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Graphical Abstracts/J. Fluorine Chem. 131 (2010) 965–968

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New types of asymmetrical bromonium salts $[R_F(R_{F'})Br]Y$ where R_F and/or $R_{F'}$ represent perfluorinated aryl, alkenyl, and alkynyl groups

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Systematic investigations of the fluorine substitution in $ArBrF_2$ by organyl groups R′ using $R'SiF_3$ and $R'BF_2$ reagents. Preparative access to asymmetrical bromonium salts $[Ar(R')Br]Y$ (Ar = C_6F_5, 4-$CF_3C_6H_4$, R′= C_6H_5, 4-FC_6H_4, 4-$CF_3C_6H_4$, $C_3F_7C{\equiv}C$, $CF_3C{\equiv}C$, trans-$CF_3CF{=}CF$). No bromonium salts were obtained in case of R′=C_6F_{13} and $C_6F_{13}C_2H_4$

$$C_6F_5BrF_2 + R_F'BF_2 \xrightarrow{\text{WCS}} \mathbf{[C_6F_5(R_F')Br]Y}$$

$R_F' = C_3F_7C{\equiv}C$, Y = $[BF_4]^-$
R_F' = *trans*-$CF_3CF{=}CF$, Y = *trans*-$[CF_3CF{=}CFBF_3]^-$
$R_F' = C_6F_{13}$, $C_6F_{13}C_2H_4$: no F/R_F' substitution

$$C_6F_5BrF_2 + R'SiF_3 \xrightarrow{\text{MeCN}} \mathbf{[C_6F_5(R')Br]Y}$$

R′ = C_6H_5, 4-FC_6H_4, 4-$CF_3C_6H_4$, Y = $[SiF_5]^-$

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Investigation of ion-pairing phenomenon in BaF_2 aqueous solution: Experimental and theoretical studies

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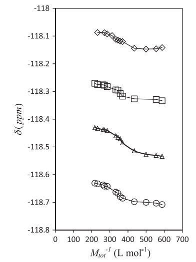

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Synthesis of norfloxacin analogues catalyzed by Lewis and Brönsted acids: An alternative pathway

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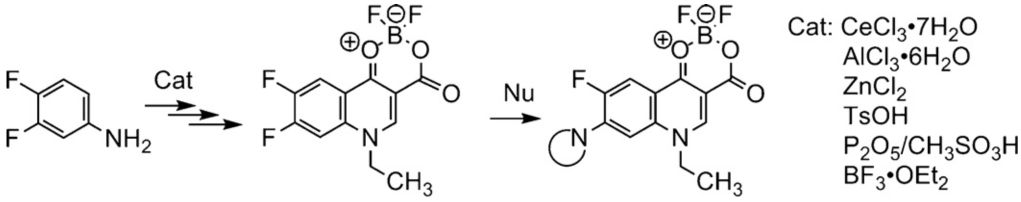

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Approaches to the preparation of (*Z*)-1,2-difluorostilbenes

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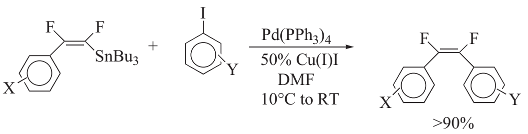

Methodology directed at the preparation of (*Z*)-1,2-difluorostilbenes has been evaluated.
For symmetrical (*Z*)-1,2-difluorostilbenes, photochemical isomerization of the isomeric (*E*)-1,2-difluorostilbenes, and HPLC separation of the mixture of stilbene isomers is a reasonable route to a particular (*Z*)-stilbene. An alternative approach to both symmetrical and/or unsymmetrical (*Z*)-1,2-difluorostilbenes has been developed *via* stereospecific Pd(0) coupling of (*E*)-1,2-difluoro-aryl-ethenyltributylstannanes under Stille-Liebiskind conditions with aryl idodies. The requisite arylstannanes can be obtained *via* the reported route developed by Davis or *via* (*E*)-1,2-difluorovinyltributylstannane – a new route described in this work. The methodology tolerates almost any functionality in the aryl ring, is easily carried out, is stereospecific and provides the first general route to (*Z*)-1,2-difluorostilbenes.

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Reactions of imines with 2,2-difluoro-2-fluorosulfonylacetyl fluoride

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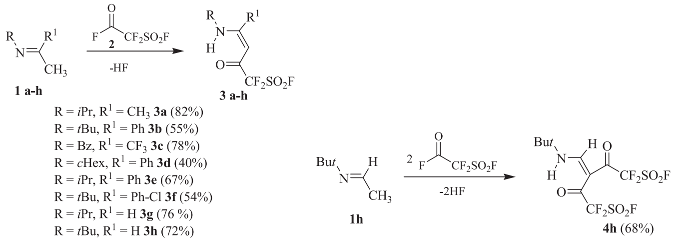

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Explored routes to unknown polyfluoroorganyliodine hexafluorides, R_FIF_6

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$IF_7 + C_6F_5EX_{n-1} \longrightarrow$
Addition of fluorine to the C_6F_5 group
$C_6F_5IF_4 + IF_7 \longrightarrow$
ring fluorination
$CF_3CH_2IF_4 + IF_7$ or $[O_2][SbF_6] \longrightarrow$
no fluorination
$CF_3CH_2IF_4 + K_2[NiF_6]{\cdot}KF \longrightarrow$
C-I cleavage and C-H fluorination

