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Graphical Abstracts/J. Fluorine Chem. 128 (2007) 1075–1084

J. Fluorine Chem., 128 (2007) 1087

Fluoride ion-catalyzed desilylative-defluorination for synthetic organic chemistry

Kenji Uneyama

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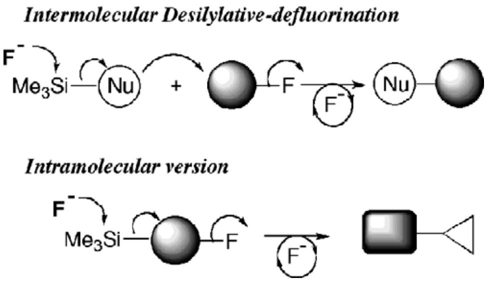
Fluoride ion-catalyzed desilylative-defluorination (intermolecular and intramolecular) has been reviewed.



J. Fluorine Chem., 128 (2007) 1091

Efficient synthesis of *p*-bis-(chlorodifluoromethyl)benzene

William R. Dolbier Jr., Jian-Xin Duan, Xiao X. Rong

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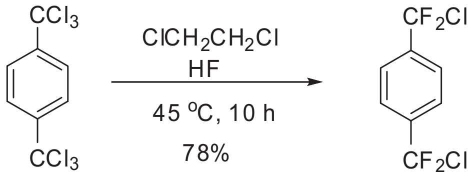
Selective, high yield partial fluorination of hexachloro-*p*-xylene to *p*-bis-(chlorodifluoromethyl)benzene has been accomplished by warming a slurry of the hexachloro-*p*-xylene in anhydrous HF which also contains a small quantity of inert solvent, such as 1,2-dichloroethane.



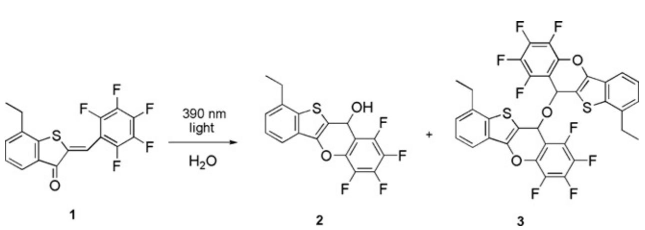
J. Fluorine Chem., 128 (2007) 1094

Novel photoinduced cyclization of pentafluorophenylhemithioindigo

Kiyoshi Tanaka, Kiyoshi Kohayakawa, Takayuki Irie, Satoru Iwata, Kazuto Taguchi

Laboratory of Molecular Control, Faculty of Science and Technology, Seikei University, Musashino-shi, Tokyo 180-8633, Japan

Photoirradiation of **1** causes a novel type of photoinduced cyclization, to produce the intramolecularly cyclized alcohol **2** and its dehydrated ether **3**, instead of the *Z*–*E* isomerized product.



doi:10.1016/S0022-1139(07)00293-X

J. Fluorine Chem., 128 (2007) 1098

Synthesis of 1,1-difluoroethylsilanes and their application for the introduction of the 1,1-difluoroethyl group

Ryo Mogi[a], Kazuo Morisaki[a], Jinbo Hu[b], G.K. Surya Prakash[c], George A. Olah[c]

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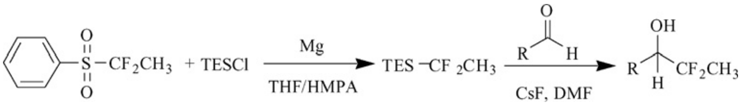
[b]*Shanghai Institute of Organic Chemistry, Chinese Academy of Science, 345 Fenglin Road, Shanghai 200032, China*
[c]*Loker Hydrocarbon Research Institute, Department of Chemistry, University of Southern California, Los Angeles, CA 90089-1661, United States*



J. Fluorine Chem., 128 (2007) 1104

Preparation of fluoroalkyl end-capped oligomers/ magnetite nanocomposites possessing a good dispersibility and stability

Hiroaki Yoshioka[a], Kei-Ichi Ohnishi[b], Hideo Sawada[a]

