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Fluoroalkylcopper(I) Complexes Generated by the Carbocupration of Tetrafluoroethylene: Construction of a Tetrafluoroethylene-Bridging Structure
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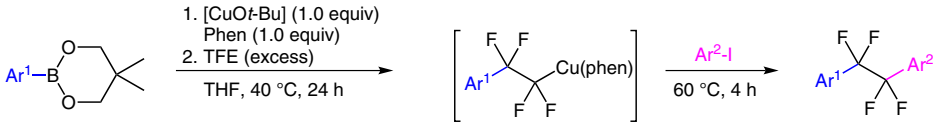
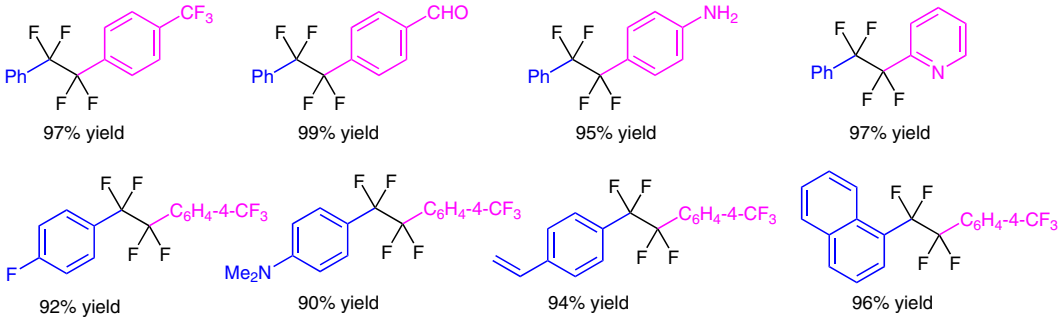
Category
Metal-Mediated Synthesis

Key words
copper
tetrafluoroethylene
aryl groups

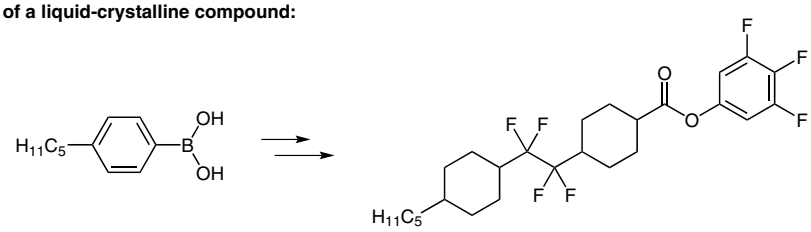
Construction of a Tetrafluoroethylene-Bridging Structure via Carbocupration



Selected examples:



Synthesis of a liquid-crystalline compound:



64% yield over 6 steps

Significance: The authors report the synthesis, characterization, and synthetic application of 2-aryl-1,1,2,2-tetrafluoroethylcopper complexes. Starting with a carbocupration of tetrafluoroethylene (TFE), a variety of 1,2-difunctionalized 1,1,2,2-tetrafluoroethanes were prepared in high yields.

Comment: The molecular structure of the aryl–TFE–copper species was determined by X-ray crystallography and NMR analysis. Furthermore, the synthetic utility for liquid-crystalline compounds bearing a tetrafluoroethylene-bridging structure was demonstrated.

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