EXPLORATORY WORK ON TITANIUM (II) MEDIATED DEOXYGENATION REACTIONS

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ABSTRACT

α,α'-Dichloromethyl phenyl sulfoxides are very useful in organic synthesis. The reaction of lithiodichloromethyl phenyl sulfoxides with cyclicketones and aldehydes gave the corresponding α,α'-dichloro-β-hydroxy phenyl sufloxides in good to moderate yields.

The α,α'-dichloroalkyl phenyl sulfoxides could be synthesized in high yield by the alkylation of lithiodichloromethyl phenyl sulfoxide with alkyl halides. Eliminative deoxygenation of these compounds with Ti(II) species result in the formation of vinyl sulfides, the ring expand products, cyclization and/or phenylsulfides.

Lithiodichloromethyl phenyl sulfoxide also underwent 1,4-addition reaction to α,β-unsaturated compounds to give the corresponding acyclic or cyclopropane derivatives.