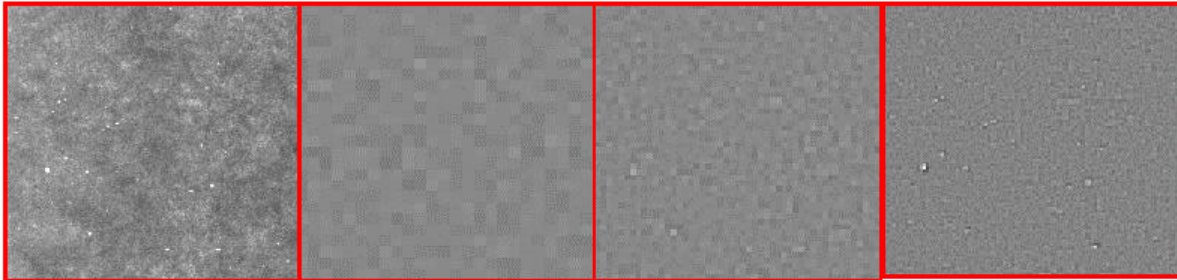


Print Mottle Analysis



Print mottle (left image) and some corresponding Wavelet component images

OpTest Print Mottle Analysis (PMA) revolutionizes the measurement of print mottle! Using advanced Wavelet algorithms, the PMA quickly quantifies print non-uniformity over a range of mottle sizes from 0.5 mm to 8 mm. Comparisons with reference samples are performed automatically providing the user with a rapid determination of print mottle intensity and size scale differences.

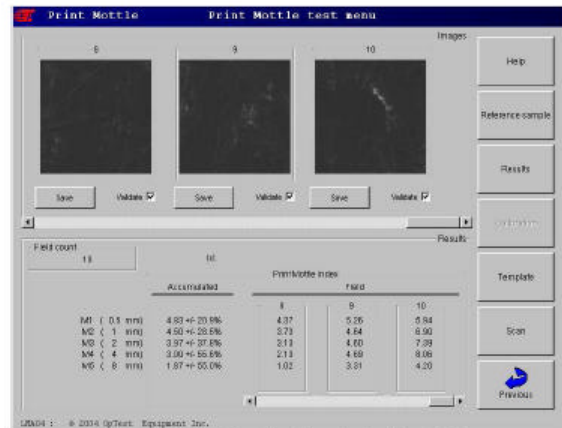
Print mottle is typically determined by visual ranking. These procedures are time-consuming and can be expensive. They also are difficult to carry out beyond a small amount of samples. The OpTest Print Mottle Analyzer, PMA, offers a fast, repeatable, objective instrumental determination of print mottle that emulates human perception.

Principles

A mathematical technique for frequential analysis, called 'wavelets', appeared in the 1980s and is now widely used. Researchers in signal processing have developed wavelet methods for several applications, such as filters for de-noising old musical records, compression of image or video data for file transmission and storage. The OpTest PMA uses a wavelet-based technique that partitions print mottle into its components as a function of the size scale of print mottle.

The PMA, consists of standalone software and a high quality colour document scanner. The PMA measures solid print areas up to 50 mm x 50 mm. It calculates the Print Mottle Intensities for 5 size ranges, or Components, ranging from 0.5 to 8 mm.

Component	M1	M2	M3	M4	M5
Scale (mm)	0.5	1	2	4	8



OpTest Print Mottle Analysis Test Menu

Advantages

- Comparison with user selected reference samples of solid prints
- Windows™ based, bitmap storage and retrieval, Excel™ ready data and print-outs
- Faster, more precise and more objective compared to visual testing
- High correlation with visual assessment

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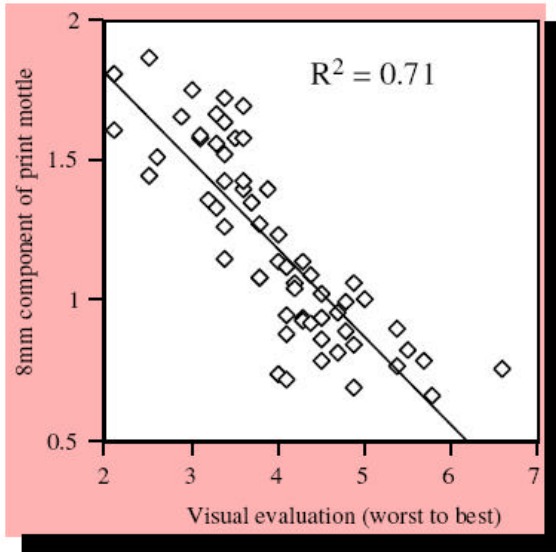
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a measurable difference...



Print Mottle Analysis

“The OpTest Print Mottle Analyzer, combined with the results from Paper PerFect Formation Analyzer, allows papermakers to optimize paper properties more efficiently, saving time and money while improving quality!”



Significant correlation between the M5 PMA Mottle Intensity and a visual panel assessment (Bernie et al, Paper Physics Conf., Victoria, BC, Canada, Sept. 03)

Published reports have demonstrated excellent agreement between visual panel rankings and the PMA Indices. The PMA was found to be faster and more precise compared to visual ranking techniques. Therefore the PMA can advantageously replace these time consuming, subjective visual evaluation methods.



Print Mottle Analyzer and Paper PerFect Formation Analyzer sharing the same computer platform

Acknowledgement

The wavelet algorithm was developed by Dr Jean-Philippe Bernié of Ondimage Inc.

Minimum System Requirements

Computer:

- Pentium 4+ and 256+ MB RAM
- Windows™ 2000/NT or higher
- Excel™

Options

- Computer with Excel™

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