

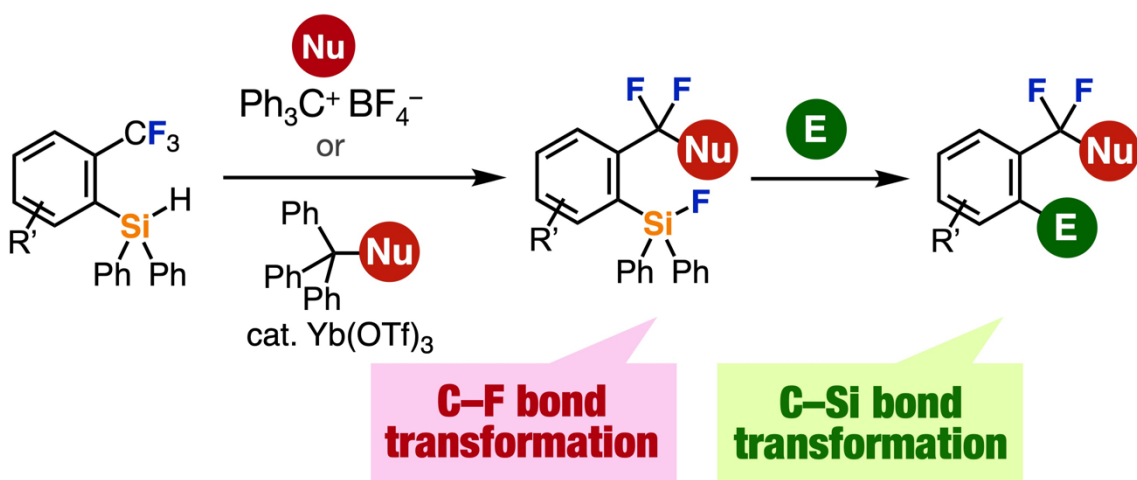
SINGLE C–F BOND CLEAVAGE OF TRIFLUOROMETHYLARENES WITH A LATENTLY TRANSFORMABLE *ORTHO*-SILYL GROUP

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Organofluorines are an important class of compounds widely used in various scientific fields, including pharmaceutical sciences, agrochemistry, and materials science. However, synthetic methods for complex fluorinated compounds are still limited and new approaches are sought-after.

Herein, we achieved a straightforward synthesis of diverse difluoromethylenes from trifluoromethylated compounds bearing a hydrosilyl group at the *ortho*-position via the selective transformation of one of the three C–F bonds of the trifluoromethyl group [1]. The activation of the hydrosilyl group with a trityl cation in the presence of nucleophiles allowed for selective C–F bond functionalization, such as allylation, carboxylation, and chlorination. We also developed a catalytic thiolation and azidation of the trifluoromethylarenes using an all-in-one reagent for generation of a trityl cation and nucleophile [2]. Further derivatization of the resulting fluorosilylarenes including the Hiyama cross-coupling, halogenation, and protonation afforded various aromatic difluoromethylene compounds.



[1] S. Yoshida, K. Shimomori, Y. Kim, and T. Hosoya, *Angew. Chem., Int. Ed.* **2016**, *55*, 10406–10409.

[2] S. Yoshida, Y. Kim, K. Shimomori, K. Kanemoto, and T. Hosoya, *manuscript in preparation*.