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**RADICAL DEOXYGENATION OF SOME
ALCOHOLS USING ORGANOSILANES**

Miss Duangamol Nuntasri

A Thesis Submitted in Partial Fulfillment of the Requirements
for the Degree of Master of Science in Chemistry

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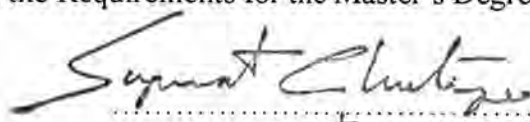
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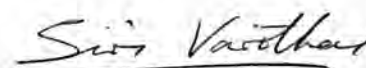
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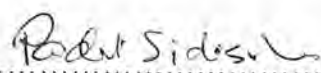
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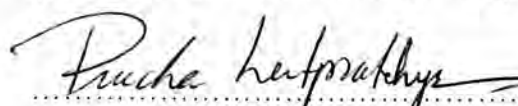
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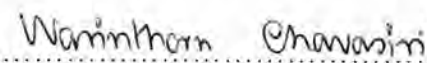
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คู่มือศึกษาหลักสูตรวิทยานิพนธ์ภายในกรอบสี่เหลี่ยมนี้เพียงแผ่นเดียว

ดวงกมล นันทศรี : แรดิคัลดีออกซิเจนเนชันของแอลกอฮอล์บางชนิดโดยใช้สารออร์กาโนซิลเลน
(RADICAL DEOXYGENATION OF SOME ALCOHOLS USING
ORGANOSILANES)

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ได้ศึกษาปฏิกิริยาดีออกซิเจนเนชันของเซกันดารีแอลกอฮอล์ด้วยปฏิกิริยา Barton-McCombie
ในการศึกษาปัจจัยเพื่อหาภาวะของปฏิกิริยาที่เหมาะสม ได้แก่ chain carrier, initiator, อนุพันธ์ของ
แอลกอฮอล์และตัวทำละลาย งานวิจัยนี้พบว่าไตรฟีนิลซิลเลน (Ph_3SiH_2) และ AIBN เป็นสารที่ใช้ในการ
เกิดปฏิกิริยาดีออกซิเจนเนชันของไซโคลโดเดคานอล ซึ่งอยู่ในรูปอนุพันธ์เมทิลแซนเททได้ดีที่สุด โดยให้
ผลิตภัณฑ์ที่ต้องการในปริมาณสูงถึงสูงมาก นอกจากนี้ได้ประยุกต์ใช้ระบบที่พัฒนาขึ้นในการดีออกซิเจน
แอลกอฮอล์และสารผลิตภัณฑ์ธรรมชาติบางชนิด ผลผลิตที่ได้รับจากวิธีนี้พบว่ามีปริมาณสูงกว่าวิธีที่เคยมี
รายงานไว้อย่างมีนัยสำคัญ

ภาควิชา 5๗
สาขาวิชา ๕๗
ปีการศึกษา ๒๕๔๐

ลายมือชื่อผู้บันทึก ดวงกมล นันทศรี
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The Barton-McCombie type reaction for deoxygenation of secondary alcohols was investigated. Various factors including chain carriers, initiators, alcohol derivatives and solvents were examined to optimize the reaction conditions. It was found that diphenylsilane (Ph_2SiH_2) and AIBN were the best pair for deoxygenation of cyclododecanol *via* its methyl xanthate. The desired product was obtained in high to excellent yield. Moreover, these developed conditions were applied for the deoxygenation of selected alcohols and some naturally occurring compounds. The yield derived from this methodology was found to be significantly superior to other methods reported.

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สาขาวิชา..... ๕๗

ปีการศึกษา..... ๒๕๔๐

ลายมือชื่อผู้เขียน..... Duangamol Nuntasri

ลายมือชื่ออาจารย์ที่ปรึกษา..... Warinthorn Chavasiri

ลายมือชื่ออาจารย์ที่ปรึกษาร่วม..... -

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LIST OF ABBREVIATIONS

°C	=	degree Celsius
mmol	=	millimole
mL	=	milliliter
min	=	minute (s)
h	=	hour (s)
atm	=	atmosphere
anh	=	anhydrous
AIBN	=	2,2'-Azobisisobutyronitrile
DMSO	=	dimethyl sulfoxide
TBP	=	<i>tert</i> -butylperoxide
NMR	=	nuclear magnetic resonance
IR	=	infrared
g	=	gram
m.p.	=	melting point
M ⁺	=	molecular ion in mass spectrum
v	=	wavelength (cm ⁻¹)
s	=	singlet (NMR)
d	=	doublet (NMR)
t	=	triplet (NMR)
m	=	multiplet (NMR)
dd	=	double of doublet
dt	=	double of triplet
br	=	broad (IR)