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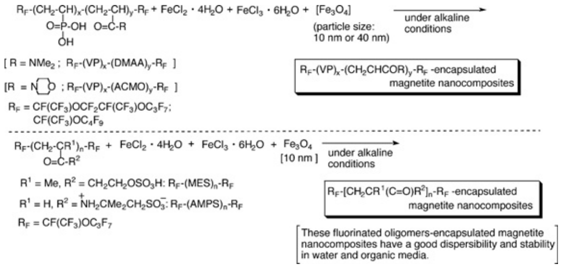
[b]*Asahi Glass Co. Ltd., Yurakucho, Chiyoda-ku, Tokyo 100-8405, Japan*

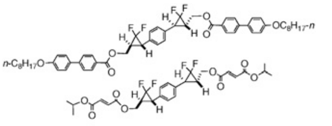


J. Fluorine Chem., 128 (2007) 1112

gem-Difluorocyclopropane as core molecule candidate for liquid crystal compounds

Toshiyuki Itoh[a], Manabu Kanbara[a], Masakazu Ohashi[a], Shuichi Hayase[a], Motoi Kawatsura[a], Takashi Kato[b], Kazutoshi Miyazawa[b], Yumiko Takagi[c], Hidemitsu Uno[d]

[a]*Department of Materials Science, Faculty of Engineering, Tottori University, 4-101 Koyama-minami, Tottori 680-8552, Japan*
[b]*Chisso Petrochemical Corporation, Goi Research Center, Research Laboratory I, 5-1 Goi-kaigan, Ichihara-shi, Chiba 290-8551, Japan*
[c]*Department of Chemistry, Faculty of Education, Kagawa University, 1-1 Saiwai-cho, Taka-matsu 760-8522, Japan*
[d]*Integrated Center for Sciences, Ehime University, 2-5 Bunkyo-cho, Matsuyama 790-8577, Japan*



High helical twisting power compound

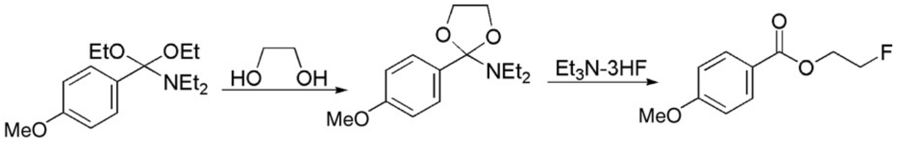
The synthesis of a novel chiral *gem*-difluorocyclopropane building block has been accomplished using chemo-enzymatic reaction protocol and used it as a chiral dopant for achiral nematic liquid crystal.

J. Fluorine Chem., 128 (2007) 1121

Selective mono-fluorination of diols *via* a cyclic acetal of *N*,*N*-diethyl-4-methoxybenzamide

Mitsuhiro Suwada, Tsuyoshi Fukuhara, Shoji Hara

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

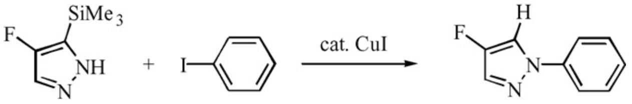


J. Fluorine Chem., 128 (2007) 1126

N-Arylation of 4-fluoro-5-trimethylsilyl-1*H*-pyrazole

Takeshi Hanamoto, Yuhko Iwamoto, Kenji Yamada, Ryoko Anno

Department of Chemistry and Applied Chemistry, Saga University, Honjyo-machi 1, Saga 840-8502, Japan



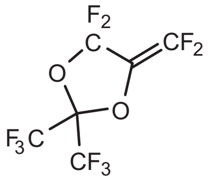
J. Fluorine Chem., 128 (2007) 1131

Synthesis and polymerization of a novel perfluorinated monomer

Eisuke Murotani, Susumu Saito, Masanori Sawaguchi, Hiromasa Yamamoto, Youji Nakajima, Tatsuya Miyajima, Takashi Okazoe

Research Center, Asahi Glass Co., Ltd., 1150 Hazawa-cho, Kanagawa-ku, Yokohama, 221-8755 Japan

The novel perfluorinated monomer was successfully synthesized via a direct fluorination reaction. It polymerized with tetrafluoroethylene to give a highly thermally stable polymer.



