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Efficient decomposition of perfluoroether carboxylic acids in water with a combination of persulfate oxidant and ultrasonic irradiation

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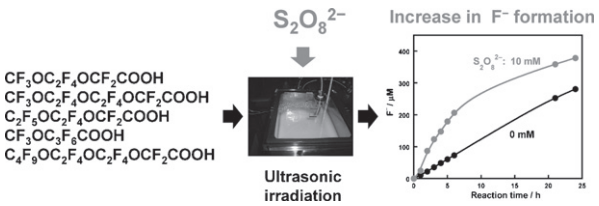

► Perfluoroether carboxylic acids were decomposed by $S_2O_8^{2-}$ and ultrasonic irradiation. ► Perfluoroether carboxylic acids are alternatives to bioaccumulative surfactants. ► $S_2O_8^{2-}$ enhanced the decomposition rates 2.5–3.9 times those without $S_2O_8^{2-}$.

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A facile and efficient synthesis of 2-amino-3-cyano-4*H*-chromenes and tetrahydrobenzo[*b*]pyrans using 2,2,2-trifluoroethanol as a metal-free and reusable medium

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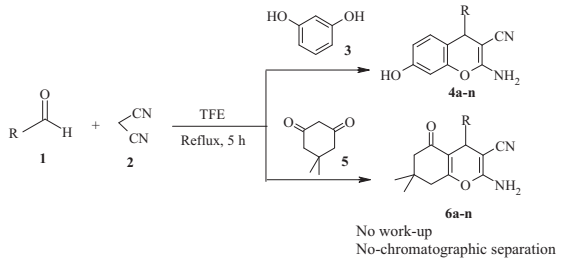

► In this study we examine the TFE as a new recyclable medium. ► 2-Amino-4*H*-chromene and tetrahydrobenzo[*b*]pyran were synthesized in trifluoroethanol. ► This method has the ability to tolerate a wide variety of substitutions. ► TFE was easily recovered.

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Synthesis and properties of trifluoromethoxyl fluoroformyl anhydride, $CF_3OC(O)OC(O)F$

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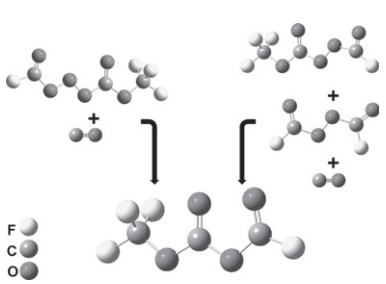

► The synthesis, IR spectroscopy and DFT calculations of the new perfluorinated anhydride, $CF_3OC(O)OC(O)F$, are presented. ► The new molecule completes the family of the asymmetric oxygen bonded acyl compounds $CF_3OC(O)OxC(O)F$ WITH x = 1–3. ► A mechanism explaining the formation of the target molecule from the combination of $CF_3OC(O)Ox$ and $FCOx$ radicals is discussed.

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Novel anionic fluorine-containing amphiphilic self-assembly polymer micelles for potential application in protein drug carrier

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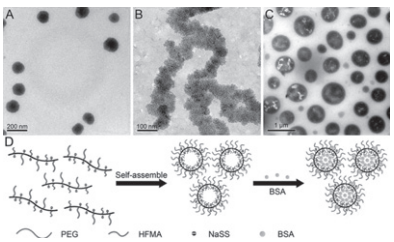

► We prepared anionic fluorine-containing amphiphilic graft polymers. ► The copolymers could self-assemble into core–shell structure micelles. ► There was a visible adsorption between the micelles and BSA. ► The micelles have potential application in protein drug carrier.

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Removal of fluoride ions from aqueous solutions using protonated cross-linked chitosan particles

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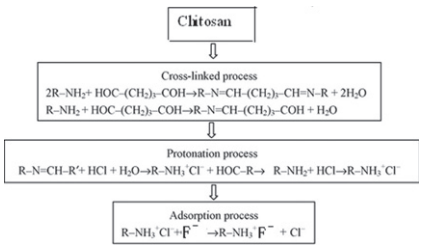

► PCP was prepared with chitosan membrane cross-linked and protonated. ► This adsorbent has good subsidence. ► The maximum amount of fluoride adsorbed was 8.10 mg g^{-1} at 20 °C. ► The equilibrium data fitted with Langmuir and Freundlich isotherm models well. ► The adsorption of fluoride onto this adsorbent was attributed to physical adsorption.

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TEMPO mediated oxidation of fluorinated alcohols to carboxylic acids

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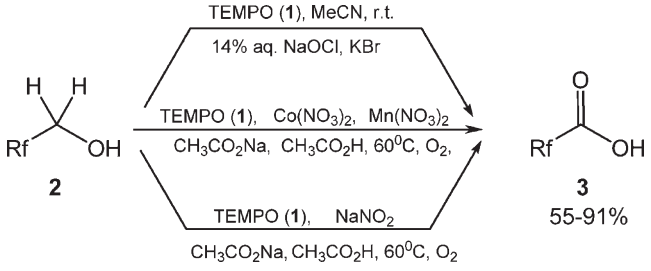

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Reactions of 6-(tri- and 6-(difluoromethyl))comanic acids and their ethyl esters with aniline and its 2-substituted derivatives

