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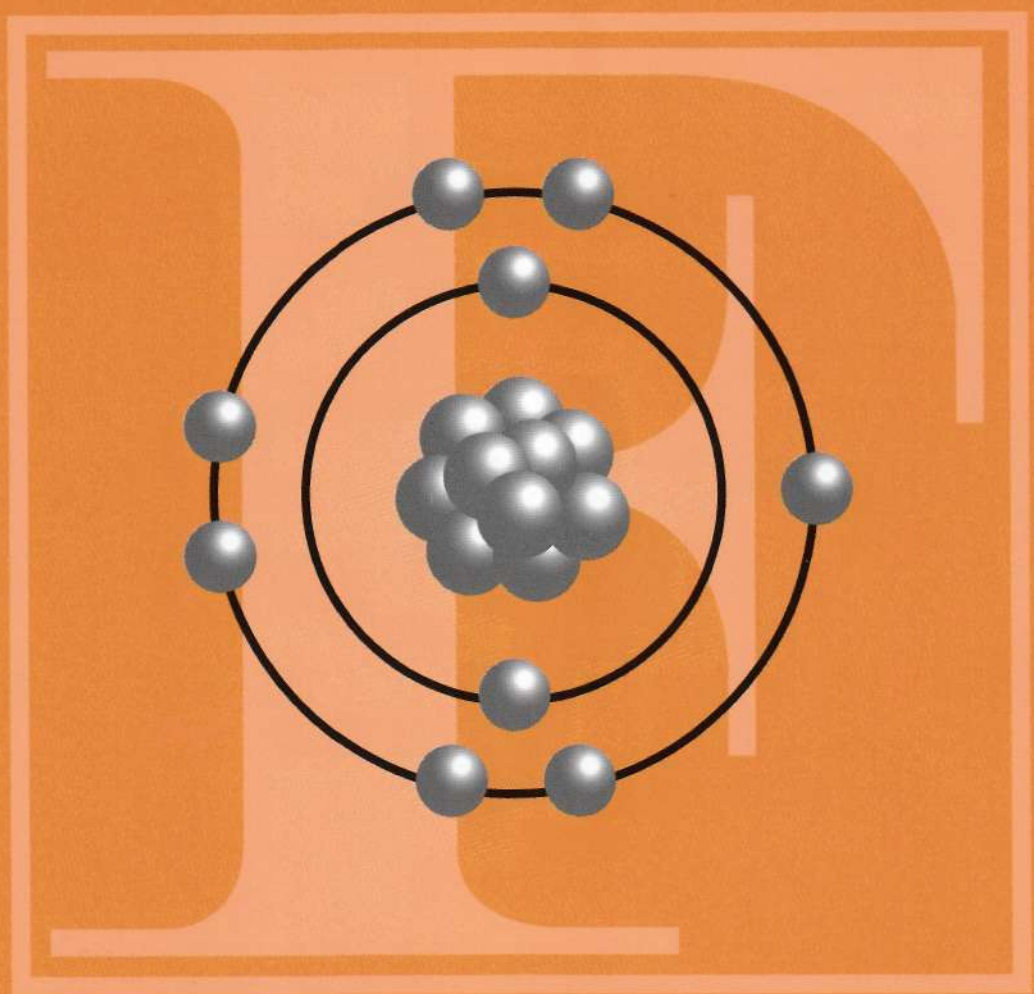

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Journal of Fluorine Chemistry

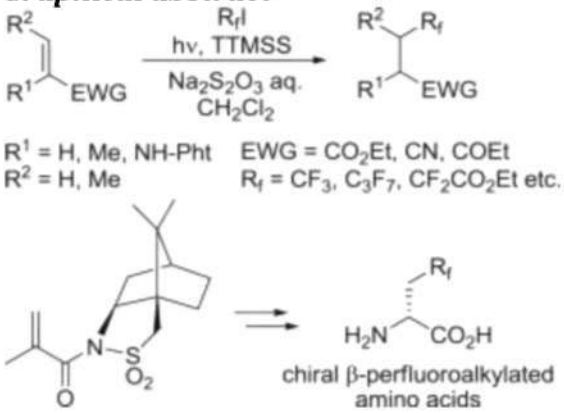
Volume 150, Pages 1-124 (June 2013)

