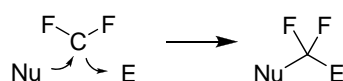


New approach for the synthesis of organofluorine compounds containing CF₂ fragment

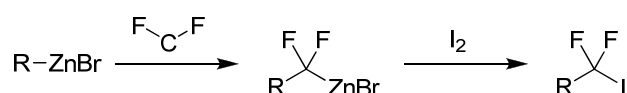
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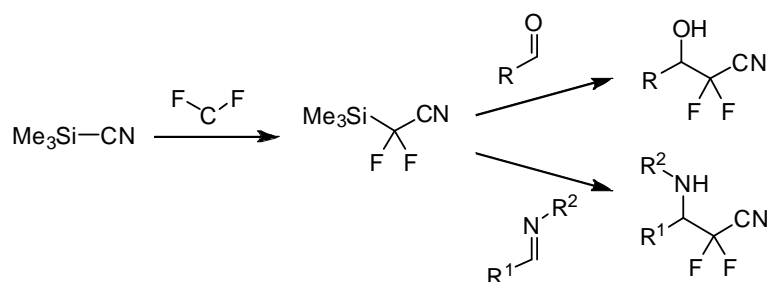
Existing methods for the synthesis organofluorine compounds containing CF₂ fragment either employ hazardous reagents or require long synthetic sequence. We propose a new approach towards difluorinated compounds based on the coupling of three components — nucleophile, difluorocarbene and electrophile.



Organometallic compounds were used as nucleophiles. The interaction of organozinc reagents with difluorocarbene leads to the generation of new organozinc species, which can be quenched by an appropriate electrophile.¹



The interaction of trimethylsilyl cyanide with difluorocarbene affords difluoro(trimethylsilyl)acetonitrile, which can be isolated and used in reactions with aldehydes and imines furnishing fluorinated alcohols and amines.²



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1. Levin, V. V.; Zemtsov, A. A.; Struchkova, M. I.; Dilman, A. D. *Org. Lett.* **2013**, *15*, 917–919.
2. Kosobokov, M. D.; Dilman, A. D.; Levin, V. V.; Struchkova, M. I. *J. Org. Chem.* **2012**, *77*, 5850–5855.