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AgF-Mediated Fluorinative Homocoupling of gem-Difluoroalkenes


**AgF-Mediated Homocoupling Reaction of β,β-Difluorostyrene Derivatives**

![Reaction scheme](attachment:reaction_scheme.png)

Selected examples:

- R = H, Ph, NPh₂, OMe, Sm, I, Br, OCH₂O-, CH₂CH₂CO₂Et

**Significance:** A novel procedure for a fluorinative homocoupling reaction of gem-difluoroalkenes is reported by Hu and co-workers. The reaction is mediated by silver(I) fluoride and proceeds via nucleophilic addition of silver(I) fluoride to β,β-difluorostyrenes, which is followed by dimerization of the respective benzylsilver intermediates.

**Comment:** When three equivalents of 2,2,6,6-tetramethyl-1-piperidinol (TEMPO) were added to the reaction mixture, the homocoupling was completely inhibited, which may support a free radical pathway. Interestingly, AgF can be replaced by a combination of cesium(I) fluoride and AgBF₄.