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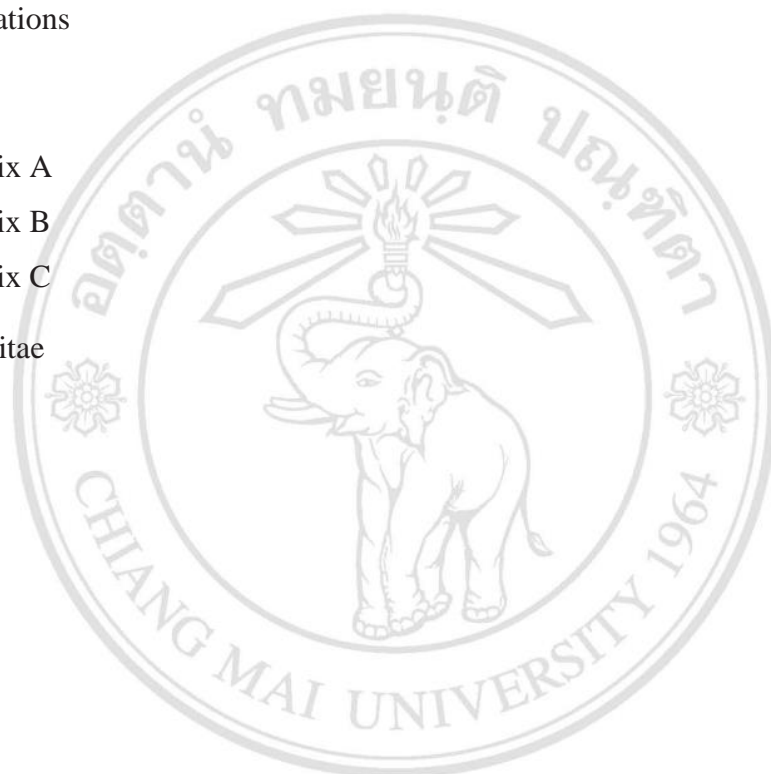
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## LIST OF LIST OF ABBREVIATIONS AND SYMBOLS

$\delta$	Chemical shift (ppm)
$\geq$	Greater than or equal to
$^{\circ}\text{C}$	Degree Celsius
$\text{cm}^{-1}$	Wavenumber
DMF	Dimethylformamide
DMSO	Dimethylsulfoxide
EtOH	Ethanol
GC	Gas Chromatography
GC-MS	Gas Chromatography-Mass Spectrometry
IL	Ionic Liquid
IR	Infrared Spectroscopy
K	Degree Kelvin
M	Concentration in nit of mole per liter
MeOH	Methanol
mmol	Millimole
MNPs	Magnetic Nanoparticles
mol	Mole
MW	Molecular Weight
NMM	<i>N</i> -Methylmorpholine
NMO	<i>N</i> -Methylmorpholine <i>N</i> -oxide
NMR	Nuclear magnetic resonance
PyNO	Pyridine <i>N</i> -oxide
THF	Tetrahydrofuran
TMANO	Trimethylamine <i>N</i> -oxide
Tol	Toluene
Wt	Weight

## ข้อความแห่งการริเริ่ม

- 1) วิธีการใหม่ที่สะดวกสำหรับการเปลี่ยนสารอินทรีย์เฮไลด์ไปเป็นอนุพันธ์ของคาร์บอนิลได้ถูกพัฒนาขึ้นโดยใช้การออกซิเดชันของเอ็นเมทิลมอร์ฟอรีนเอ็น-ออกไซด์ภายใต้การกระตุ้นด้วยไมโครเวฟในของเหลวไอออนิกที่เป็นตัวทำละลายที่สามารถเก็บและนำกลับมาใช้ใหม่ได้
- 2) ครั้งนี้เป็นครั้งแรกที่นำเสนอวิธีการเปลี่ยนสารอินทรีย์เฮไลด์ไปเป็นเอมีน โดยใช้การทำปฏิกิริยาออกซิเดชัน และรีดักทีฟอะมีนชันแบบสองขั้นตอนในขวดเดียวกัน ภายใต้สภาวะที่ปราศจากตัวทำละลาย และการกระตุ้นด้วยคลื่นเหนือเสียง
- 3) วิธีการใหม่ที่มีประสิทธิภาพในการเปลี่ยนอัลกอฮอล์ไปเป็นสารประกอบคาร์บอนิลโดยใช้การทำปฏิกิริยาไอโอไดเนชันและออกซิเดชันแบบสองขั้นตอนในขวดเดียวกัน ภายใต้การกระตุ้นด้วยคลื่นเหนือเสียงได้ถูกรายงานไว้ในวิทยานิพนธ์เล่มนี้

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## STATEMENT OF ORIGINALITY

- 1) A new green protocol for the conversion of organic halides into carbonyl derivatives was developed using *N*-methyl-morpholine *N*-oxide oxidation under microwave irradiation in ionic liquid as a recoverable and reusable solvent.
- 2) This research reports the first time for the conversion of organic halides into amines using one-pot oxidation/reductive amination under solvent-free condition and ultrasonic irradiation.
- 3) A new efficient method for the conversion of alcohols into corresponding carbonyl compounds using a one-pot iodination/oxidation under ultrasonic irradiation is currently reported in this thesis.



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