

PRINT CONTRAST COMPARISON BETWEEN DRY TONER BASED DIGITAL PRINTING PROCESS AND LIQUID TONER BASED DIGITAL PRINTING PROCESS ON ART PAPER

Aman Bhardwaj¹, Ruby Rani²
 Scholar, M.Tech. Printing Technology, GJUS&T, Hisar

Abstract: Digital printing process is a widely used printing process for small run jobs and high quality printing now a days. There are two types of digital printing processes Liquid toner based and dry toner based digital printing. In this research we compare the Print contrast of the dry toner based digital printing process and liquid toner based digital printing process.

Keywords: Digital printing, Art paper, Print quality, Gloss, Contrast, Liquid toner

I. INTRODUCTION

Digital printing is a process in which a document is transferred on a personal computer or any other digital storage device to a printing substrate with the help of a device which have text and graphic output. It is a method of printing where small run jobs from DTP (Desktop Publishing) and other sources are printed using large format and large volume laser and inkjet printers. In digital processes, information is digitized i.e. reduced to binary code to ease its storage and reproduction. In many markets digital printing has replaced lithography mostly at consumer and business level, resulted in substantially lower production costs. When compared to traditional offset printing methods, digital printing has a higher per page cost but this cost is reduced by cutting the cost of all the technical steps required to make printing plates. It also allows short turnaround time, on demand printing and also for variable data printing. The amount of money saved in labour and the raising competency of digital presses means that digital printing has reached at a point where it can stultify the ability of offset printing technology to yield larger print runs at a lower price. Dry toner based and liquid toner based digital printing press are widely found in the industry for small run jobs, high quality printing and less time consuming.

II. RESEARCH OBJECTIVES

The main aim of our research is to analyze the print contrast of Art paper printed with liquid toner based digital printing process and dry toner based digital printing process.

Research Methodology

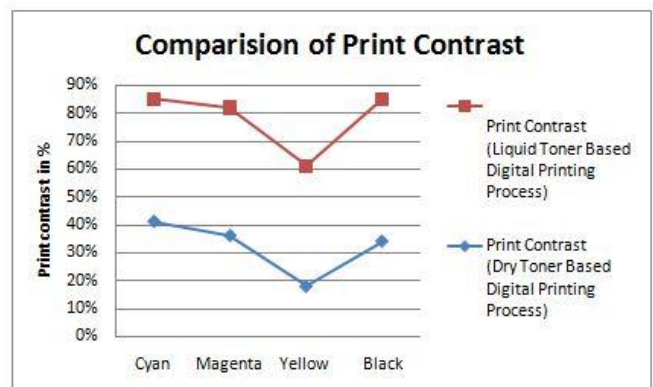
We take 100 Art paper sheet of 120 GSM printed with liquid toner based digital printing process and 100 Art paper sheet printed with dry toner based digital printing process. After the printing, we measure the readings of all of the 200 boards printed with liquid toner based digital printing process and dry toner based digital printing process. With the help of spectrophotometer print contrast is measured.

Data Collection and Analysis

Print Contrast

Print contrast of Randomly chosen 10 boards printed with liquid toner based digital printing process and dry toner based digital printing process each.

Sr. No.	Print Contrast (Dry Toner Based Digital Printing Process)				Print Contrast (Liquid Toner Based Digital Printing Process)			
	C	M	Y	K	C	M	Y	K
1	41%	37%	19%	32%	39%	49%	41%	51%
2	40%	37%	17%	37%	39%	50%	47%	45%
3	42%	36%	18%	33%	41%	44%	43%	56%
4	40%	35%	17%	36%	40%	43%	43%	53%
5	42%	37%	19%	34%	44%	42%	44%	52%
6	41%	35%	18%	32%	43%	49%	40%	50%
7	41%	36%	19%	34%	41%	43%	42%	55%
8	40%	36%	17%	35%	42%	47%	41%	50%
9	41%	37%	18%	33%	42%	44%	46%	52%
10	41%	36%	18%	32%	43%	45%	44%	50%



III. RESULT AND CONCLUSION

After analysis of the table and graph of the print contrast we found that the average contrast of the cyan printed with the dry toner based digital printing process is 41% and the cyan printed with the liquid toner based digital printing process is 44% and the average contrast of the magenta printed with the dry toner based digital printing process is 36% and the magenta printed with the liquid toner based digital printing process is 46%. Average contrast of the yellow printed with the dry toner based digital printing process is 18% and the yellow printed with the liquid toner based digital printing process is 43% and the average contrast of the black printed

with the dry toner based digital printing process is 34% and the black printed with the liquid toner based digital printing process is 51%. From the above result we conclude that the print contrast of the sheets printed with the liquid toner based digital printing process is much higher than the dry toner based digital printing process.

REFERENCES

- [1] https://en.wikipedia.org/wiki/Digital_printing\ (retrieved on 1-1-2016)
- [2] https://en.wikipedia.org/wiki/Coated_paper (retrieved on 27-5-2016)
- [3] <http://www.imaging.org/ist/resources/tutorials/inkjet.cfm>
- [4] http://www.cbe.buffalo.edu/people/full_time/e_furlanires_Inkjet.php
- [5] https://en.wikipedia.org/wiki/Inkjet_printing (retrieved on 15-6-2016)
- [6] https://en.wikipedia.org/wiki/Laser_printing (retrieved on 15-6-2016)
- [7] <http://www.printindustry.com/newsletters/newsletter-78.aspx>