

**CHARACTERIZATION OF NANOSTRUCTURED CADMIUM AND ZINC  
CHALCOGENIDE SYNTHESIZED BY A MICROWAVE PLASMA  
TECHNIQUE FOR DYE-SENSITIZED SOLAR CELLS**

**WONCHAI PROMNOPAS**

**DOCTOR OF PHILOSOPHY  
IN PHYSICS**

ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่

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THE GRADUATE SCHOOL  
CHIANG MAI UNIVERSITY  
JANUARY 2012

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**A THESIS SUBMITTED TO THE GRADUATE SCHOOL IN  
PARTIAL FULFILLMENT OF THE REQUIREMENTS  
FOR THE DEGREE OF  
DOCTOR OF PHILOSOPHY  
IN PHYSICS**

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THIS THESIS HAS BEEN APPROVED  
TO BE A PARTIAL FULFILLMENT OF THE REQUIREMENTS  
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IN PHYSICS

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