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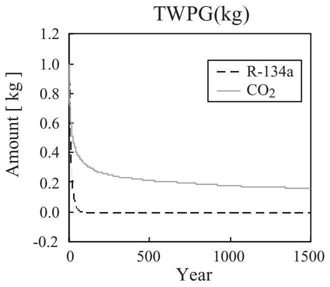
J. Fluorine Chem., 128 (2007) 1137

The evaluation of time variation global warming effects, TWPA and CWP, for CFC alternatives

Akira Sekiya

National Institute of Advanced Industrial Science and Technology (AIST) 5-2.1-1-1, Higashi, Tsukuba, Ibaraki 305-8565, Japan



J. Fluorine Chem., 128 (2007) 1143

Fluorinated *N*-[2-(haloalkyl)phenyl]imidoyl chloride, a key intermediate for the synthesis of 2-fluoroalkyl substituted indole derivatives *via* Grignard cyclization process

Zengxue Wang[a], Fenglian Ge[a], Wen Wan[a], Haizhen Jiang[a], Jian Hao[a,b]

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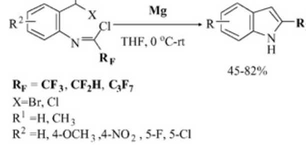
[b]*Key Laboratory of Organofluorine Chemistry, Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences, 354 Fenglin Road, Shanghai 200032, China*



R_F = CF_3, CF_2H, C_3F_7
X=Br, Cl
R^1 =H, CH_3
R^2 =H, 4-OCH_3 ,4-NO_2 , 5-F, 5-Cl

Fluorinated *N*-[2-(haloalkyl)phenyl]imidoyl chloride, which was readily available from the corresponding anilines by using Uneyama's one-pot synthesis of fluorinated imidoyl chloride, was found to be a key intermediate for the facile synthesis of 2-fluoroalkyl substituted indole derivatives *via* the Grignard cyclization process. The bromination of 3-methyl group of 3-methyl-2-trifluoromethyl indole with NBS/CCl_4 led to the formation of 3-bromomethyl substituted indole which can be further utilized to synthesize some new and biologically interested indole derivatives.

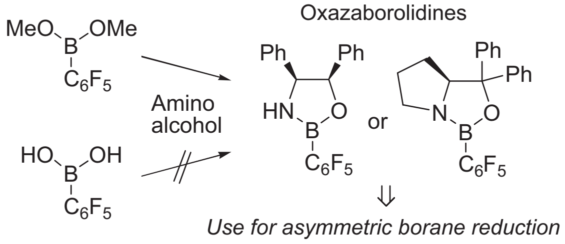
J. Fluorine Chem., 128 (2007) 1153

Synthesis of novel oxazaborolidines *B*-C_6F_5 and their effectiveness as asymmetric catalysts

Toshinobu Korenaga, Fuminao Kobayashi, Kenji Nomura, Shiho Nagao, Takashi Sakai

Division of Chemistry and Biochemistry, Graduate School of Natural Science and Technology, Okayama University, Okayama 700-8530, Japan

Novel oxazaborolidines *B*-C_6F_5 were synthesized by modified protocol from $C_6F_5B(OMe)_2$ in place of usual $C_6F_5B(OH)_2$ for investigation of the effect of C_6F_5 group in asymmetric reduction of ketones.



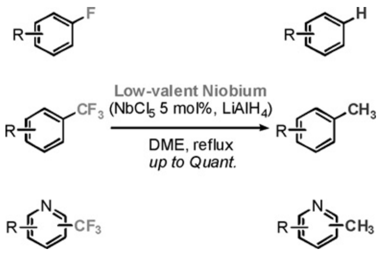
J. Fluorine Chem., 128 (2007) 1158

Hydrodefluorinations by low-valent niobium catalyst

Kohei Fuchibe, Yoshitaka Ohshima, Ken Mitomi, Takahiko Akiyama

Department of Chemistry, Faculty of Science, Gakushuin University, 1-5-1 Mejiro, Toshima-ku, Tokyo 171-8588, Japan

Catalytic hydrodefluorinations of organofluorine compounds by low-valent niobium catalyst were developed. In the presence of niobium(V) chloride (typically, 5 mol%), fluorobenzenes, α,α,α-trifluorotoluenes and (trifluoromethyl)pyridines were hydrodefluorinated with lithium aluminum hydride to give the corresponding benzenes, toluenes and methylpyridines in good yields, respectively.

