IN-LINE PROCESS MONITORING

SAVING OUR CUSTOMERS TIME & MONEY

THE VALUE OF TIME

For decades, color has been measured by taking samples from the process line and analyzing them using laboratory spectrophotometers. The typical procedure for offline measurements:

- Manually take a sample from the process
- Send/take the sample to the laboratory
- Injection mold a color chip
- Perform 'offline' measurements of color chip
- Report the results to production
- Decide on a process adjustment
- