

DYEBATH MONITORING

SMART LIQUOR® SYSTEM

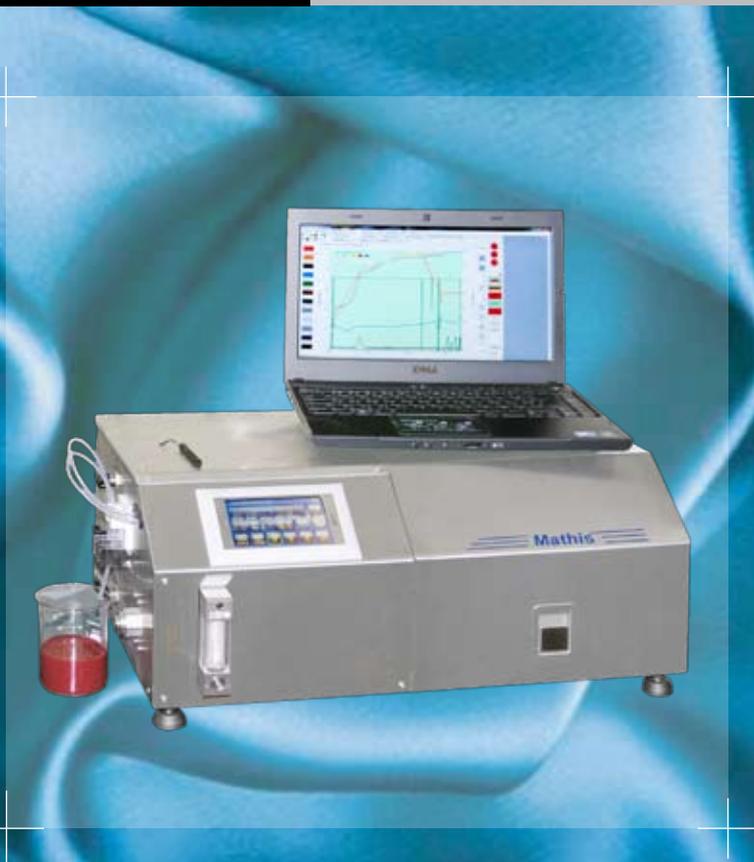
GENERAL DESCRIPTION

Smart Liquor System for dyebath monitoring to control exhaust dyeing processes by dyebath analysis.

Used to:

- calculate exhaust speed of each dye, with up to 6 dyes per dye bath (concentration from 0,1g/l up to approx. 10g/l);
- check compatibility index of the dyes in same bath;
- analyze the influence of substrate on exhaust behavior of dyes;
- check process parameters as temperature, pH, pressure differential, as well as exhaust curve of each dye during the dyeing process;
- calculate temperature gradients, dosing gradients (auxiliaries as salt, alkali, acid), based on the exhaust speed to achieve an optimized dye process with higher productivity, better color uniformity and cost reductions.

All data can be exported to Excel spreadsheets.



Optional tools on SmartLiquor® software:

- A) „solubility“ coefficient for disperse dyes on polyester;
- B) temperature and dosing gradient pre-optimization (specially for water soluble dyes);
- C) elimination of color change („tailing“) at beginning of continuous dyeing (Pad Batch).

Other software:

SmartMachine® for process optimization for each dye house machine, considering dye bath volume, textile good parameters, number of contact on machine, amongst other.

SmartRinse® for rinse and washing optimization, on reactive dyeing.



example of exhaust dyeing curve of polyester / viscose with five dyes (reactive / disperse), dye cruve with temperature, bath flow, pressure differential, dosing and pH

SmartLiquor® system can be used in three ways:

1) with sample being collected manually (offline)



Calculates exhaust speed of each dye, as well as dye concentration during dyeing process. Bath samples are collected manually. Dye bath is injected automatically into spectrophotometer cells by a pump with filter. Process data as temperature, time, dosing, pH, pressure differential are fed into software manually by operator.

2) connected to Colorstar Bobbin Lab Dyeing Machine (online)



with bench spectrophotometer and automatic system for continuous sample measuring, dye bath cooling for measurement and flowmeter. Ideal for research attached to Colorstar machine from Werner Mathis AG. Synchronized to process controller of Colorstar machine for all process parameter input, as temperature, bath flow, differential pressure, pH, dosing, etc.

Offline measurements of single bath samples can be made also.

System can be attached to other machines, previously prepared accordingly. (In this case SmartLiquor hardware is controlled by Colorstar processor.)

3) Connected directly to Production Dyeing Machine (online)



Dye bath samples are cooled and measured automatically by spectrophotometer in preset intervals.

The system calculates exhaust speed of each dye, as well as dye concentration during dyeing process.

Process data from production machine as temperature, pH, auxiliaries dosing, dye bath flow, pressure differential can be imported depending on machine controller.

Optional: pH measurement and conductivity directly on SmartLiquor unit via special probes. Offline measurements of single bath samples can be made also.

Werner Mathis AG
 Rütisbergstrasse 3
 CH-8156 Oberhasli/Zürich, Switzerland
 Telefon 41(0)44-852 5050
 Telefax 41(0)44-850 6707
 E-Mail info@mathisag.com
 Homepage www.mathisag.com

Aparelhos de Laboratório Mathis Ltda.
 Estrada dos Estudantes, 261
 06707-050 Cotia - SP, Brasil
 Tel: 55 (0)11 3883-6777
 Fax: 55 (0)11 3883-6750
 E-mail: mathis@mathis.com.br
 Site: www.mathis.com.br