Editorial Board

Full Length Articles

Photoinduced radical hydroperfluoroalkylation and the synthesis of fluorinated amino acids and peptides

Graphical abstract

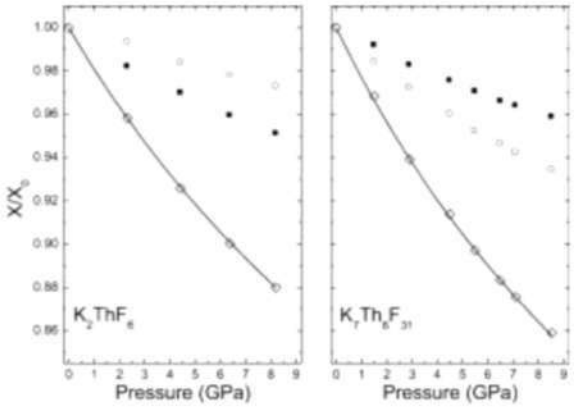


Highlights

► Development of photo-induced radical hydroperfluoroalkylation of olefins including dehydroamino acid, using TTMSS as a H-donor. ► Highly stereoselective reaction via chiral auxiliary method. ► Efficient method for the synthesis of chiral β-perfluoroalkylated amino acids.

Crystal structures and stability of K_2ThF_6 and $K_7Th_6F_{31}$ on compression

Graphical abstract



Highlights

► Moderate high pressure has no effect on structures of complex thorium fluorides. ► Their compressibility entirely depends on the alkali metal present in the structure. ► The heavier the alkali metal the lower the bulk modulus of complex thorium fluorides.

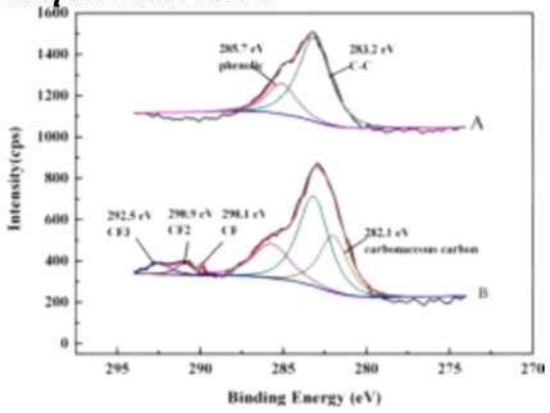
Coke deactivation of activated carbon-supported rubidium–potassium catalyst for C_2F_5I gas-phase synthesis

Original Research Article

Pages 21-24

Aiqin Mao, Hua Wang, Renming Pan

Graphical abstract



Highlights

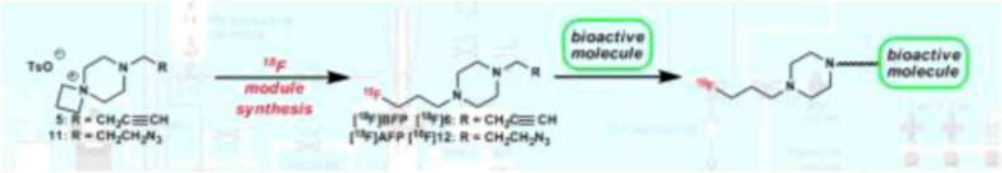
► The catalyst deactivation is caused mainly by the deposition of coke. ► The coke species include carbonaceous carbon and fluorocarbons with low F/C radio. ► The coke can be burnt out by the addition of O_2 at 150–350 °C. ► The reactivated catalysts exhibit catalytic activity as high as the fresh sample.

Automated preparation of [^{18}F]AFP and [^{18}F]BFP: Two novel bifunctional ^{18}F-labeling building blocks for Huisgen-click

Original Research Article
Pages 25-35
Marc Pretze, Constantin Mamat

Graphical abstract

Two capable and universally applicable fluorine-18 containing building blocks were prepared in a remotely controlled module synthesis for the radiolabeling of azide or alkyne functionalized amino acids or peptides under mild conditions with the bioorthogonal Huisgen click reaction.