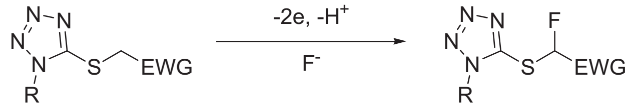


J. Fluorine Chem., 128 (2007) 1168

Electrolytic partial fluorination of organic compounds. 89: Regioselective anodic fluorination of tetrazolyl sulfides

Bakenova Zagipa, Hirokatsu Nagura, Toshio Fuchigami

Department of Electronic Chemistry, Tokyo Institute of Technology, G1-2 4259 Nagatsuta, Midori-ku, Yokohama 226-8502, Japan



R = Me, Ph
EWG = Ph, COOEt, CN

J. Fluorine Chem., 128 (2007) 1174

Synthetic studies of fluorine-containing compounds for household insecticides

Tatsuya Mori[a], Kazuya Ujihara[a], Osamu Matsumoto[a], Kazunori Yanagi[b], Noritada Matsuo[a]

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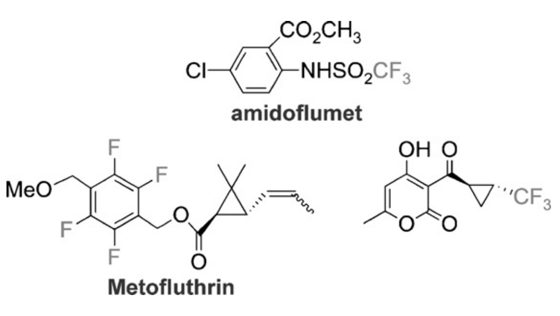
[b]*Genomic Science Laboratory, Dainippon Sumitomo Pharma Co. Ltd., 3-1-98 Kasugadenaka, Konohana, Osaka 554-0022, Japan*

The discovery stories of three fluorine-containing insecticides in our laboratory are described.



J. Fluorine Chem., 128 (2007) 1182

Nucleophilic addition of 3,3,3-trifluoropropynyllithium to D-glyceraldimine: Concise synthesis of both enantiomers of 5,5,5-trifluoronorvaline

Qi Chen[a], Xiao-Long Qiu[b], Feng-Ling Qing[a,b]

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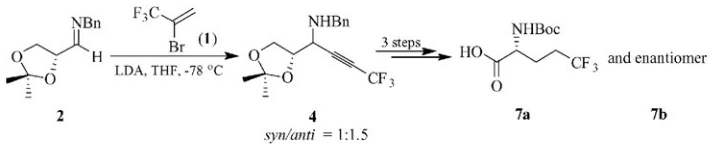
[b]*Institute of Biological Sciences and Biotechnology, Donghua University, 2999 North Renmin Lu, Shanghai 201620, China*

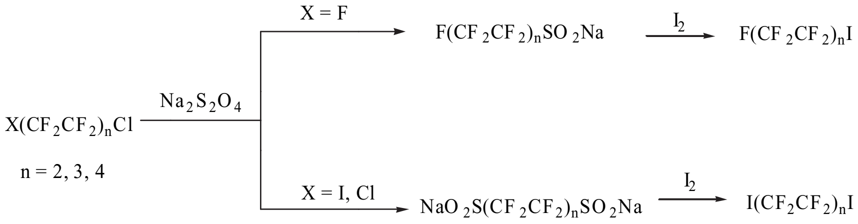


J. Fluorine Chem., 128 (2007) 1187

Practical and efficient synthesis of perfluoroalkyl iodides from perfluoroalkyl chlorides via modified sulfinatodehalogenation

Hai-Ping Cao, Qing-Yun Chen

Key Laboratory of Organofluorine Chemistry,
Shanghai Institute of Organic Chemistry,
Chinese Academy of Sciences, 354 Fenglin Lu,
Shanghai 200032, China

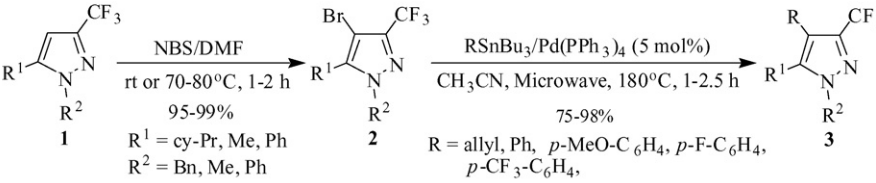


J. Fluorine Chem., 128 (2007) 1191

Synthesis of novel 1,4,5-trisubstituted 3-trifluoromethylpyrazoles via microwave-assisted Stille coupling reactions

