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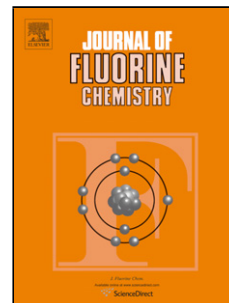
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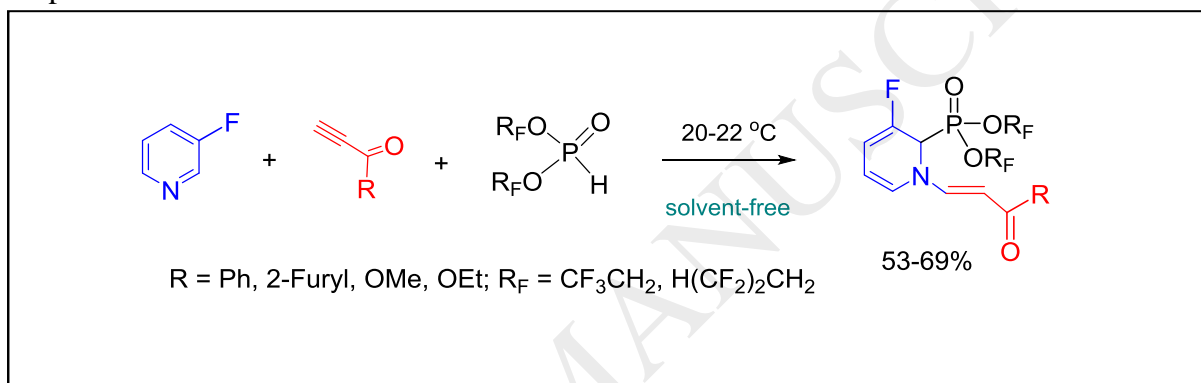


Regio- and stereoselective reaction of 3-fluoropyridine, electron-deficient alkynes and bis(fluoroalkyl) phosphites: catalyst- and solvent-free synthesis of polyfluoroalkylphosphonylated 3-fluoro-1,2-dihydropyridines

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Graphical abstract



Highlights

- A possibility of reductive *N*-vinylation and C(2)-phosphorylation of 3-fluoropyridine with electron-deficient alkynes and bis(fluoroalkyl) phosphites has been demonstrated
- Catalyst- and solvent-free synthesis of polyfluoroalkylphosphonylated 3-fluorodihydropyridines has been elaborated
- The method is stereo- and regioselective: *E*-carbonylethenyl- 1,2-dihydropyridines are prepared

Abstract The catalyst- and solvent-free reaction between 3-fluoropyridine, electron-deficient alkynes and bis(fluoroalkyl) phosphites occurs under mild conditions (20-22 °C, 1-8.5 h) to stereo- and regioselectively afford 2-bis(polyfluoroalkoxy)phosphoryl- (*E*)-*N*-ethenyl-3-fluoro-1,2-dihydropyridines in 53-69% yield.

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