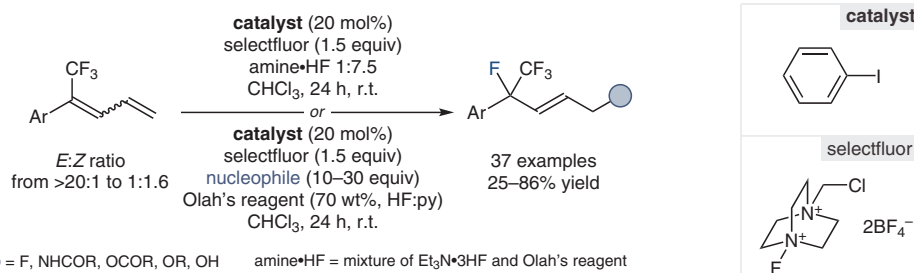


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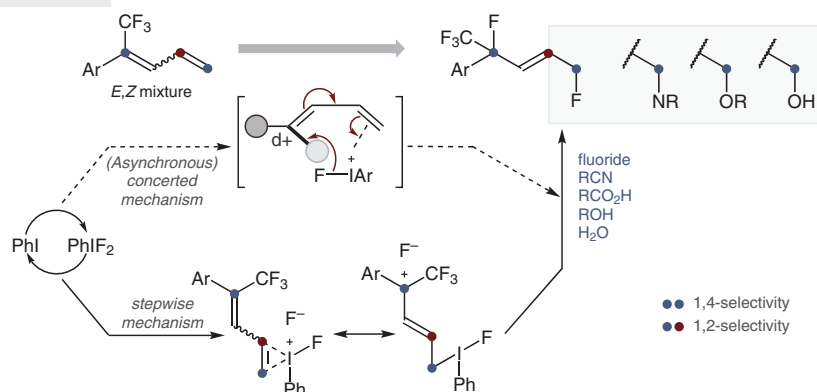
Catalytic, Regioselective 1,4-Fluorodifunctionalization of Dienes

Angew. Chem. Int. Ed. 2023, 62, e202214906 DOI: 10.1002/anie.202214906.

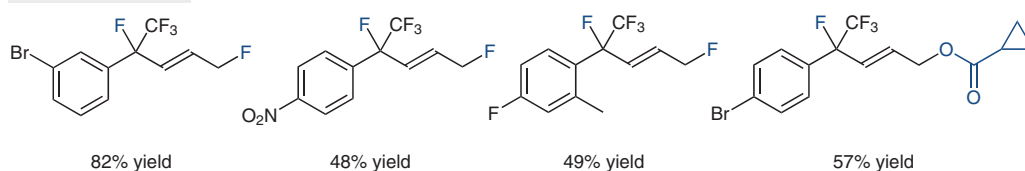
Hypervalent Iodine Catalyst Grants Access to 1,4-Difunctionalized Fluorinated Olefins



Plausible mechanisms:



Selected examples:



Significance: Gilmour and co-workers report an iodine(I)/iodine(III)-catalyzed 1,4-difluorination of trifluoromethyl-substituted 1,3-dienes. *E,Z* mixtures of dienes are converted into a single (*E*)-isomer in moderate to very good yields. The approach was further developed to enable heterodifunctionalization with a variety of nucleophiles, including nitriles, carboxylic acids, alcohols and water.

Comment: The reported method expands the well-established series of catalytic 1,1-, 1,2- and 1,3-difluorination strategies and facilitates access to highly functionalized structures. The regioselectivity (1,4:1,2 from 2:1.1 to >20:1) is dependent on the electronic properties of the aryl substituents, which supports the suggested stepwise mechanism. We look forward to a report on the authors' efforts toward an enantioselective variant of the method.

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Synfacts 2023, 19(02), 0185 Published online: 17.01.2023
DOI: 10.1055/s-0042-1753263; Reg-No.: B01123SF

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Category

Organo- and Biocatalysis

Key words

fluorination

dienes

hypervalent iodine

difunctionalization

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