Hydrogenation of Fluoroarenes: Direct Access to All-cis-(Multi)fluorinated Cycloalkanes
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Rhodium-Catalyzed cis-Selective Hydrogenation of Fluoroarenes

Significance: All-cis-polyfluorinated cycloalkanes exhibit attractive electronic properties due to their high dipole moments. However, multistep syntheses from diastereoselectively fluorinated precursors are generally required. The authors report a rhodium/cyclic (alkyl)(amino)(carbene) complex catalyzed cis-selective hydrogenation of fluorinated arenes to provide a variety of highly diastereoselectively fluorinated cycloalkanes.

Comment: To suppress the formation of hydrodefluorinated byproducts, the choice of a less-polar solvent such as hexane is important.