Sung Lan Jeon[a], Ji Hoon Choi[a],
Bum Tae Kim[b], In Howa Jeong[a]

[a]*Department of Chemistry, Yonsei University, Wonju 220-710, South Korea*
[b]*Korea Research Institute of Chemical Technology, Daejeon 305-606, South Korea*

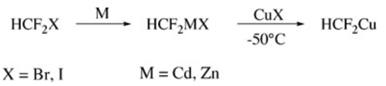


J. Fluorine Chem., 128 (2007) 1198

The preparation of HCF_2CdX and HCF_2ZnX *via* direct insertion into the carbon halogen bond of CF_2HY (Y = Br, I)

Donald J. Burton, Greg A. Hartgraves

Department of Chemistry, University of Iowa, Iowa City, IA 52242, United States



Difluoromethylcadmium is readily prepared by oxidative addition of cadmium with iododifluoromethane and bromodifluoromethane. The difluoromethylcadmium reagent is thermally stable to 65–70 °C; rapid decomposition occurs at temperatures >105 °C. At room temperature the reagent is stable for weeks and only loses 31% of its activity after 2 months at RT. The difluoromethylcadmium reagent reacts readily with allylic halides at RT to give products of both α- and γ-attack in good yields. Metathesis of the difluoromethylcadmium reagent with Cu(I)X (X = Cl, Br) in DMF at −55 °C readily gives the difluoromethylcopper reagent. The copper reagent is stable only at low temperatures (−30 to −55 °C) and rapidly decomposes to HCF_2CF_2H and *cis*-CFH=CFH above these temperatures. However, HCF_2Cu is more nucleophilic than HCF_2CdX, and the copper reagent readily reacts with allylic halides at −55 °C. The regiospecificity of HCF_2Cu is vastly superior to HCF_2CdX and most of the reactions of HCF_2Cu with allylic halides occur regiospecifically. When HCF_2CdX is reacted with propargylic halides or tosylates, the predominant product is the corresponding allene. The HCF_2Cu reagent again is more reactive, completely regiospecific, and in most cases gives good isolated yields of the allenes. The HCF_2Cu reagent also readily couples with 1-iodoalkynes and 1-iodoperfluoroalkynes to give good yields of the corresponding difluoromethylalkynes. The HCF_2Cu reagent only undergoes alkylation with reactive alkylating agents, such as chloromethyl ethyl ether and benzyl bromide. Reaction with allylic halides, propargyl halides and 1-iodoalkynes provides HCF_2-substituted allylic halides; HCF_2-allenes and $HCF_2C{\equiv}CR(R_F)$.

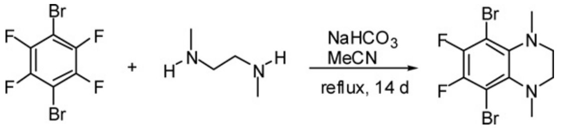
J. Fluorine Chem., 128 (2007) 1216

Functional tetrahydroquinoxalines from perfluoroaromatic precursors

Graham Sandford[a], Andrzej Tadeusiak[a], Dmitrii S. Yufit[b], Judith A.K. Howard[b]

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

Polyfluorobenzene derivatives gave tetrahydroquinoxaline systems upon reaction with *N,N′*-dimethylethylene diamine.

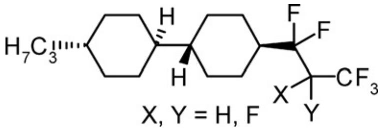


J. Fluorine Chem., 128 (2007) 1221

Liquid crystals with partially fluorinated side chains: Highly polar materials with very low birefringence

Peer Kirsch[a], Marc Lenges[b], Andreas Ruhl[b], Florian Huber[b], Richard D. Chambers[c], Graham Sandford[c]

[a]*Merck Ltd. Japan, Liquid Crystal Technical Center, 4084 Nakatsu, Aikawa-machi, Aiko-gun, Kanagawa 243-0303, Japan*
[b]*Merck KGaA, Liquid Crystals Division, D-64271 Darmstadt, Germany*
[c]*University of Durham, South Road, Durham, UK DH1 3LE, UK*



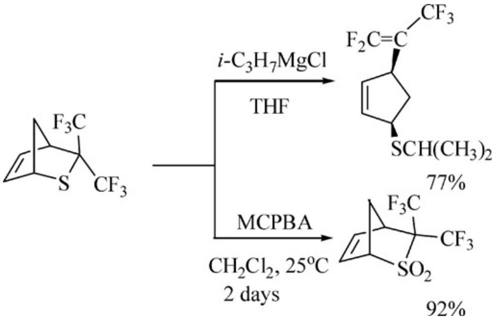
Highly polar liquid crystals with very low birefringence were synthesized and charaterized. Their mesophases and electrooptical properties were interpreted using a detailed computational analysis of the conformational equilibrium.

