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# Graphical Abstracts/J. Fluorine Chem. 129 (2008) 73–75

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## Tea and fluorosis

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Long-term drinking tea might lead to fluorosis because of the high F level in tea commodities. However, little attention was paid to this problem. So the authors attempt to review the attributions of tea plants and the types of tea products, with emphasis on the evaluations of fluoride content in various tea products, and fluorosis caused by tea-drinking.

**Table 1.** F content in various commodity teas and tea beverages (ppm)

| Tea types | F content Range (ppm) |
|---|---|
| **Tea Leaves:** | |
| Green tea | 2.1-560.0 mg/kg (China);[3,7,8] 217±26-336±27mg/kg (Hong Kong);[9] 71.11-180.16 mg/kg (Asian);[16] |
| Oolong tea | 170±6-224±13mg/kg (Hong Kong);[9] 87—178mg/kg (China);[8] |
| Black tea | 23.6—385mg/kg(China);[7,8] 322±5—423±27mg/kg(Hong Kong);[9] 30—340mg/kg(Poland);[11] 87.6—289.2mg/kg(Turkey);[12] 35±6—182±20 mg/kg(Iran);[13] |
| Flower tea | 31.5-636.4 mg/kg (China);[1,14] |
| Brick tea | 52.5-1175.0 mg/kg (China);[1] 680±30-878±60mg/kg (Hong Kong);[9] |
| **Instant tea :** | |
| Green tea | 260.3±0.02—597.5±0.01 mg/kg(China);[14] |
| Oolong tea | 248.2±0.02 mg/kg(China);[14] |
| Black tea | 0.49±0.03 – 3.35±0.02 mg/L(Germany);[15] 1.0-6.5mg/L(USA);[6] 151.0±0.02 – 831.3±0.02 mg/kg(China);[14] |
| Flower tea | 196.3±0.01 mg/kg(China);[14] |
| **Tea beverage :** | |
| Green tea | 0.53—6.90mg/L(Japan);[10] 0.21-1.474mg/L(China);[14,17] 22.6±0.59-25.3±0.54mg/L(Taiwan);[16] |
| Black tea | 0.47-2.19mg/L(Japan);[10] 0.25±0.00-1.79±0.01(Germany);[12] 0.1763±0.0060-2.1954±0.0554 (China) ; [14,17] 19.9±0.94-33.40±0.97mg/L(Taiwan);[16] |
| Oolong tea | 0.75-1.50 mg/L(Japan);[10] 0.0955±0.0055—4.1088±0.0644mg/L (China) ; [14,17] 21.8±1.02-28.5±0.34 mg/L(Taiwan);[16] |
| Flower tea | 0.19±0.01-2.2777±0.0312 mg/L(China);[14,17] |
| Fruit tea | 0.03±0.01-0.09±0.01(Germany);[15] 0.6708±0.0130-4.4522±0.1152 (China) ;[17] |

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## Greedy Ag(II) oxidizer: Can any inorganic ligand except fluoride endure its presence in ionic solids?

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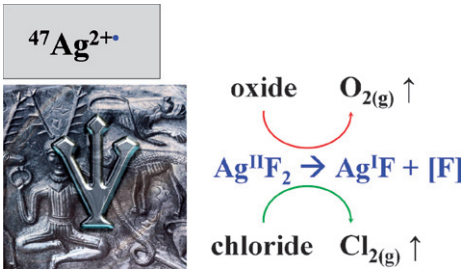
$AgF_2$ is capable of oxidising the vast majority of oxides and chlorides, as follows from the analysis of thermodynamic parameters for 215 distinct chemical reactions.

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## Carbon–carbon bond formation by radical addition of α-trifluoromethylacrylate with cyclic ethers

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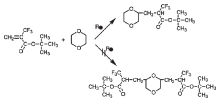

The radical addition reactivity of *tert*-butyl α-trifluoromethylacrylate ($CH_2$=C($CF_3$)COOC($CH_3$)$_3$) (BFMA) with cyclic ethers was investigated in order to compare to that of perfluoroisopropenyl ester. One to one addition compound of BFMA with tetrahydrofuran (THF) was produced in fairy high yields in the presence of 2,2′-azobisisobutyronitrile, benzoyl peroxide or di-*tert*-butyl peroxide to give 2-substituted THF derivative. Time–conversion investigation showed much higher reactivity of BFMA compared to that of 2-benzoxypentafluoropropene [$CF_2$=C($CF_3$)OCO$C_6H_5$]. Radical additions of BFMA with 1,4-dioxane, 1,3-dioxolane and tetrahydropyran were also examined to afford corresponding 1:1 addition products in fairly high yields by achieving carbon–carbon bond formation. It is then concluded that no interconversion of fluoroalkylcarbon radical and hydrocarbon radical may take place in the reaction system of BFMA which possesses two less fluorines in the vinyl group compared to 2-benzoxypentafluoropropene.

