SPECTRORAMA®: Seeing exact picture of dyeing cycle

The SPECTRORAMA® system is a set of equipment designed to carry out the spectrometric analysis of a dyeing cycle, with simultaneous readings of the dyebath and textile material. This unique and original system has been developed and patented by TECNORAMA of Italy, and is an absolute first of its kind in the world. By coupling the spectrometric analysis of exhaustion curves and the variations of the single concentrations of dyestuffs, for both the dye liquor and the textile material, it is possible to acquire an exact picture, at any time, of the progress of the dyeing cycle in question.

Instruments currently on the market provide only a simple spectrometric analysis of the dye liquor: The exhaustion curves, from the reading by transmittance of the dye liquor, do not always manage to give correct information on what is really happening to the textile material during a dyeing process. In particular, appraisal of the behaviour of dispersed dyestuffs using just the liquor reading system does not allow a correct analysis since the chromatic behaviour of these dyestuffs changes considerably as liquor temperature rises, so much that it no longer appears recognisable or ascribable to the original

shades. In this sense, the numerous trials performed, in several phases and with different classes of dispersed dyestuffs, have given anomalous, absolutely unreliable results.

But with the direct spectrometric analysis of the textile material, applying the reflectance technology, excellent exhaustion analysis results are obtained for this class of dyestuffs too. The direct spectrometric analysis of the textile material, during the dyeing process, also allows a correct evaluation of the final shade attained by the material during dyeing and after the various washing operations, offering considerable advantages compared with previous dyeing processes and evaluations of the real ΔE.

The system has very advanced software for the automatic management of all data through the processing of appropriate algorithms needed for a complete analysis. The interface uses simple functions and makes interpretation easy for the operator.

The SPECTRORAMA® system, which naturally includes the monitoring of temperature, pH, salinity and liquor flow, makes it possible to have an overall picture of the progress of a dyeing cycle, step by step, intervening if necessary on the dyeing machine in order to keep the process under control and bring it within preset parameters when necessary.

The SPECTRORAMA® system consequently offers a spectrometric reflectance reading system for textile materials during a dyeing cycle integrated with the well-known SPECTRODYE® system,

suitable for the online spectrometric analysis of a dye liquor using the transmittance technology and comprising equipment for the monitoring of temperature, pH, salinity and liquor flow, with the possibility of recording variations during the entire dyeing cycle. This system opens up new possibilities in the sphere of both laboratory and bulk production dye plant automation!

There are a host of advantages deriving from the use of this system, including:

◆ Real-time evaluation of anomalies during a dyeing cycle, with the possibility of making quick corrections and preventing incorrect processes or dyeing results.

◆ An increase in the quality of the final product, reducing corrections in the dyeing phase and the re-dyeing of faulty or non-compliant material.

◆ Greater productivity due to shorter dyeing times, thanks to correct dyeing progress and appropriate dyeing cycles.

◆ Lower operating costs, with low consumption of water, dyestuffs, power and heat.
Rapid and certain delivery times.