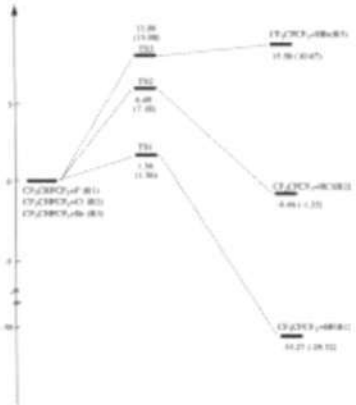


Theoretical study on the hydrogen abstraction reactions of CF_3CHFCF_3 and $CF_3CF_2CHF_2$ with X atoms (X = F, Cl, and Br)

Original Research Article
Pages 39-45
Yanhua Fan, Jinmiao Wen, Yuan Zhao, Li Wang

Graphical abstract

Schematic pathways for the reactions CF3CHFCF3 + X (X = F, Cl, and Br). Relative energies with ZPE correction at the G3(MP2)//MPW1K/6-311+G(d,p) level are in kcal mol^{-1}.

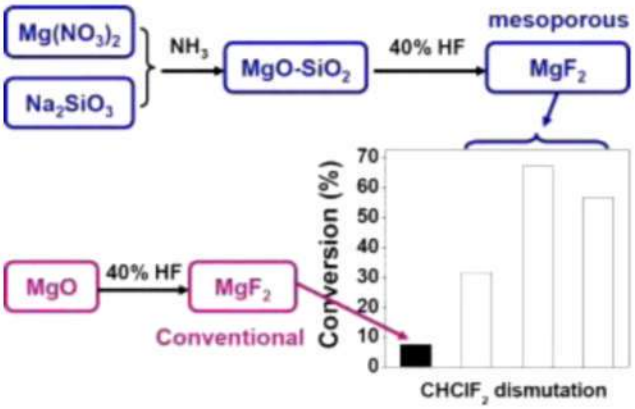


SiO_2-template synthesis of mesoporous MgF_2 highly effective for Cl/F exchange reaction

Original Research Article
Pages 46-52
Miao Chen, Jia-Min Jin, Sheng-Da Lin, Ying Li, Wu-Can Liu, Li Guo, Ling Li, Xiao-Nian Li

Graphical abstract

Silica-template synthesis was adopted in the synthesis of mesoporous MgF_2. In contrast to conventional MgF_2, higher Lewis acidity, modified surface and textual properties and far superior catalytic performance in dismutation of $CHClF_2$ were achieved for the silica-templated samples.



The use of methyl 2,2-difluoro-2-(fluorosulfonyl)acetate as the difluorocarbene source to generate an in situ source of difluoromethylene triphenylphosphonium ylide

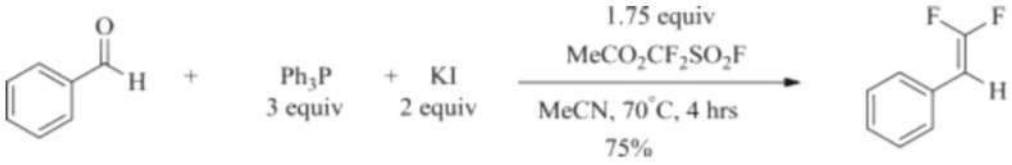
Original Research Article

Pages 53-59

Charles S. Thomoson, Henry Martinez, William R. Dolbier Jr.

Graphical abstract

1,1-Difluoroalkenes are formed using a new source of difluoromethylene triphenylphosponium ylide.



P-*Spiro phosphonium salts catalyzed asymmetric fluorination of 3-substituted benzofuran-2(3*H*)-ones*

