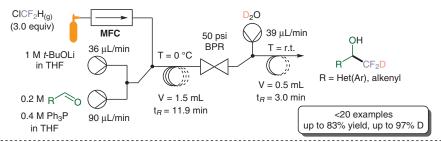
W. C. FU, T. F. JAMISON* (MASSACHUSETTS INSTITUTE OF TECHNOLOGY, CAMBRIDGE, USA)

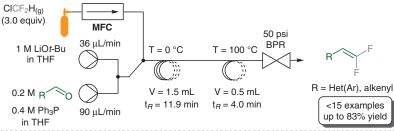
 $Deuterio diffuor omethylation\ and\ \textit{gem-} Diffuor oalkenylation\ of\ Aldehydes\ Using\ ClCF_2H\ in\ Continuous\ Flownger and\ \textit{gem-} Diffuor oalkenylation\ of\ Aldehydes\ Using\ ClCF_2H\ in\ Continuous\ Flownger and\ \textit{gem-} Diffuor oalkenylation\ of\ Aldehydes\ Using\ ClCF_2H\ in\ Continuous\ Flownger and\ \textit{gem-} Diffuor oalkenylation\ of\ Aldehydes\ Using\ ClCF_2H\ in\ Continuous\ Flownger and\ \textit{gem-} Diffuor\ oalkenylation\ of\ Aldehydes\ Using\ ClCF_2H\ in\ Continuous\ Flownger and\ \textit{gem-} Diffuor\ oalkenylation\ oalkenylation\$ Angew. Chem. Int. Ed. 2020, DOI: 10.1002/anie.202004260.

Synthesis of Deuterodifluoromethylated Alcohols and gem-Difluoroalkenes in Continuous Flow

Preparation of deuterodifluoromethylated alcohols in continous flow:



Preparation of gem-difluoroalkenes in continous flow:



Selected examples:

Significance: Fu and Jamison report the utilization of chlorodifluoromethane gas in a continuousflow setup for the preparation of α -deuteriodifluoromethylated benzyl alcohols and gem-difluoroalkenes from a range of aldehydes in good yields.

Comment: Interestingly, the authors performed NMR studies that led them to propose a plausible reaction mechanism involving an oxaphosphetane intermediate. Furthermore, the authors demonstrated the utility of this method by performing various derivatizations of the α-deuteriodifluoromethylated benzyl alcohol, affording the corresponding, bromide, tosylate or ketone.

SYNFACTS Contributors: Paul Knochel, Alexander Kremsmair Synfacts 2020, 16(08), 1001 Published online: 21.07.2020 DOI: 10.1055/s-0040-1706897; Reg-No.: F01820SF

Flow Chemistry

Key words

continuous flow deuteration difluoromethylation gem-difluoroalkenes

