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INTRODUCTION OF TRIFLUOROMETHYL GROUPS INTO HETEROCYCLIC COMPOUNDS

Klaus Burger*, Dieter Hübl and Ralph Ottlinger

Organisch-Chemisches Institut der Technischen Universität München, D-8046 Garching (F.R.G.)

Bis(trifluoromethyl)substituted hetero-1,3-dienes synthesized from hexafluoroacetone are cyclized by treatment with SnCl₂ to give five membered ring systems. The fluorine bonded to C-5 of the ring system can be replaced by various nucleophiles.

$$(F_3C)_2C=0 \rightarrow (F_3C)_2C=N-C=X \rightarrow F_3C \rightarrow F_3$$

The reaction can be used for linearly joining ring systems as well as for annelation reactions. Mechanistic aspects are discussed.