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Graphical Abstracts/J. Fluorine Chem. 130 (2009) 1063–1067

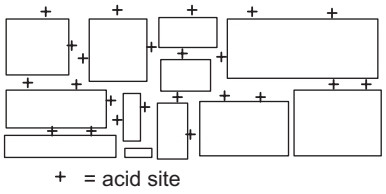
J. Fluorine Chem., 130 (2009) 1069

Investigating acidity of metal fluoride surfaces by spectroscopic and chemical methods

John M. Winfield

Department of Chemistry, University of Glasgow, Joseph Black Building, Glasgow G12 8QQ, Scotland, UK

Surface acidity in recently synthesised, high surface area aluminium and magnesium fluoride derivatives is discussed in terms of relative site strengths and site accessibilities.



J. Fluorine Chem., 130 (2009) 1080

Study of the fluorination of carbon anode in molten KF-2HF by XPS and NMR investigations

I. Crassous[a], H. Groult[a], F. Lantelme[a], D. Devilliers[a], A. Tressaud[b], C. Labrugère[b], M. Dubois[c], C. Belhomme[d], A. Colisson[d], B. Morel[d]

[a]*UPMC Univ Paris 06, UPMC-ESPCI-CNRS UMR 7195, Laboratoire PECSA, 4 Place Jussieu, Paris F-75005, France*

[b]*Institut de Chimie de la Matière Condensée de Bordeaux ICMCB-CNRS, Université Bordeaux 1, 87 Av Dr. A. Schweitzer, 33608 PESSAC Cedex, France*

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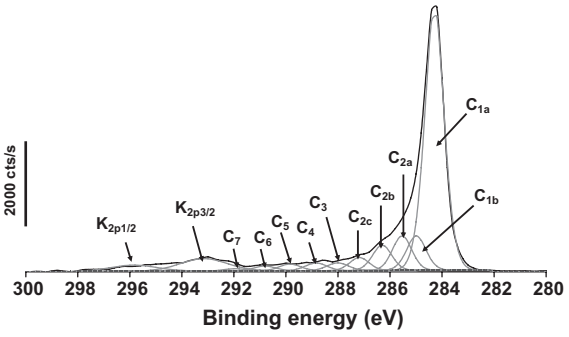


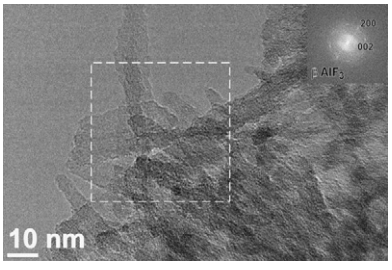
J. Fluorine Chem., 130 (2009) 1086

Recent developments in the preparation of high surface area metal fluorides

Tomaž Skapin, Gašper Tavčar, Andreja Benčan, Zoran Mazej

Jožef Stefan Institute, Jamova 39, SI-1000 Ljubljana, Slovenia

High surface area metal fluorides obtained by oxidative decomposition of hydrazinium fluorometalates are nanostructured. In the case of AlF_3, 3–10 nm crystallites of α-AlF_3 and β-AlF_3 are formed.



doi:10.1016/S0022-1139(09)00303-0

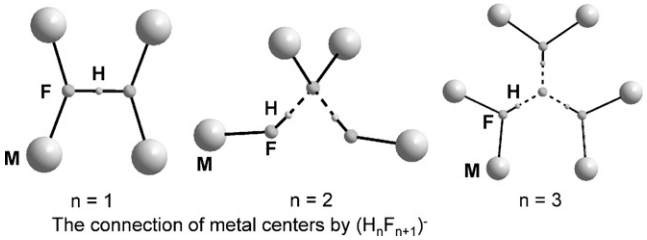
J. Fluorine Chem., 130 (2009) 1093

HF molecules and poly(hydrogen fluoride) anions as ligands to metal centers

Melita Tramšek, Evgeny Goreshnik, Matic Lozinšek, Boris Žemva

Jožef Stefan Institute, Jamova 39, SI-1000 Ljubljana, Slovenia

Role of the HF molecules and poly(hydrogen flouride) anions connected to metal centers in solid state is to stabilize the structures.



The connection of metal centers by $(H_nF_{n+1})^-$

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Evidence of 13 hybrid fluoroaluminates in the composition space diagram of the $Al(OH)_3$–*tren*–HF–ethanol system

Karim Adil, Marc Leblanc, Vincent Maisonneuve

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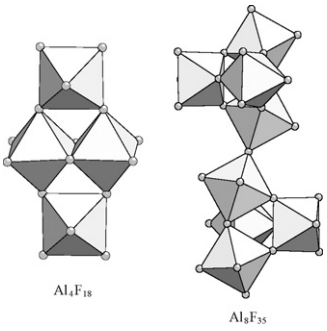
Thirteen phases are now evidenced in the composition space diagram of the $Al(OH)_3$–*tren*–HF–ethanol system at 190 °C. Solvothermal syntheses are performed under microwave heating. Six new organic–inorganic fluorides crystallise and their structures are determined.