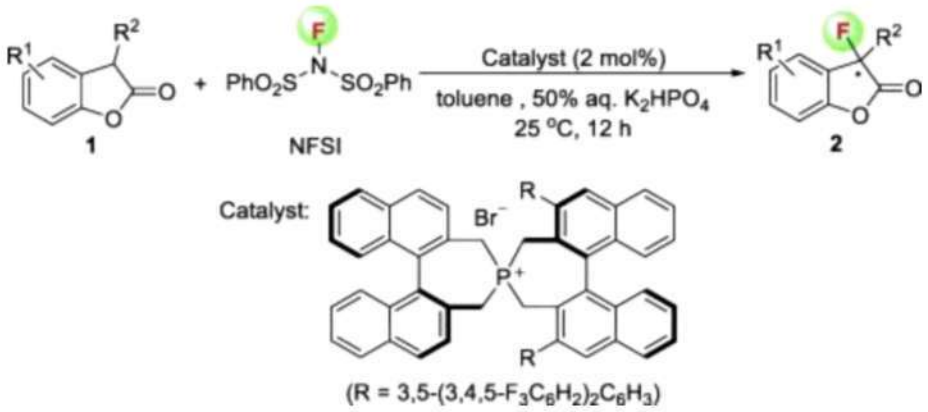
Original Research Article

Pages 60-66

Chuan-Le Zhu, Xiao-Yun Fu, Ai-Jia Wei, Dominique Cahard, Jun-An Ma

Graphical abstract

By using chiral phosphonium salts as phase-transfer catalysts, a series of fluorinated benzofuran-2(3H)-ones were obtained with up to 96% yield and 56% ee.



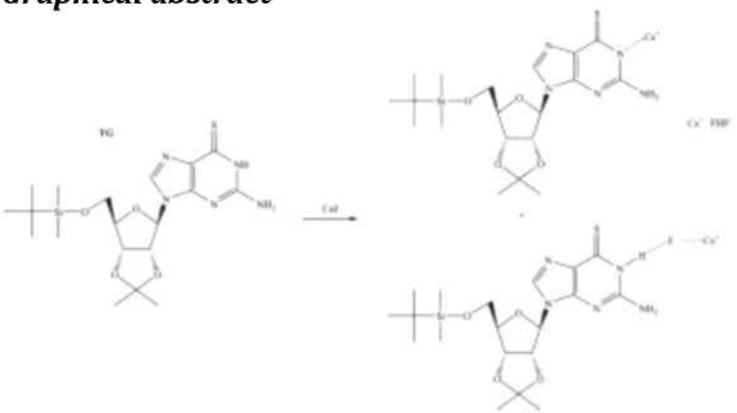
Lipophilic thioguanosine: An anion receptor for cesium fluoride

Original Research Article

Pages 67-71

Qun Luo, Jianhua Cao, Daihua Tang, Dayong Wu, Yong Huang, Junfeng Xiang, Fuyi Wang, Xinhou Liu, Gang Wu

Graphical abstract



Highlights

► Lipophilic thioguanosine (TG) behaves as an anion receptor or sensor for CsF. ► TG could response CsF in water-organic mixed solvents such as D_2O/CD_3CN. ► Both deprotonation reaction and noncovalent interactions existed between TG and CsF. ► It is of interest for the interactions of TG with inorganic fluoride sources. ► This work may deal with the topic of the interactions of anions with DNA and RNA.

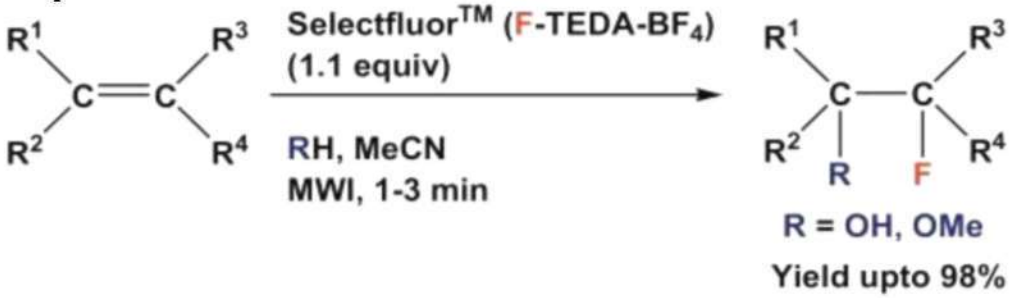
Microwave assisted fluorofunctionalization of phenyl substituted alkenes using selectfluor™

