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Electrophilic polyfluoroalkylating agents based on sulfonate esters

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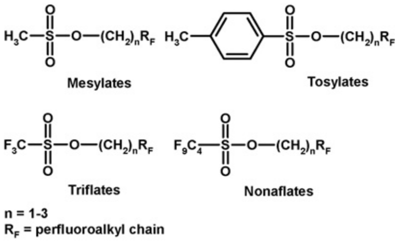
This review surveys selected electrophilic polyfluoroalkylating reagents, polyfluoroalkyl alkane- and arenesulfonates, that have been used for the introduction of longer perfluorinated chains ($C_nF_{2n}+1$; $n \geq 4$) with methylene, ethylene or propylene spacers into the substrate. Polyfluoroalkyl mesylates, tosylates, triflates and nonaflates are described with their applications in various syntheses of polyfluorinated compounds.



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Synthesis of poly[1,1,1,3,3,3-hexafluoro-2-(pentafluorophenyl)propan-2-yl methacrylate]: Thermal and optical properties of the copolymers with methyl methacrylate

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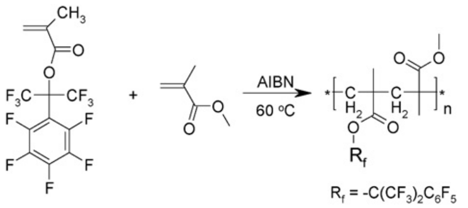
Copolymers of 1,1,1,3,3,3-hexafluoro-2-(pentafluorophenyl)propan-2-yl methacrylate and methyl methacrylate were prepared. Their glass transition temperatures, refractive indices, thermal stabilities, and water absorptions were measured.



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Amination of octafluoronaphthalene in liquid ammonia. 2,6- and 2,7-Diaminohexafluoronaphthalenes selective preparation

Tamara A. Vaganova[a], Soltan Z. Kusov[a], Vladimir I. Rodionov[a], Inna K. Shundrina[a], Georgij E. Sal'nikov[a], Victor I. Mamatyuk[a], Evgenij V. Malykhin[a,b]

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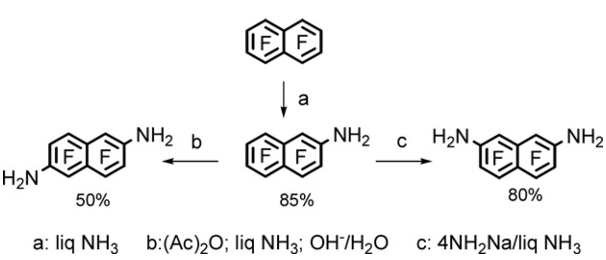

doi:10.1016/S0022-1139(08)00057-2

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Thermal gas-phase reaction of perfluorobuta-1,3-diene with NO_2

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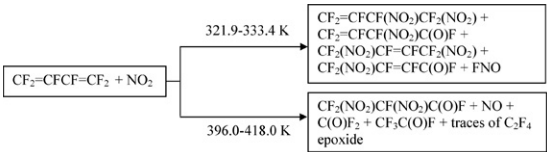

Thermal gas-phase reaction of $CF_2=CFCF=CF_2$ with NO_2 was studied at 321.9, 323.0, 333.4, 396.0 and 418.0 K. Four compounds in the temperature range 312.9–333.4 K are formed: $CF_2=CFCF(NO_2)CF_2(NO_2)$, $CF_2(NO_2)CF=CFCF_2(NO_2)$, $CF_2=CFCF(NO_2)C(O)F$ and $CF_2(NO_2)CF=CFC(O)F$. At 396.0–418.0 K only one compound was generated: $CF_2(NO_2)CF(NO_2)C(O)F$. The mechanisms consistent with experimental results were proposed.

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Quaternary ammonium salt gemini surfactants containing perfluoroalkyl tails catalyzed one-pot Mannich reactions in aqueous media

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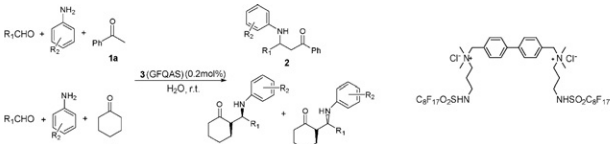

A new perfluorooctylated quaternary ammonium salt (QAS) gemini surfactant was synthesized and used as organic catalyst to promote Mannich reactions in water at room temperature successfully.

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Reductive modification of difluoromethylene moiety in pentafluoropropionyl group

Yutaka Nakamura, Yuu Ozeki, Kenji Uneyama

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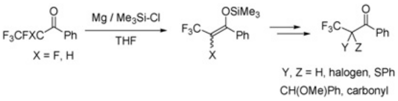

The reductive Mg-promoted defluorinative-silylation of 2,2,3,3,3-pentafluoropropiophenone readily produces the α-trifluoromethyl enol silyl ether, which then reacts with electrophiles to give a variety of 2-substituted-3,3,3-trifluoropropiophenones in excellent yields. The same protocol is applicable for the preparation of enol silyl ether of 3,3,3-trifluoropropiophenone. Fluoride ion catalyzed 1,2-desilylative-defluorination of 2,3,3,3-tetrafluoro-2-trimethylsilyloxypropiophenone provided 3,3,3-trifluoro-1-phenyl-1,2-propanedione in a good yield.

