Ti(II) MEDIATED CYCIZATION

BY

SUPACHAT CHAIRATANATHAVORN

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF

THE REQUIREMENT FOR THE DEGREE OF

MASTER OF SCIENCE

(ORGANIC CHEMISTRY)

IN

FACULTY OF GRADUATE STUDIES

OF

MAHIDOL UNIVERSITY

1984

Copyright by Mahidol University
Abstract

**Part I.** The alkylation of chloromethyl phenyl sulfoxide anion with 3-aryl-1-iodopropane gave the corresponding 1-chloro-1-phenylsulfinyl-4-arylbutane in good yields. The cyclization of 1-chloro-1-phenylsulfinyl-4-arylbutane by using Ti(II) generated by the reaction of titanium tetrachloride and zinc in tetrahydrofuran or a mixture of ether and dichloromethane gave the corresponding 1-phenylthio-1,2,3,4-tetrahydronaphthalene in good yields. The substituents on the aromatic ring showed some effects on the yield of cyclization products.

**Part II and III.** 1-Chloro-1-phenylsulfinyl-3-arylpropene and 1-chloro-1-phenylsulfinyl-5-arylpentane were prepared in order to study their cyclization to 5-membered- and 7-membered-ring. These compounds failed to undergo cyclization reaction. Only small yields of the corresponding vinyl sulfides were isolated from their reaction with Ti(II).