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Graphical Abstracts/J. Fluorine Chem. 167 (2014) vii–xv

Editorial

J. Fluorine Chem., 167 (2014) 1

David O'Hagan

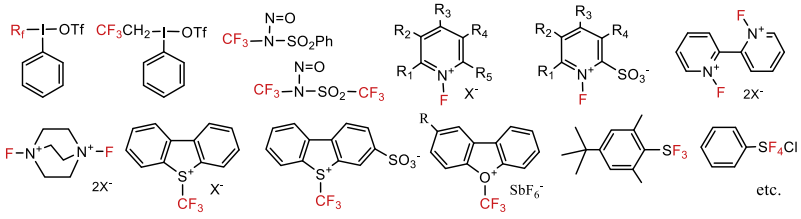
Exploration of fluorination reagents starting from FITS reagents

J. Fluorine Chem., 167 (2014) 3

Teruo Umemoto

R&D Center, Zhejiang Jiuzhou Pharmaceutical Co., Ltd., Waisha Road 99, Jiaojiang, Taizhou City, Zhejiang Province 318000, China

● Many kinds of the author's fluorination reagents are described. ● The author's ideas and processes for the fluorination reagents are described. ● Electrophilic fluorinating and trifluoromethylating agents are described. ● Unexpected discoveries in the development of the fluorination reagents are described.



Successful fluorine-containing herbicide agrochemicals

J. Fluorine Chem., 167 (2014) 16

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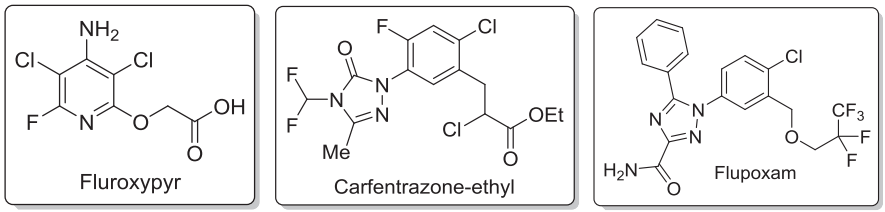
● This review highlights that around 25% of all commercial herbicides contain fluorine. ● The most significant fluorine containing commercial herbicides are profiled. ● Structures, modes of action and a synthetic route to each profiled herbicide are presented.



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J. Fluorine Chem., 167 (2014) 30

Recent progress in transition-metal-catalyzed trifluoromethylation of olefins using electrophilic CF_3 reagents

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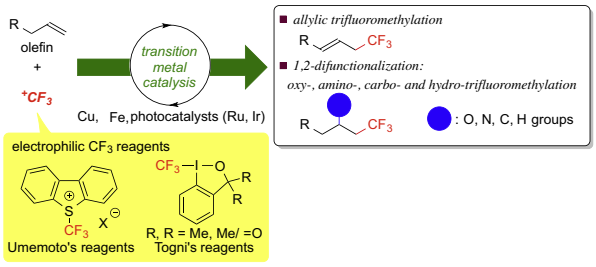
Chemical Resources Laboratory, Tokyo Institute of Technology, Japan

● Trifluoromethylation of olefins. ● Transition metal catalysis. ● Electrophilic trifluoromethylating reagents. ● Umemoto's and Togni's reagents. ● C(sp^3)–CF_3 bond formation.



J. Fluorine Chem., 167 (2014) 37

Recent advances in the trifluoromethylation methodology and new CF_3-containing drugs

Wei Zhu[a], Jiang Wang[a], Shuni Wang[a], Zhanni Gu[a], José Luis Aceña[b], Kunisuke Izawa[c], Hong Liu[a], Vadim A. Soloshonok[bd]

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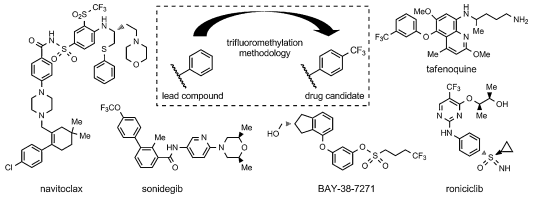

● Assessment of current methods for the synthesis of CF_3-containing molecules. ● Description of five trifluoromethylated new drug candidates. ● Evaluation of the synthetic routes developed for each compound. ● More advanced protocols for trifluoromethylation reactions are still eagerly needed.

J. Fluorine Chem., 167 (2014) 55

Copper-catalyzed intermolecular cyanotrifluoromethylation of alkenes: Convenient synthesis of CF_3-containing alkyl nitriles

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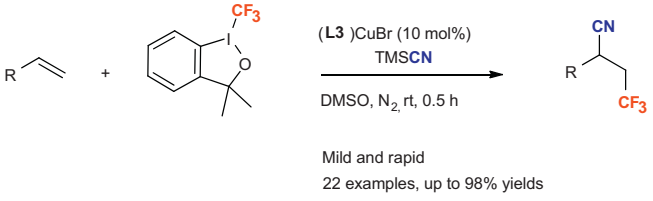
● A novel copper-catalyzed cyanotrifluoromethylation of alkenes was reported. ● Broad substrate scope included both styrene and unactivated alphatic alkenes. ● The reaction condition is mild but the reaction is very fast. ● A series of CF_3-containing organonitriles was provided.



J. Fluorine Chem., 167 (2014) 61

Stereospecific synthesis of (*E*)- and (*Z*)-1-chloro-1,2-difluorostyrenes

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● (*E*)-ClFC=CFI and (*Z*)-ClFC=CFI form stable zinc reagents with activated zinc. ● (*E*)- or (*Z*)-ClFC=CFAr are stereospecifically prepared form the zinc reagents. ● Both electron withdrawing and releasing groups in aryl iodide work successfully.