J. Fluorine Chem., 128 (2007) 1227

Reactivity of fluorinated sulfur-containing heterocycles towards nucleophilic and oxidizing reagents

Viacheslav A. Petrov[a], Steve Lustig[a], Will Marshall[b]

[a]*DuPont Central Research and Development, Experimental Station, P.O. Box 80328, Wilmington, DE 19880-0328, USA*[1]
[b]*DuPont Corporate Center for Analytical Sciences, Experimental Station, P.O. Box 80328, Wilmington, DE 19880-0328, USA*

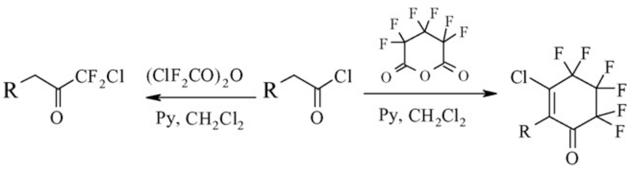


J. Fluorine Chem., 128 (2007) 1235

Evaluation of Zard trifluoromethylketone synthesis for the preparation of potential bifunctional fluorinated synthons

Patrick Diter, Emmanuel Magnier, Jean-Claude Blazejewski

Institut Lavoisier de Versailles, UMR CNRS 8180, Université de Versailles, St Quentin en Yvelines, 45 avenue des Etats-Unis, 78035 Versailles Cedex, France

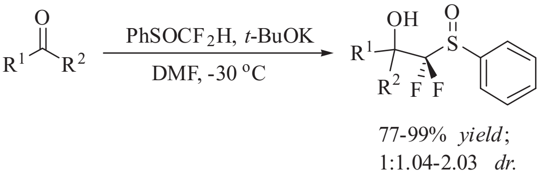


J. Fluorine Chem., 128 (2007) 1241

Nucleophilic (phenylsulfinyl)difluoromethylation of carbonyl compounds with difluoromethyl phenyl sulfoxide

Lingui Zhu[a], Ya Li[a], Chuanfa Ni[a], Jinbo Hu[a], Petr Beier[b], Ying Wang[b],
G.K. Surya Prakash[b], George A. Olah[b]

[a]*Key Laboratory of Organofluorine Chemistry, Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences, 354 Fenglin Road, Shanghai 200032, China*
[b]*Loker Hydrocarbon Research Institute and Department of Chemistry, University of Southern California, Los Angeles, CA 90089-1661, USA*



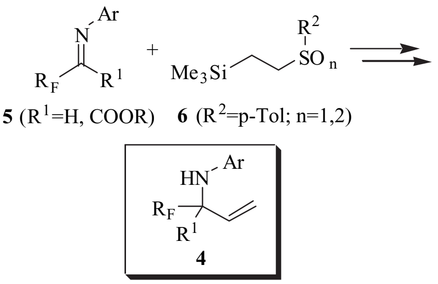
J. Fluorine Chem., 128 (2007) 1248

Synthesis of fluorinated allylic amines: Reaction of 2-(trimethylsilyl)ethyl sulfones and sulfoxides with fluorinated imines

Santos Fustero[a,b], Sonia Flores[a], Ana C. Cuñat[a], Diego Jiménez[a], Carlos del Pozo[a], Jorge Bueno[b], Juan F. Sanz-Cervera[a,b]

[a]*Departamento de Química Orgánica, Universidad de Valencia, E-46100 Burjassot, Spain*
[b]*Centro de Investigación Príncipe Felipe, E-46013 Valencia, Spain*

A new synthesis of fluorinated allylamines through the reaction of 2-(trimethylsilyl)ethyl sulfones and sulfoxides with imines and imino esters is described.

