SI-1000 Ljubljana, Slovenia

^bJožef Stefan International Postgraduate School, Jamova 39, SI-1000 Ljubljana, Slovenia

Trifluoromethane (CHF₃) is completely decomposed (mineralised) with alkali (Li, Na, K) hydroxides and carbonates at moderate temperatures. Activity of the solids towards CHF₃ strongly depends on their basicity. It appears that acid–base interactions have a decisive role in the initial stages of the CHF₃ decomposition process.



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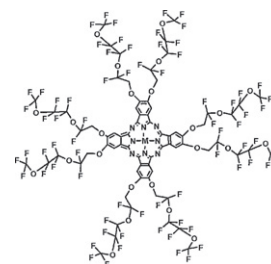
Synthesis and characterization of novel fluoroether-substituted phthalocyanines

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^aTUBITAK-Marmara Research Center, Materials Institute, PO Box 21, Gebze, 41470, Turkey

^bGebze Institute of Technology, Department of Chemistry, PO Box 141, Gebze, 41400, Turkey

4-{2,2-difluoro-2-[1,1,2,2-tetrafluoro-2-(trifluoromethoxy)ethoxy]ethoxy}, 4-chloro-5-{2,2-difluoro-2-[1,1,2,2-tetrafluoro-2-(trifluoromethoxy)ethoxy]ethoxy}, and 4,5-bis{2,2-difluoro-2-[1,1,2,2-tetrafluoro-2-(trifluoromethoxy)ethoxy]ethoxy} substituted metal free (H₂Pc) and metallophthalocyanines (NiPc, ZnPc, CoPc) were synthesized for the first time in this study. These complexes were characterized by mass, FT-IR and UV–vis spectroscopic techniques as well as elemental analysis.



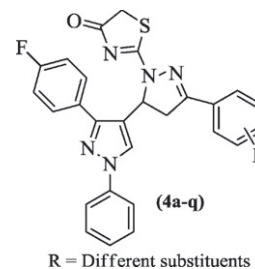
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Facile synthesis of novel fluorine containing pyrazole based thiazole derivatives and evaluation of antimicrobial activity

N.C. Desai, V.V. Joshi, K.M. Rajpara, H.V. Vaghani, H.M. Satodiya

Division of Medicinal Chemistry, Department of Chemistry, Mahatma Gandhi Campus, Maharaja Krishnakumarsinji Bhavnagar University, Bhavnagar 364 002, Gujarat, India

A novel series of 2-(5-(3-(4-fluorophenyl)-1-phenyl-1H-pyrazol-4-yl)-3-(aryl)-4,5-dihydro-1H-pyrazol-1-yl)thiazol-4(5H)-ones (**4a–q**) were prepared and screened for in vitro antimicrobial activity.



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Neuroprotective effects of silymarin on sodium fluoride-induced oxidative stress

Seyed Mohammad Nabavi^{ab}, Antoni Sureda^c, Seyed Fazel Nabavi^{ab}, Ali Mohammad Latifi^a, Akbar Hajizadeh Moghaddam^d, Claire Hellio^e

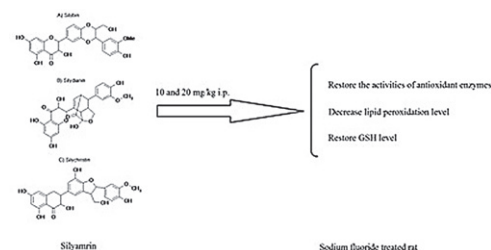
^aApplied Biotechnology Research Center, Baqiyatallah University of Medical Sciences, Tehran, Iran

^bNational Elites Foundation of Iran, Tehran, Iran

^cLaboratori de Ciències de l'Activitat Física, Departament de Biologia Fonamental i Ciències de la Salut, Universitat de les Illes Balears, Ctra. Valldemossa Km 7.5, 07122 Palma de Mallorca, Illes Balears, Spain

^dDepartment of Biology, Faculty of Sciences, University of Mazandaran, Babolsar, Iran

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In present study possible protective role of silymarin on sodium fluoride induced oxidative stress in rat's brain has been examined.

