

**SYNTHESIS OF COPPER OXIDE NANOSTRUCTURES FOR  
APPLICATIONS IN ETHANOL SENSORS AND DYE-  
SENSITIZED SOLAR CELLS**

**PHATHAITEP RAKSA**

**DOCTOR OF PHILOSOPHY  
IN MATERIALS SCIENCE**

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**THE GRADUATE SCHOOL  
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**MARCH 2010**

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**PHATHAITEP RAKSA**

**A THESIS SUBMITTED TO THE GRADUATE SCHOOL IN  
PARTIAL FULFILLMENT OF THE REQUIREMENTS  
FOR THE DEGREE OF  
DOCTOR OF PHILOSOPHY  
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**THIS THESIS HAS BEEN APPROVED  
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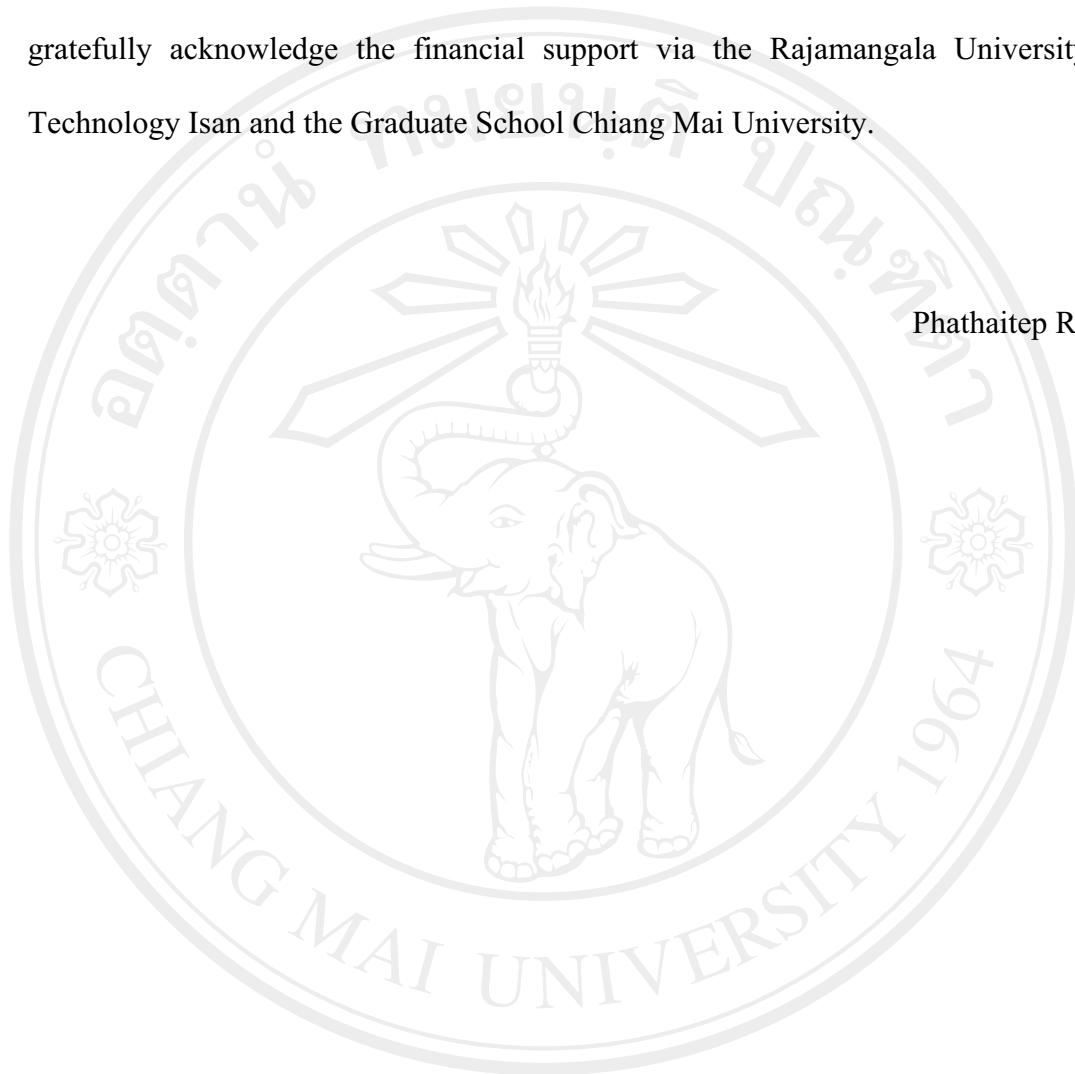
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Phathaitep Raksa



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