CF_3CHN_2 and $C_2F_5CHN_2$: highly underestimated reagents

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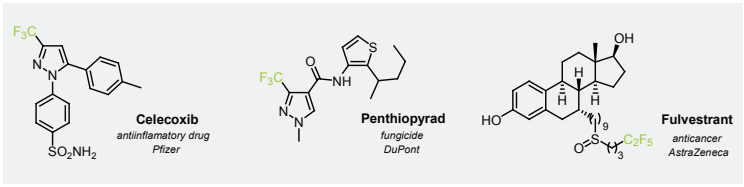
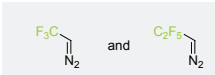
Introduction

Around 20% of all modern drugs and agrochemicals contain fluorine atom(s). Therefore, novel cheap practical methods towards fluorinated organic compounds are needed.

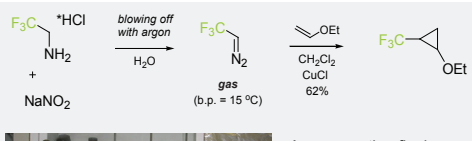


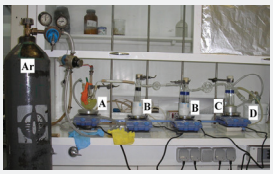
Aim

To elaborate practical safe methods to work with gaseous diazomethane derivatives



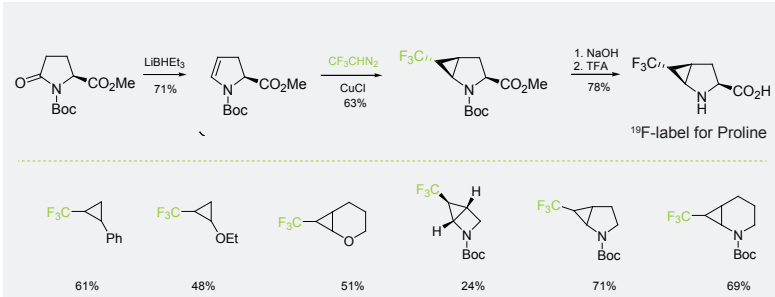
Gaseous CF_3CHN_2 [2-3]



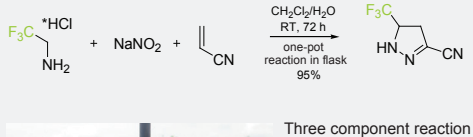


A – generating flask
B – drying flasks
C – reaction flask
D – trapping flask

CF_3-cyclopropanation of electron-rich alkenes

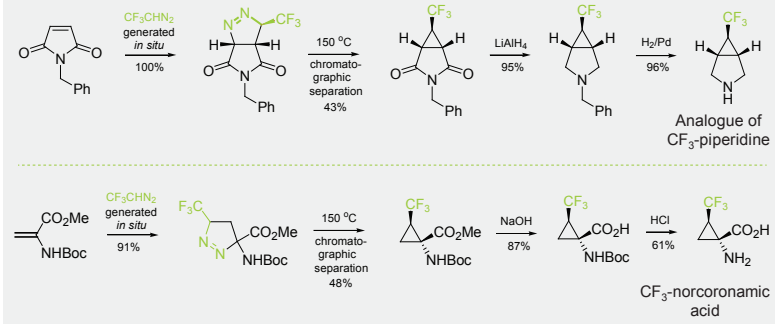


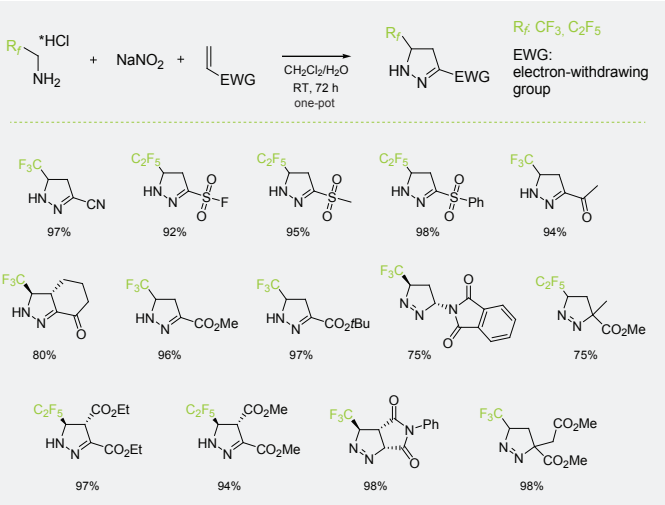
In situ-generated CF_3CHN_2 and $C_2F_5CHN_2$ [1,4-8]

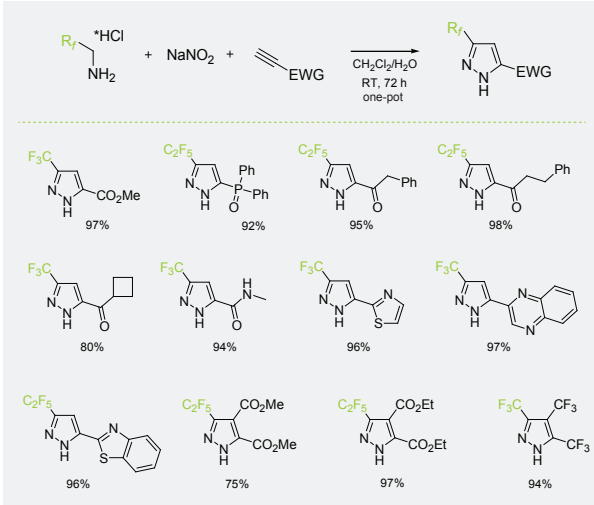


Three component reaction between $CF_3CH_2NH_2$*HCl, $NaNO_2$, and alkenes proceeds via in situ formation of CF_3CHN_2.

[3+2]-cycloaddition with electron-withdrawing alkenes







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References

1. Since 2006 more than 70 papers on CF_3CHN_2 have been appeared. Impressive contributions came from groups of Prof. G. Simonneaux, Prof. E. Carreira, Prof. J. Ma, Prof. W. Xiao, Prof. M. Duncton, Prof. G. Molander and others.
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