Original Research Article

Pages 72-77

Anil Kumar, Tej Vir Singh, Paloth Venugopalan

Graphical abstract



Highlights

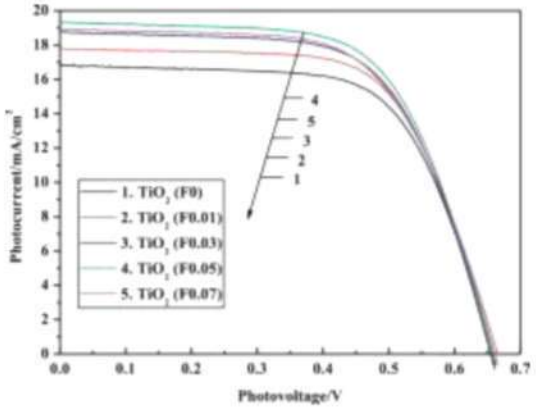
► A rapid fluorofunctionalization of alkenes occurs using selectfluor™ and microwaves. ► Phenyl group plays a crucial role during the fluorofunctionalization of alkenes. ► Addition of 'FOH' and 'FOMe' takes place regioselectively on alkenes.

Improved efficiency of dye-sensitized solar cells applied with F-doped TiO_2 electrodes

Original Research Article
Pages 78-84
Shuming Yang, Shupei Guo, Dongli Xu, Hongbin Xue, Huizhi Kou, Jichao Wang, Guanghui Zhu

Graphical abstract

Highly efficient dye-sensitized solar cells (DSSCs) were fabricated using F-doped TiO_2 electrodes. Compared with pure TiO_2 electrodes, the $\boldsymbol{E}_{fb}$ of F-doped TiO_2 electrodes shifted little in electrolytes containing $LiClO_4$. However the total trap densities were remarkably decreased as TiO_2 electrodes were doped with F. Experiment results showed that the content of F plays an important role in the photoelectrochemical properties. The highest conversion efficiency of 8.07% was obtained with F-doped TiO_2 electrodes containing F0.05 (molar ratio) under irradiation of 100 mW cm^{-2} white light, about 11.3% higher than that of pure TiO_2 electrodes.



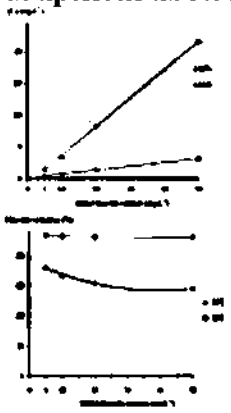
Defluoridation of water by nanofiltration

Original Research Article

Pages 92-97

A. Ben Nasr, C. Charcosset, R. Ben Amar, K. Walha

Graphical abstract



Highlights

► Removal of fluoride first from model water solution and ground water is investigated by NF5 and NF9 membranes. ► Retention of ions may be explained by the combination of theories. ► Both membranes are suitable for the removal of fluoride. ► With NF5 and NF9, the fluoride retention was 57 and 88% respectively.

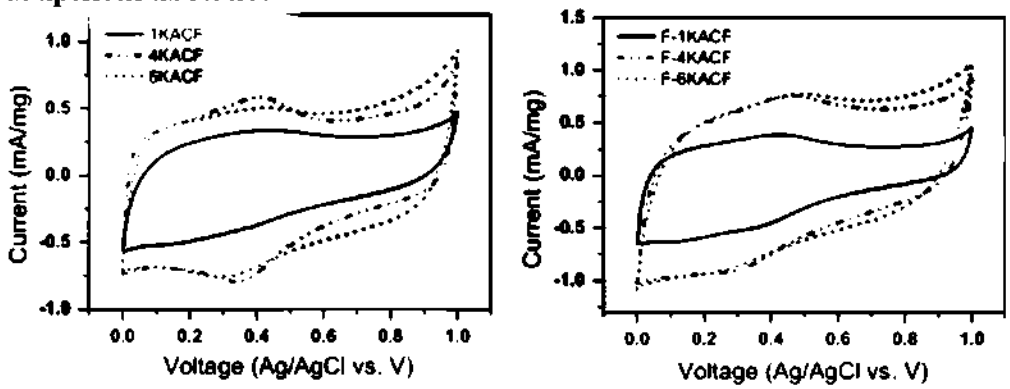
Role of fluorination in improvement of the electrochemical properties of activated carbon nanofiber electrodes

Original Research Article

Pages 98-103

Euigyung Jeong, Min-Jung Jung, Young-Seak Lee

Graphical abstract



Highlights

► Fluorination of the ACNFs decreased the specific surface area, total pore volume, and mesopore volume. ► Fluorination of the ACNFs increased the specific capacitance of the ACNFs, even with decreased textural properties. ► These suggest that introducing C F groups is the more important role of fluorination than inducing the changes in textural properties.