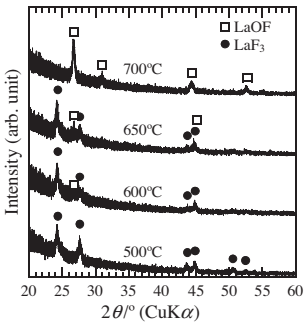
J. Fluorine Chem., 130 (2009) 1106

Chemical processing for inorganic fluoride and oxyfluoride materials having optical functions

Shinobu Fujihara, Kazuaki Tokumo

Department of Applied Chemistry, Faculty of Science and Technology, Keio University, 3-14-1 Hiyoshi, Kohoku-ku, Yokohama 223-8522, Japan

This article summarizes fundamentals and possible applications of optically useful inorganic fluoride and oxyfluoride materials, with emphasis on porous single-layer anti-reflective coatings and visible photoluminescence of doped Eu^{3+} or Eu^{2+} ions. Furthermore, our recent results on LaF_3:Ce^{3+} and LaOF:Ce^{3+} are originally reported here.



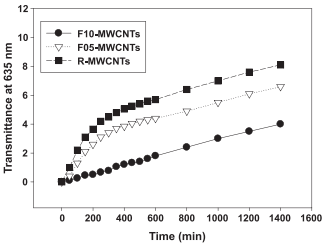
J. Fluorine Chem., 130 (2009) 1111

Fluorination effects of MWCNT additives for EMI shielding efficiency by developed conductive network in epoxy complex

Ji Sun Im[a], In Jun Park[b], Se Jin In[c], Taejin Kim[d], Young-Seak Lee[a]

[a]*Department of Fine Chemical Engineering and Applied Chemistry, BK21-E²M, Chungnam National University, Daejeon 305-764, Republic of Korea*
[b]*Biorefinery Research Center, Korea Research Institute of Chemical Technology, Daejeon 305-343, Republic of Korea*
[c]*Department of Fire and Disaster Protection Engineering, Woosong University, Daejeon 300-718, Republic of Korea*
[d]*Core Technology Research Center for Fuel Cell, Jeollabuk-do 561-844, Republic of Korea*

The dispersion of fluorinated MWCNTs measured by IR. The dispersion of MWCNTs is improved by fluorination, which can result in EMI shielding efficiency.



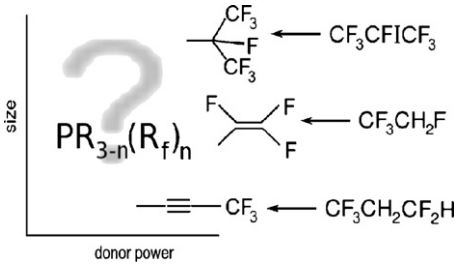
J. Fluorine Chem., 130 (2009) 1117

Fluoroalkenyl, fluoroalkynyl and fluoroalkyl phosphines

Kulbinder K. Banger, Alan K. Brisdon, Christopher J. Herbert, Hana Ali Ghaba, Ian S. Tidmarsh

School of Chemistry, The University of Manchester, Manchester M13 9PL, UK

A review of the methods for the preparation of P(III) compounds containing directly bound fluoroalkenyl, fluoroalkynyl and fluoroalkyl groups is given. Recent advances in the synthesis of organofluoro-containing phosphines are reported, including a new high yielding route to bulky fluoroalkyl-containing phosphines.

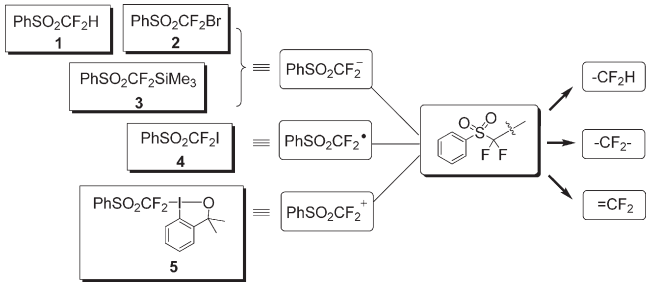


J. Fluorine Chem., 130 (2009) 1130

Nucleophilic, radical, and electrophilic (phenylsulfonyl)difluoromethylations

Jinbo Hu

Key Laboratory of Organofluorine Chemistry, Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences, 345 Ling-Ling Road, Shanghai 200032, China