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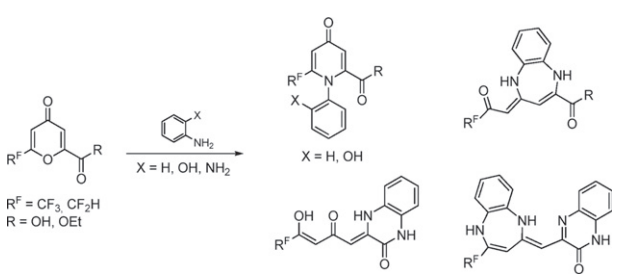

► Reactions of 6-(tri- and 6-(difluoromethyl))comanic acids with aniline and its 2-substituted derivatives were investigated. ► R^F-containing 4-pyridones, benzodiazepines and quinoxalinones were synthesized. ► Electrophilic properties of 6-CF_3-comanic acid were evaluated.

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Sphingosine and clavaminol H derivatives bearing fluorinated chains and their cytotoxic activity

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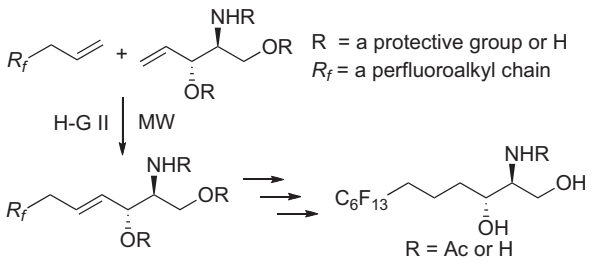
► Cross-metathesis of perfluoroalkylpropenes with functionalized alkenes. ► Synthesis of fluorinated sphingosine derivatives. ► Synthesis of fluorinated clavaminol H analogues. ► Biological activity of the prepared fluorinated clavaminol H analogues.



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Reaction of 2-(trifluoromethyl)chromones with pyridoxal: Formation of 1-benzopyranooxepino- and 1-benzopyranopyranopyridines

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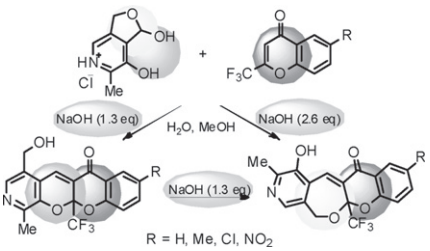
► 2-(Trifluoromethyl)chromones and pyridoxal hydrochloride were reacted in the presence of sodium hydroxide. ► Two novel polyfluoroalkyl-containing heterocyclic systems,11a,13-dihydro-6*H*-1-benzopyrano[3′,2′:6,7]oxepino[3,4-*c*]pyridin-6-ones and 6H,11a*H*-1-benzopyrano[3′,2′:5,6]pyrano[2,3-*c*]pyridin-6-ones were synthesized. ► The reaction depends on the pH of the aqueous media.



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A thermogravimetric study of the fluorination of zirconium and hafnium oxides with anhydrous hydrogen fluoride gas

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► Dynamic reaction of ZrO_2/HfO_2 with hydrogen fluoride. ► Isothermal reactions of ZrO_2/HfO_2 with hydrogen fluoride. ► Characterization of the products of the reactions of ZrO_2/HfO_2 with HF and confirmation of the tetrafluoride through XRD.

$$ZrO_2 + 4HF \rightarrow Zr_xO_yF_z \rightarrow ZrF_4$$

$$HfO_2 + 4HF \rightarrow Hf_xO_yF_z \rightarrow HfF_4$$

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Multifunctional surface modification of an aramid fabric via direct fluorination

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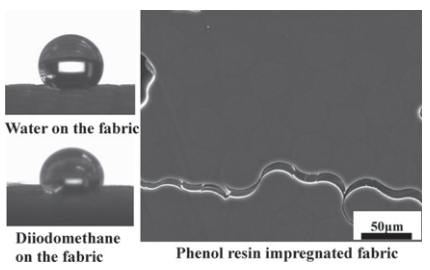

► Direct fluorination of the aramid fabric improved hydrophobicity and oleophobicity. ► Direct fluorination of the aramid fabric improved phenol resin wettability and impregnation. ► These improvements suggest that direct fluorination of the aramid fabric can be an efficient multifunctional surface modification method.

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Synthesis of *N*-substituted α,α-difluoro-β-aminophosphonates by addition of diethyl lithiodifluoromethylphosphonate to imines

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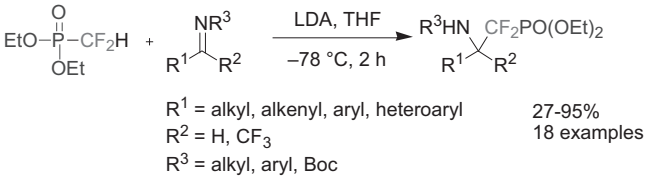

► Diethyl lithiodifluoromethylphosphonate adds to *N*-substituted imines to provide *N*-substituted α,α-difluoro-β-aminophosphonates. ► Reactions with *N*-aryl or *N*-alkyl aldimines provide high yields of products. ► In ketimine series only activated *N*-(2,2,2-trifluoro-1-phenylethylidene)aniline showed high reactivity.