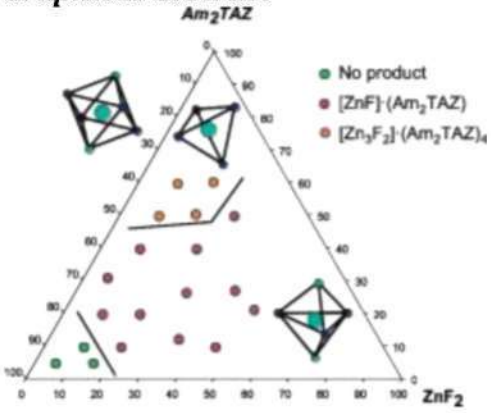
Investigation of the composition space diagram of the ZnF_2–3,5-diamino-1,2,4-triazole–HF–H_2O chemical system and structural characterization of a new fluorinated guanazolate MOF $[Zn_3F_2]\cdot(Am_2TAZ)_4$

Original Research Article

Pages 104-108

Amandine Cadiau, Charlotte Martineau, Francis Taulelle, Karim Adil

Graphical abstract



Highlights

► Investigation of the ZnF_2–Ham_2TAZ–HF–H_2O chemical system. ► Hydrothermal synthesis of a new fluorinated guanazolate MOF. ► Evidence of an unusual ***tfj*** topology in the fluorinated MOF $[Zn_3F_2]\cdot(Am_2TAZ)_4$.

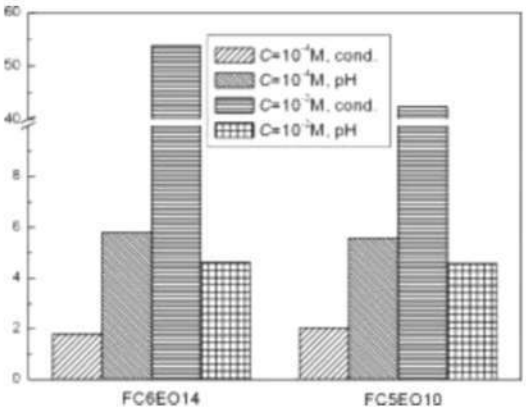
Behaviour of the fluorocarbon surfactants in the monolayer at the water–air interface and in the bulk phase

Original Research Article

Pages 109-116

Katarzyna Szymczyk

Graphical abstract



Highlights

► FC6EO14 and FC5EO10 have two different values of CMC. ► Aggregation number corresponds to the sphere at the radius equal to the length of molecule. ► Tendency of FC6EO14 and FC5EO10 to aggregate is higher than that for HC8PEO10 and HC8PEO14.

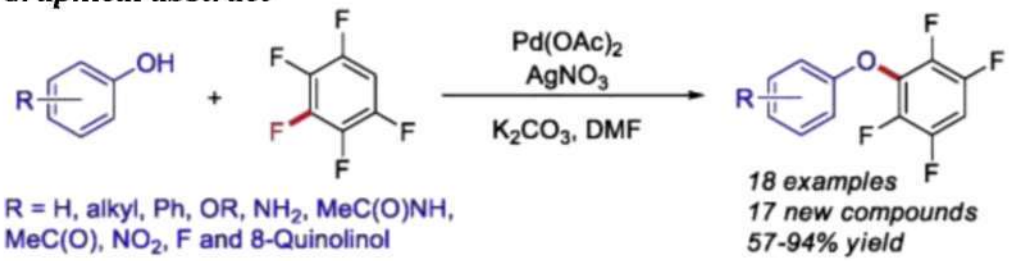
Synthesis of polyfluorinated aryl ethers via ligand-free palladium-catalyzed C—F activation of pentafluorobenzene

Original Research Article

Pages 117-123

Lanbao Sun, Mingguang Rong, Dedao Kong, Zhengshuai Bai, Yaofeng Yuan, Zhiqiang Weng

Graphical abstract



Highlights

► An efficient Pd-catalyzed method for synthesis of polyfluorinated diaryl ethers has been developed. ► This reaction proceeds with high chemo- and regioselectivity for the C F bond activation. ► A diverse set of important functional groups can be well tolerated in the protocol.