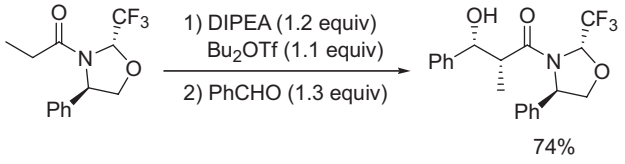


J. Fluorine Chem., 130 (2009) 1140

Asymmetric aldol reactions using chiral CF_3-Oxazolidines (Fox) as chiral auxiliary

Arnaud Tessier, Julien Pytkowicz, Thierry Brigaud

Université de Cergy-Pontoise, UMR CNRS 8123, Laboratoire SOSCO, F-95000 Cergy-Pontoise, France



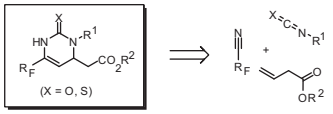
J. Fluorine Chem., 130 (2009) 1145

A new strategy for the synthesis of fluorinated 3,4-dihydropyrimidinones

Santos Fustero[ab], Silvia Catalán[a], José Luis Aceña[b], Carlos del Pozo[a]

[a]*Departamento de Química Orgánica, Universidad de Valencia, E-46100 Burjassot, Spain*
[b]*Laboratorio de Moléculas Orgánicas, Centro de Investigación Príncipe Felipe, E-46012 Valencia, Spain*

A new family of 3,4-dihydropyrimidinones (DHPMs) bearing fluorinated substituents at C6 have been prepared from *gem*-difluorinated nitriles, alkyl 3-butenoates and iso(thio)cyanates. This novel Biginelli-type process relies on the γ-addition of the ester-derived enolate to fluorinated nitriles. A tandem nucleophilic addition aza-Michael reaction sequence completes the synthetic process.

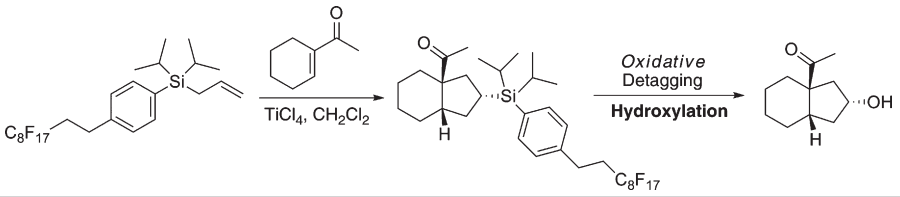


J. Fluorine Chem., 130 (2009) 1151

Oxidative detagging of fluorous organosilanes

Sophie Boldon[a], Jane E. Moore[b], Véronique Gouverneur[a]

[a]*Chemical Research Laboratory, University of Oxford, 12 Mansfield Road, Oxford OX1 3TA, UK*
[b]*AstraZeneca UK, Alderley Park, Cheshire SK10 4TG, UK*

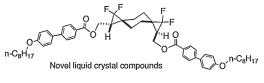


J. Fluorine Chem., 130 (2009) 1157

Chemo-enzymatic synthesis of spiro type gem-difluorocyclopropane as core molecule candidate for liquid crystal compounds

Toshiyuki Itoh[a], Manabu Kanbara[a], Shino Nakajima[a], Yusuke Sakuta[a], Shuichi Hayase[a], Motoi Kawatsura[a], Takashi Kato[b], Kazutoshi Miyazawa[b], Hidemitsu Uno[c]

[a]*Department of Chemistry and Biotechnology, Graduate School of Engineering, Tottori University, 4-101 Koyama-minami, Tottori 680-8552, Japan*
[b]*Chisso Petrochemical Corporation, Goi Research Center, Research Laboratory I, 5-1 Goikaigan, Ichihara-shi, Chiba 290-8551, Japan*
[c]*Department of Chemistry and Biology, Graduate School of Science and Engineering, Ehime University, Matsuyama 790-8577, Japan*



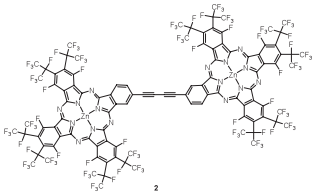
The synthesis of a novel spiro type gem-difluorocyclopropane building block has been accomplished using chemo-enzymatic reaction protocol and used it as a chiral dopant for achiral nematic liquid crystal.