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## Nucleus- and side-chain fluorinated 3-substituted indoles by a suitable combination of organometallic and radical chemistry

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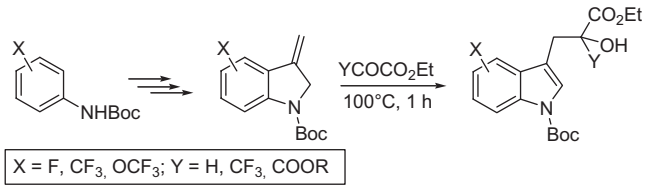


X = F, $CF_3$, $OCF_3$; Y = H, $CF_3$, COOR

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## A green and novel procedure for the preparation of ionic liquid

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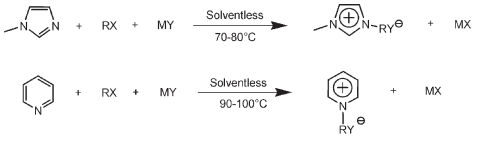
A green and novel procedure is described for the preparation of a series of ionic liquidcontaining alkylimidazolium-based or *N*-alkylpyridinium-based cations and hexafluoro-phosphate-based or tetrafluoroborate-based anions in one-pot solvent-free conditions to give excellent yields with shortened time.




X= Cl , Br;
Y= $PF_6$ , $BF_4$ ;
M= K , Na , $NH_4$;
R= $C_2H_5$, $C_4H_9$, $C_5H_{11}$, $C_6H_{13}$

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## Synthesis of (*E*)- and (*Z*)-α,β-difluorourocanic acid

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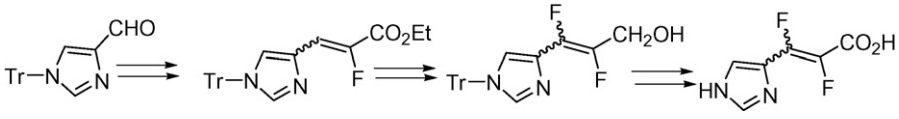


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## Preparation of ferrocenes with high fluorous-phase affinities

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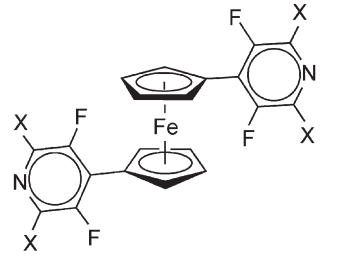
Ferrocenes bearing either $C_6F_5$ or $C_5F_4N$ substituents undergo ready nucleophilic substitution by fluorous alcohols to yield compounds bearing either 2 or 4 $OCH_2(CF_2)_nCF_3$ "ponytails." These substituents effect high fluorous-phase affinities as measured by UV–vis spectrophotometry.



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## Synthesis and surface characterization of an amphiphilic fluorinated copolymer via emulsifier-free emulsion polymerization of RAFT

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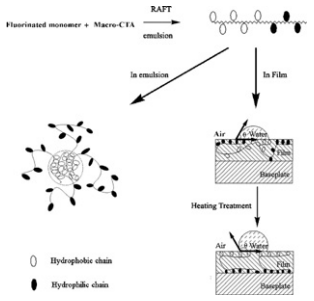
Well-defined amphiphilic fluorinated copolymers have been copolymerized directly in emulsifier-free aqueous solution via RAFT. And it was found these copolymers can form stable micelles in the emulsion. Besides, when coated on baseplate, the copolymers will form hydrophilic films, and after a heating treatment, the film can became relatively hydrophobic.

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## A new method for the synthesis of trifluoromethylating agents—Diaryltrifluoromethylsulfonium salts

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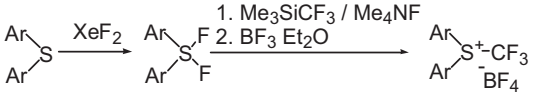


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## $^{19}F$ magnetic resonance imaging using vesicles of sucrose octaoleate-$F_{104}$

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A spin–echo technique is employed to produce high quality *in vitro* $^{19}F$ magnetic resonance images using vesicles of a highly fluorinated sucrose polyester. The results hold promise for *in vivo* imaging of the gastrointestinal tract.