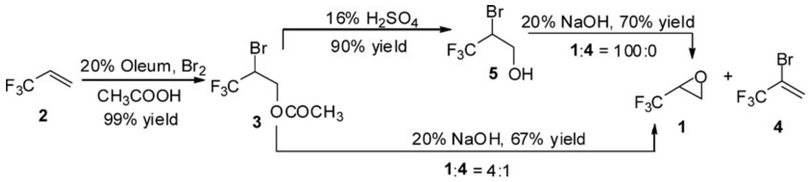


J. Fluorine Chem., 128 (2007) 1255

Preparative-scale synthesis of 3,3,3-trifluoropropene oxide

P. Veeraraghavan Ramachandran, Kamlesh J. Padiya

Department of Chemistry, Purdue University, 560 Oval Drive, West Lafayette, IN 47907-2084, United States



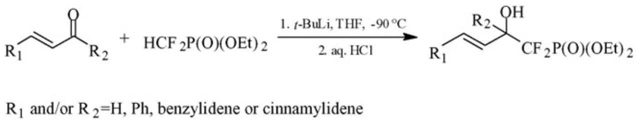
Bromination of 3,3,3-trifluoropropene in 20% oleum, followed by treatment with acetic acid furnishes 2-bromo-3,3,3-trifluoropropyl acetate in quantitative yield, which upon acid hydrolysis and cyclization with alkali affords 3,3,3-trifluoropropene oxide (TFPO) in 63% overall yield.

J. Fluorine Chem., 128 (2007) 1260

Simple synthesis of some unsaturated 1,1-difluoro-2-hydroxyethylphosphonates

Romana Pajkert, Henryk Koroniak

Adam Mickiewicz University, Faculty of Chemistry, Grunwaldzka 6, 60-780 Poznań, Poland



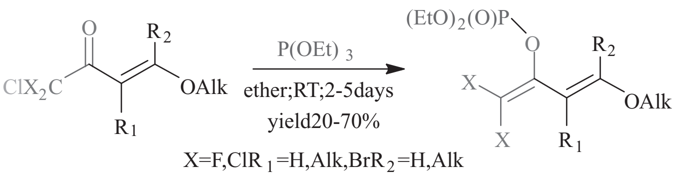
J. Fluorine Chem., 128 (2007) 1264

Reactions of β-alkoxyvinyl trihalogenomethyl ketones with triethyl phosphite

Karen V. Tarasenko, Igor I. Gerus, Valery P. Kukhar

Department of Fine Organic Synthesis, Institute of Bioorganic Chemistry and Petrochemistry NUAS, Murmanskaya Str. 1, Kiev 02094, Ukraine

The Perkow reaction of triethyl phosphite and β-alkoxyvinyl trihalogenomethyl ketones, which have common acyclic or cyclic structural fragment: –O–C=C–C(O)CX_2Cl, yielded dienyl phosphates: –O–C=C–C[OP(O)$(OEt)_2$]=CX_2 where X = F or Cl.

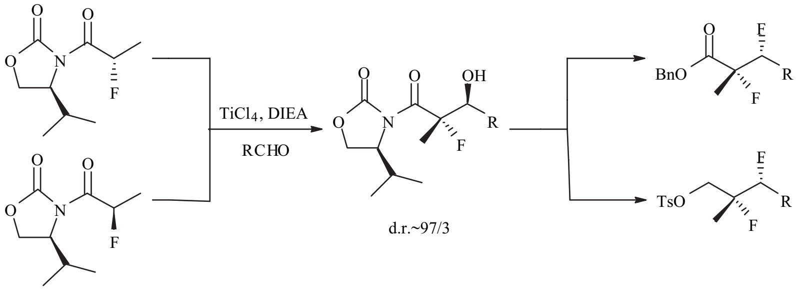


J. Fluorine Chem., 128 (2007) 1271

Titanium mediated asymmetric aldol reaction with α-fluoropropionimide enolates

Vincent A. Brunet, David O'Hagan, Alexandra M.Z. Slawin

School of Chemistry and Centre for Biomolecular Sciences, University of St Andrews, St Andrews KY16 9ST, UK



J. Fluorine Chem., 128 (2007) 1280

Difluoromethylene compounds as precursors to ketones, carboxylic acids, esters, amides and carbonates

Yong Guo, Jean'ne M. Shreeve

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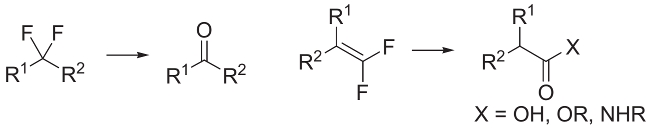

A review of difluoromethylene compounds as precursors to carbonyl compounds. Many ketones, carboxylic acids, esters, amides and carbonates, especially trifluoroalanine dipeptides, can be easily achieved due to the reactivity of difluoromethylene compounds or generated through the reactive difluoromethylene intermediates.