J. Fluorine Chem., 130 (2009) 1164

Synthesis, photophysical and electrochemical properties of perfluoroisopropyl substituted binuclear phthalocyanine conjugated with a butadiyne linker

Norio Shibata, Banibrata Das, Masamichi Hayashi, Shuichi Nakamura, Takeshi Toru

Department of Frontier Materials, Graduate School of Engineering, Nagare College, Nagoya Institute of Technology, Gokiso, Showa-ku, Nagoya 466-8555, Japan



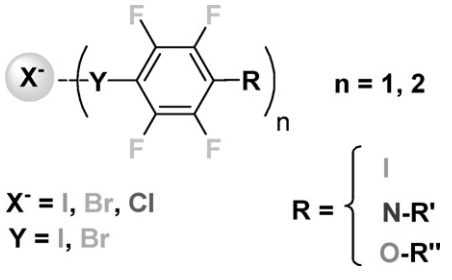
Synthesis of 1,3-butadiyne-bridged perfluoroisopropyl binuclear phthalocyanine **2** has been successfully achieved from unsymmetrical A_3B-type iodo-perfluoroisopropyl phthalocyanine by palladium-catalyzed cross-coupling with trimethylsilylacetylene and copper-catalyzed Glaser homo-coupling as key reactions. The dyad **2** essentially remains non-aggregated irrespective of solvent and concentration. Electrochemical analysis suggests oxidation is not possible whereas the molecule is more easily reduced. All the results are advantages for photodynamic therapy (PDT).

J. Fluorine Chem., 130 (2009) 1171

Halide anions driven self-assembly of haloperfluoroarenes: Formation of one-dimensional non-covalent copolymers

Antonio Abate[a], Serena Biella[a], Gabriella Cavallo[a], Franck Meyer[a], Hannes Neukirch[a], Pierangelo Metrangolo[a], Tullio Pilati[b], Giuseppe Resnati[a], Giancarlo Terraneo[a]

[a]*NFMLab-Department of Chemistry, Materials and Chemical Engineering "Giulio Natta", Politecnico di Milano, Via L. Mancinelli 7, 20131 Milan, Italy*
[b]*C.N.R.-I.S.T.M., University of Milan, Via C. Golgi 19, 20133 Milan, Italy*



Halide anions driven self-assembly of haloperfluoroarenes: formation of one-dimensional non-covalent copolymers.

J. Fluorine Chem., 130 (2009) 1178

A new paradigm for protein design and biological self-assembly

Gizem Akçay[a], Krishna Kumar[abc]

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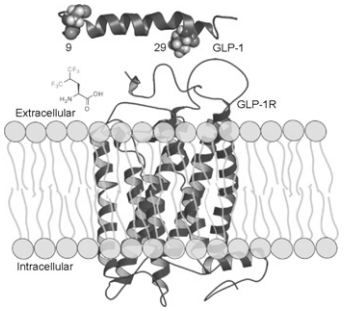
[c]*Cancer Center, Tufts Medical Center, Boston, MA 02110, United States*

Cartoon drawing of glucagon-like peptide-1 (GLP-1) poised to interact with its cognate receptor (GLP-1R). Several fluorinated analogues of GLP-1 containing hexafluoroleucine (shown) were prepared and their interaction with GLP-1R and subsequent cAMP production quantified. Residues 9 and 29 are highlighted in space filling depiction in GLP-1 and are representative of the replacements.



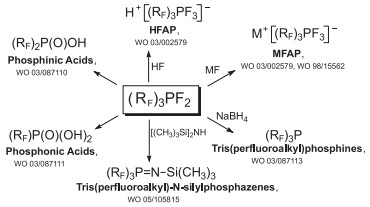
J. Fluorine Chem., 130 (2009) 1183

Electrochemical fluorination (Simons process) – A powerful tool for the preparation of new conducting salts, ionic liquids and strong Brønsted acids

N.V. Ignat'ev[a], H. Willner[b], P. Sartori[c]

[a]*Merck KGaA, PC-RL, Ionic Liqud Research Laboratory, Frankfurter Str. 250, D-64293, Darmstadt, Germany*
[b]*Inorganic Chemistry, Bergische University Wuppertal, Gaußstr.20, D-47097, Wuppertal, Germany*
[c]*Professor Emeritus, Inorganic Chemistry, University of Duisburg-Essen, Lotharstrasse 1, D-47048, Duisburg, Germany*

Electrochemical fluorination (Simons process) provides a cheap commercial access to a series of tris(perfluoroalkyl)diflurophosphoranes. These substances are convenient starting material for the preparation of various fluoro-chemicals.



J. Fluorine Chem., 130 (2009) 1192

Original fluorinated surfactants potentially non-bioaccumulable

Georgi Kostov, Frédéric Boschet, Bruno Ameduri

Institut Charles Gerhardt, Ingénierie et Architectures Macromoléculaires, UMR CNRS 5253, Ecole Nationale Supérieure de Chimie de Montpellier, 8 Rue de l'Ecole Normale, 34296 Montpellier, France

The objective of this minireview concerns various strategies for synthesizing non-bioaccumulable alternatives to PFOA.