J. Fluorine Chem., 131 (2010) 1007

Efficient synthesis of α-(fluoro/chloro/methoxy) disulfonylmethane derivatives as tunable substituted methyl synthons via a new C–S bond forming strategy

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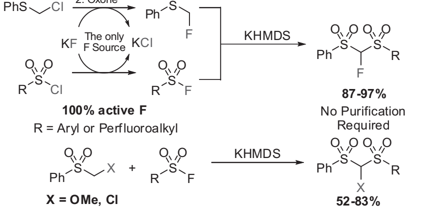

A new synthetic protocol for the preparation of α-fluoro(disulfonyl)methane and its chloro as well as methoxy analogues has been developed. Due to the synthetic utility of α-fluoro(bisphenylsulfonyl)methane (FBSM) as a versatile synthon in the preparation of various useful fluoromethylated organic molecules, search for an easy and economic for its preparation route has been essential. The C–S bond forming strategy is utilized in this new synthetic approach, which can be applied to a variety of substrates with high efficiency and selectivity.

J. Fluorine Chem., 131 (2010) 1013

Novel fluoro-substituted benzo- and benzothieno fused pyrano[2,3-*c*]pyrazol-4(1*H*)-ones

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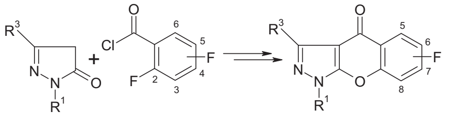
A series of mono- and difluoro-substituted chromeno[2,3-*c*]pyrazol-4(1*H*)-ones were synthesized in two steps starting from appropriately substituted 2-pyrazolin-5-ones and di- or trifluorobenzoyl chlorides. Detailed NMR spectroscopic investigations (^{1}H, ^{13}C, ^{15}N, ^{19}F) with the obtained compounds were undertaken.



J. Fluorine Chem., 131 (2010) 1025

P–C bond formation via P–H addition of a fluoroaryl phosphinic acid to ketones

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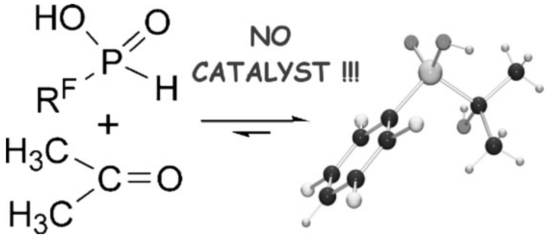

Metal free formation of a P–C bond via addition of acetone to a fluoroaryl phosphinic acid is observed. The dynamic nature of the underlying equilibrium was investigated using H/D exchange and the resulting adduct forms an extensive hydrogen bonded 2D network in the solid state which was confirmed by X-ray diffraction.

J. Fluorine Chem., 131 (2010) 1032

Synthesis of [^{18}F]xenon difluoride as a radiolabeling reagent from [^{18}F]fluoride ion in a micro-reactor and at production scale

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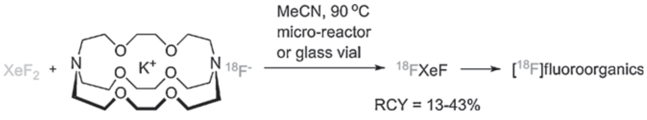
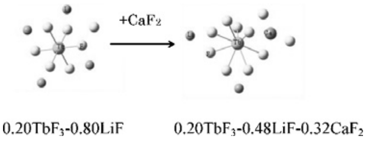


[^{18}F]XeF$_2$ was produced in multi-mCi amounts from the reaction of [^{18}F]fluoride ion with XeF$_2$ in MeCN. The isolated [^{18}F]XeF$_2$ was reactive towards substrates, such as 1-((trimethylsilyl)oxy)cyclohexene and fluorene.

J. Fluorine Chem., 131 (2010) 1039

Local structural analyses on molten terbium fluoride in lithium fluoride and lithium–calcium fluoride mixtures



Masahiko Numakura[a], Yoshihiro Okamoto[b], Tsuyoshi Yaita[b], Hideaki Shiwaku[b], Hiroshi Akatsuka[a], Atsushi Nezu[a], Keisuke Tajima[a], Yasuaki Shimohara[a], Catherine Bessada[c], Olivier Pauvert[c], Didier Zanghi[c], Pierre Chamelot[d], Haruaki Matsuura[a,c,e]

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Local structures model around a Tb^{3+} in 0.20TbF$_3$–0.80LiF and 0.50TbF$_3$–0.50LiF mixtures tend to be asymmetric by addition of CaF$_2$. These facts appear at bCaF$_2$=0.32 in ternary 0.20TbF$_3$–aLiF–bCaF$_2$ and bCaF$_2$=0.12 in 0.50TbF$_3$–aLiF–bCaF$_2$ mixtures.

J. Fluorine Chem., 131 (2010) 1044

Synthesis of 3-fluoroimidazo[1,2-*a*]pyrimidines and 5-fluoroimidazo[2,1-*b*][1,3]thiazoles via heterocyclization of (N-heteroarylimino) trifluoropyruvates

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