Generation and stability of superoxide ion in tris(pentafluoroethyl) trifluorophosphate anion-based ionic liquids

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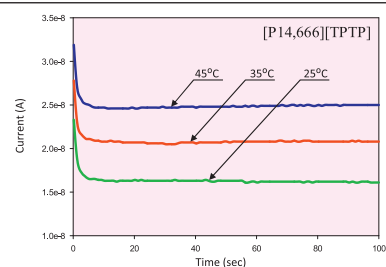
^bDepartment of Chemical Engineering, University of Malaya, 50603 Kuala Lumpur, Malaysia

^cPetroleum & Chemical Engineering Department, Sultan Qaboos University, Muscat 123, Oman

^dChemical Engineering Department, King Saud University, Riyadh, Saudi Arabia

$O_2^{\cdot-}$ was generated electrochemically by reduction of O_2 and chemically by solvation of KO_2 in [MOEMPip][TPTP] and [P14,666][TPTP]. The diffusion coefficients and solubility of O_2 were determined. The long term stability of generated $O_2^{\cdot-}$ was investigated. It was found that diffusion coefficient of O_2 in [P14,666]⁺ based IL is higher than in [MOEMPip]⁺ based IL while the solubility of O_2 is higher in [MOEMPip]⁺ than in [P14,666]⁺. The long term stability of $O_2^{\cdot-}$ tests showed that $O_2^{\cdot-}$ in [MOEMPip][TPTP] is stable while in [P14,666][TPTP] was unstable.

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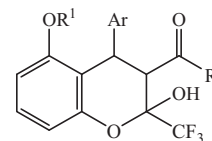
Efficient entry to trifluoromethyl substituted chromanes from oxidative aromatization of tetrahydro-2H-chromen-5(6H)-ones using iodine/alcohol with conventional and microwave methods

Helio G. Bonacorso, Jussara Navarini, Carson W. Wiethan, Andrizia F. Junges, Susiane Cavinatto, Rosália Andrighetto, Marcos A.P. Martins, Nilo Zanatta

Núcleo de Química de Heterociclos (NUQUIMHE), Departamento de Química, Universidade Federal de Santa Maria, 97105-900 Santa Maria, RS, Brazil

A efficient one-pot oxidative aromatization using iodine/alcohol medium for the preparation of a series of 11 new 3-acyl-2-hydroxy-5-alkoxy-4-aryl-2-(trifluoromethyl)chromanes from tetrahydro-2H-chromen-5(6H)-ones by conventional heating thermal (CTH) and microwave (MW) procedures, is described.

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(11 examples, up to 89 %)

R = CH₃, Ph, 2-Furyl; R¹ = Me, Et, Prⁿ, Bn;
Ar = Ph, 4-NO₂Ph, 4-MeOPh

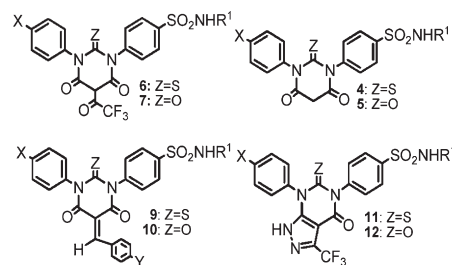
Synthesis and biological evaluation of new barbituric and thiobarbituric acid fluoro analogs of benzenesulfonamides as antidiabetic and antibacterial agents

Hassan M. Faidallah, Khalid A. Khan

Department of Chemistry, Faculty of Science, King Abdulaziz University, Jeddah, Saudi Arabia

A novel series of benzenesulfonamide derivatives of barbituric and thiobarbituric acids (**2–12**) were synthesized. Fluoro and trifluoroacetyl substituents have been installed on various positions and their comparative biological screening was performed with the corresponding non-fluorinated analogs. Some of the target compounds have shown very good antibacterial and antidiabetic activities.

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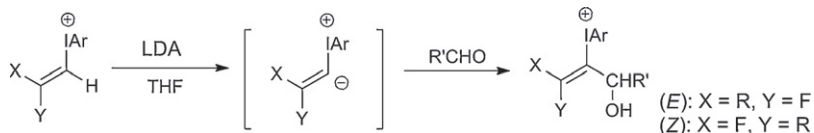


E- or Z-selective synthesis of trisubstituted (2-fluoroalkenyl) iodonium salts by the reaction of (2-fluoroalkenyl)iodonium ylides with aldehydes

Satoshi Shimobaba, Ryuhei Tahara, Shoji Hara

Graduate School of Engineering, Hokkaido University, Sapporo 060-8628, Japan

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Corrigendum to “Microwave promoted one-pot preparation of fluorinated propargylamines and their chemical transformation”
[*J. Fluorine Chem.* 133 (2012) 139–145]

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