

**EFFECTS OF COMPOSITIONAL RATIO AND POLING CONDITION ON  
HYSTERESIS PROPERTIES OF LEAD MAGNESIUM NIOBATE-  
LEAD ZIRCONATE TITANATE CERAMICS**

**SUPATTRA WONGSAENMAI**

**MASTER OF SCIENCE  
IN MATERIALS SCIENCE**

**ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่**

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**A THESIS SUBMITTED TO THE GRADUATE SCHOOL IN  
PARTIAL FULFILLMENT OF THE REQUIREMENTS  
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