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Indium-mediated reduction of β-aminovinyl chloro-difluoromethylated ketones in the presence of heteroaryl aldehydes. A mild entry to novel difluoromethylene enaminone derivatives

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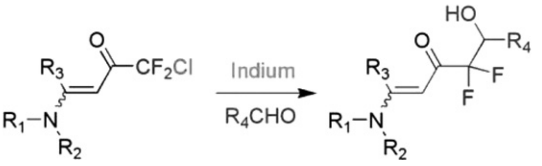

J. Fluorine Chem., 128 (2007) 1300

Fluoride-induced coupling of perfluoroketene dithioacetals with silyl alkynes: A way towards new polyfunctionalized trifluoromethyl building blocks

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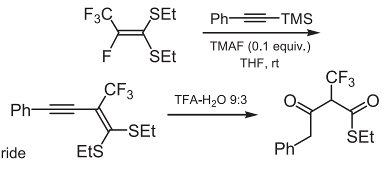

Metal free sila-Sonogashira coupling with a vinyl fluoride

J. Fluorine Chem., 128 (2007) 1306

Synthesis of optically active 2-fluoroalk-1-en-3-yl esters and chirality transfer in their Claisen-type rearrangements

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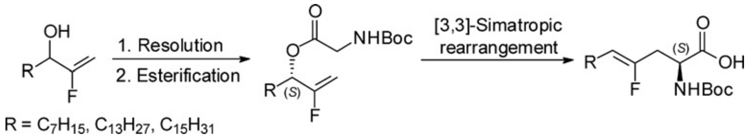

J. Fluorine Chem., 128 (2007) 1318

Nucleophilic trifluoromethylation of aryl halides with methyl trifluoroacetate

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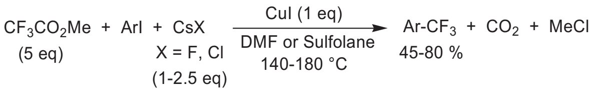

$$\underset{(5\ eq)}{CF_3CO_2Me} + ArI + \underset{\substack{X = F,\ Cl\\(1\text{-}2.5\ eq)}}{CsX} \xrightarrow[\substack{DMF\ or\ Sulfolane\\140\text{-}180\ °C}]{CuI\ (1\ eq)} \underset{45\text{-}80\ \%}{Ar\text{-}CF_3} + CO_2 + MeCl$$

Associated with cesium fluoride or cesium chloride and CuI, methyl trifluoroacetate (MTFA) constitutes a trifluoromethylating agent for substituting aromatic (or heteroaromatic) iodides and bromides.

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Syntheses and lipophilicity measurement of N^{α}/*N*-terminus-1,1-dihydroperfluoroalkylated α-amino acids and small peptides

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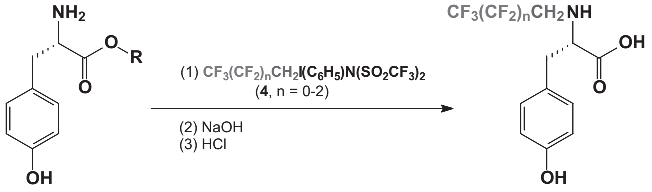
Preparation of N^{α}-1,1-dihydroperfluoroalkylated (L)tyrosines.



J. Fluorine Chem., 128 (2007) 1335

Microfluidic behaviour of perfluoropolyether fluids in poly(dimethylsiloxane) micro-channels

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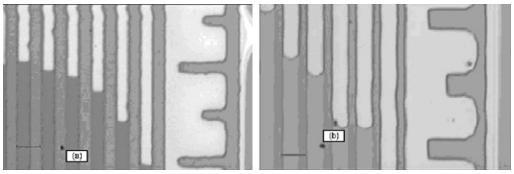

The behaviour of different perfluoropolyether-based fluids has been studied in a microfluidic setup. It has been compared with the behaviour of a low viscosity, high-fragility polyurethane structural adhesive commonly used for the fabrication of sub-micrometer structures.