

數位印刷機之色彩表現差異分析

Color Difference Analyses for Major Digital Presses in Taiwan

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摘 要

由於資訊業發展快速，帶動其他相關產業加速技術的發展與更新，對印刷業而言，數位印刷雖為近幾年所新興的技術，但其在往後社會講求快速、效率、多樣化的要求下，必會成為重要的印刷科技發展方向之一，而在技術不斷更新發展的情況下，對於數位印刷機的印刷品質，也是非常值得探究的問題。因此，本研究乃針對台灣目前已引進的數位印刷機Agfa Chromapress 50i、Indigo E-Print 1000、Xeikon DCP-50D、MGI Digital Carte Master Color、傳統數位混合型印刷機(Hybrid Press) Heidelberg Quickmaster DI46-4及傳統平版印刷機Speedmaster 102-5，進行色彩表現能力的差異性分析。本研究以實驗方式進行，量測實際上機印刷之印刷品色塊，獲得CIEL*a*b*數據，輸入統計軟體進行分析。

Abstract

Due to the great demand of the digital process in the printing industry, there is an increasing market of the digital press in Taiwan. Digital printing technology does not only save printers production time and cost, but also provide flexibility on the short-run, on-demand, and variable-data printing. It has become a major technology trend in the printing industry. Print quality is always an important issue associated with the technical development of any printing machine. One of the major quality concerns for most printers is the characteristic of the color reproduction for digital presses. Therefore this study focused on the investigation of color reproduction for the major digital presses in Taiwan. It also intended to study the difference in color reproduction among digital, conventional sheetfed offset, and so-called hybrid presses. The presses used to conduct experiments for this study were Agfa Chromapress 50i, Indigo E-Print 1000, Xeikon DCP-50D, MGI Digital Carte Master Color (Digital Presses), Heidelberg QuickMaster DI 46-4 (Hybrid Press), and Heidelberg SpeedMaster 102-5 (conventional offset press). The experiment sampled, measured, and analyzed the four-color printed sheets of each press using the same digital original, IT8.7.3 and other complex four-color images. The CIELAB readings were entered onto SPSS and Minitab for analyzing the color difference (ΔE). The results and conclusions are presented in this paper.

關 鍵 詞：數位印刷、色彩、色差、色彩模式、印刷品質

Keywords: Digital Printing, Color, Color Difference, Color Model, Printing Quality

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