

**FABRICATION OF TRANSPARENT
CONDUCTING FILMS FOR SOLAR
CELL APPLICATIONS**

SUTATIP THONGLEM

**DOCTOR OF PHILOSOPHY
IN MATERIALS SCIENCE**

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**GRADUATE SCHOOL
CHIANG MAI UNIVERSITY
NOVEMBER 2014**

**FABRICATION OF TRANSPARENT CONDUCTING FILMS FOR
SOLAR CELL APPLICATIONS**

SUTATIP THONGLEM

**A THESIS SUBMITTED TO CHIANG MAI UNIVERSITY IN PARTIAL
FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY
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19 November 2014

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To

I dedicate my dissertation work to my family. A special feeling of gratitude to my loving parents, Rawat Thonglem and Chaweewan Thonglem for love and care. My sister, Suchada Thonglem, she has never left my side and are very special.

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