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Synthesis of fluoroalkyl-δ-lactones from polyfluoroalkyl iodides and 5-hexenoic acids

Xiang Fang[a], Qi Ying[a], Yang Chen[a], Xueyan Yang[a], Xianjin Yang[a,b], Fanhong Wu[a,b]

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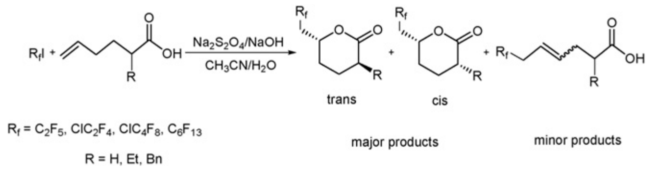

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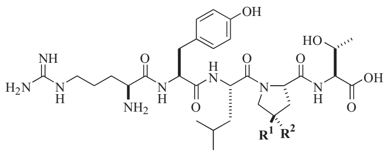
Incorporation of fluoroprolines to proctolin: Study on the effect of a fluorine atom toward peptidic conformation

Takamasa Kitamoto, Taeko Ozawa, Megumi Abe, Shunsuke Marubayashi,
Takashi Yamazaki

Department of Applied Chemistry, Graduate School of Engineering, Tokyo University of Agriculture and Technology, 2-24-16 Nakacho, Koganei 184-8588, Japan

The biologically active pentapeptide, proctolin **1**, and its monofluorinated derivatives **2** and **3** at the 4 position of proline were synthesized, and their conformations were analyzed on the basis of their NOESY spectra.



1 (R^1=H, R^2=H, *Proctolin*)
2 (R^1=**F**, R^2=H)
3 (R^1=H, R^2=**F**)
Proctolin (**1**, R^1=H, R^2=H)
flp^4-Proctolin (**2**, R^1=**F**, R^2=H)
Flp^4-Proctolin (**3**, R^1=H, R^2=**F**)

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Synthesis and physical properties of polyfluoro-acridines bearing perfluoroalkyl chains

Antonio Papagni[a], Paolo Campiglio[a], Marcello Campione[a], Paola Del Buttero[b], Antonio Mani[a], Luciano Miozzo[a], Enrico Tonelli[a]

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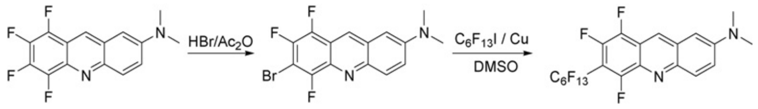
[b]*Dipartimento di Chimica Organica e Industriale, Università degli Studi di Milano, via Venezian 21, I-20133 Milano, Italy*



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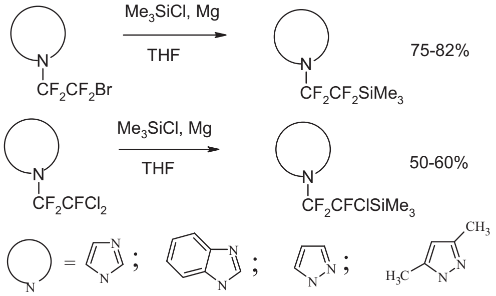
N-Polyfluoro(trimethylsilyl)ethyl azole derivatives

Kirill I. Petko, Sergey Y. Kot, LevB M. Yagupolskii

Institute of Organic Chemistry, National Academy of Science of Ukraine, Murman'ska, str. 5, 02094 Kyiv, Ukraine



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Macrocycles from pentafluoropyridine and tetrafluoropyrimidine

Reza Ranjbar-Karimi[c], Graham Sandford[a], Dmitrii S. Yufit[b], Judith A.K. Howard[b]

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[b]*Chemical Crystallography Group, Department of Chemistry, University of Durham, South Road, Durham DH1 3LE, UK*
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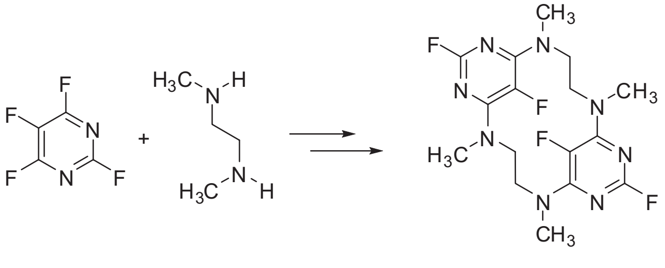

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A kinetic expression for the pyrolytic decomposition of polytetrafluoroethylene

Izak J. van der Walt[a], Hein W.J.P. Neomagus[b], Johann T. Nel[a], O.S.L. Bruinsma[b], Philippus L. Crouse[c]

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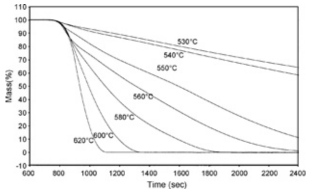
[c]*Fluoro-materials Science & Process Integration, Department of Chemical Engineering, University of Pretoria, Lynnwood Road, Pretoria 0002, South Africa*



The reaction rate for the thermal depolymerization of PTFE is shown to be directly proportional to the surface area and, to a reasonable accuracy, the mass flux from the surfaces of decomposing granular PTFE can be expressed as: