


อิทธิพลของแม่พิมพ์โฟโตพอลิเมอร์ต่อคุณภาพงานพิมพ์ในการพิมพ์ยูวีเฟล็กโซกราฟี



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INFLUENCES OF THE PHOTOPOLYMER PLATE ON PRINT QUALITY  
IN UV FLEXOGRAPHIC PRINTING

Mr. Supachai Theravithayangkura

ศูนย์วิทยทรัพยากร  
จุฬาลงกรณ์มหาวิทยาลัย

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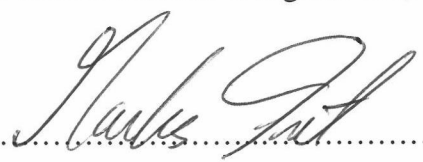
..... Deputy Dean for Administrative Affairs  
(Associate Professor Pipat Karntiang, Ph.D.) Acting Dean, Faculty of Science

THESIS COMMITTEE

..... Chairman  
(Professor Suda Kiatkamjornwong, Ph.D.)

..... Thesis Advisor  
(Assoc. Prof. Dr. Aran Hansuebsai, Ph.D.)

..... Thesis Co-advisor  
(Assoc. Prof. Pontawee Pungrasamee, M.S.)

..... Member  
(Mr.Markus Feil , staatlich geprüfter Drucktechniker )

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วิทยานิพนธ์นี้ศึกษาผลของหมึกพิมพ์ยูวีเฟล็กโซกราฟีที่มีต่อสมบัติทางกายภาพของแม่พิมพ์โฟโตพอลิเมอร์และผลของการเปลี่ยนแปลงดังกล่าวต่อคุณภาพงานพิมพ์ จากการใช้แม่พิมพ์หกชนิด หมึกพิมพ์สองชนิด และวัสดุใช้พิมพ์สามชนิด ได้กรณีศึกษาสามสิบหกรูปแบบทำการทดสอบความเสถียร, ความเข้ากันได้ และคุณภาพงานพิมพ์ที่ผลิตได้ของระบบต่างๆ ด้วยการวัดสมบัติความแข็ง ความหนา และน้ำหนักของแม่พิมพ์โฟโตพอลิเมอร์เพื่อวิเคราะห์การเปลี่ยนแปลงสมบัติทางกายภาพ ในด้านคุณภาพงานพิมพ์จะทำการประเมินกราฟการผลิตน้ำหนักสีและการประเมินองค์ประกอบต่างๆ ด้วยสยาตา ผลการทดลองแสดงให้เห็นว่า ภาวะการพิมพ์แต่ละรูปแบบมีลักษณะเฉพาะตัว ได้แก่ แม่พิมพ์ในโลเฟล็กซ์สปรินต์มีความต้านทานดีที่สุดในหมึกพิมพ์ยูวีเรดิคอลล แม่พิมพ์ในโลเฟล็กซ์เอฟเอเอซีมีความเสถียรต่อหมึกพิมพ์ยูวีเรดิคอลลและหมึกพิมพ์ยูวีแคตไอออนิกในระดับเดียวกัน ส่วนแม่พิมพ์ในโลเฟล็กซ์เอสที่สามารถผลิตงานพิมพ์คุณภาพสูง ไม่เหมาะสมที่จะใช้ในงานพิมพ์จำนวนมาก นอกจากนี้ยังกล่าวถึงปัจจัยต่างๆ ที่มีผลต่อระดับในการบวมของแม่พิมพ์และข้อควรพิจารณาเกี่ยวกับความสัมพันธ์ระหว่างการบวมตัวของแม่พิมพ์กับคุณภาพงานพิมพ์อีกด้วย

## ศูนย์วิทยทรัพยากร จุฬาลงกรณ์มหาวิทยาลัย

ภาควิชา วิทยาศาสตร์ทางภาพถ่ายและเทคโนโลยีทางการพิมพ์ ลายมือชื่อผู้พิมพ์..... อรัญ หาญสืบสาย

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SUPACHAI THERAVITHAYANGKURA : INFLUENCES OF THE  
PHOTOPOLYMER PLATE ON PRINT QUALITY IN UV FLEXOGRAPHIC  
PRINTING. THESIS ADVISOR : ASSOC. PROF. ARAN HANSEUBSAI,  
PH.D.THESIS CO-ADVISOR : ASSOC. PROF. PONTAWEE PUNGRASSAMEE,  
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This thesis studies the effect of UV flexographic inks on photopolymer plate physical characteristics and how these changing characteristics affect the print quality. Using six photopolymer plates, two UV inks, and three printing substrates, thirty-six case studies of the combinations of the materials were made and tested for their stability, compatibility, and print quality. The hardness, thickness, and weight of the photopolymer plate were measured, to analyze the changes in plate physical characteristics. The print quality was evaluated using tone reproduction curves, and visual assessment. The results imply that each material combination has a unique quality: namely, the Nyloflex Sprint has the most resistance against radical UV ink, the Nyloflex FAH performs an equal stability for both radical and cationic inks, and the Nyloflex ACE, which could produce a high quality print, can be considered not suitable for a long-run job. In addition, factors determining the degree and extent of swelling were listed and a consideration about a relationship between plate swelling and print quality was discussed.

Department Imaging and Printing Technology.....

Field of study Imaging Technology.....

Academic year 2001.....

Student's signature.....*Supachai Theravithayangkura*

Advisor's signature.....*Aran Hansubai*

Co-advisor's signature.....*P. Pongrassamee*

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