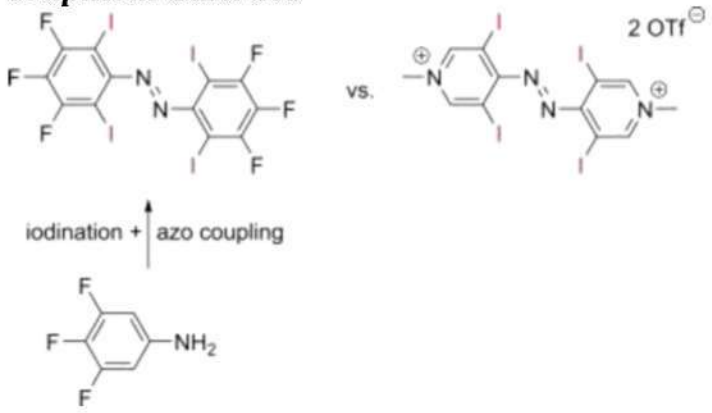
Short Communications

Polyfluorinated versus cationic multidentate halogen-bond donors: A direct comparison

Pages 14-20

Sebastian M. Walter, Stefan H. Jungbauer, Florian Kniep, Severin Schindler, Eberhardt Herdtweck, Stefan M. Huber

Graphical abstract



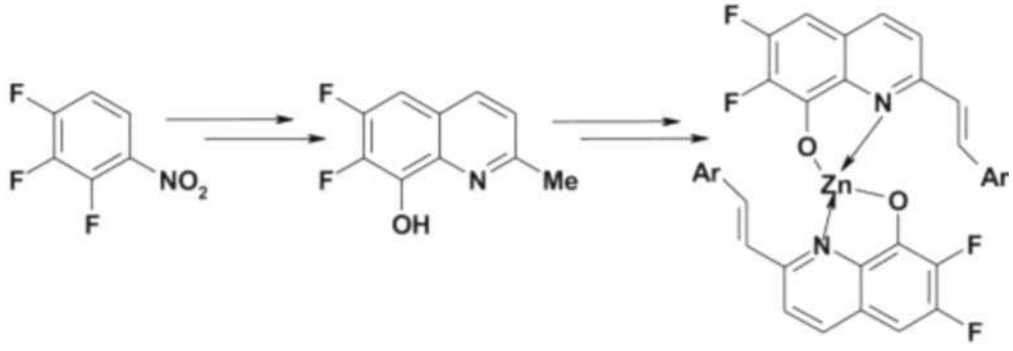
Synthesis and fluorescent properties of 2-styryl-6,7-difluoro-8-hydroxyquinoline and its Zn(II) complex

Pages 36-38

Emiliya V. Nosova, Tatyana V. Stupina, Galina N. Lipunova, Valery N. Charushin

Graphical abstract

A new synthetic approach to 2-methyl-6,7-difluoro-8-hydroxyquinoline, a key intermediate, has been developed. 6,7-Difluoro derivative of 2-styryl substituted 8-hydroxyquinoline and its Zn(II) complex have been obtained. Effects of fluorine atoms in the benzene ring on photophysical properties of 2-styryl-8-hydroxyquinolines and their Zn(II) complexes have been studied.



Stereocontrolled synthesis of dinucleoside phosphorothioates using a fluorous tag

Pages 85-91

Natsuhisa Oka, Ryosuke Murakami, Tomoaki Kondo, Takeshi Wada

Graphical abstract

Dinucleoside phosphorothioates were synthesized in a stereocontrolled manner with diastereoselectivity of >99:1 by using simple perfluoroalkyl groups as fluorous tags.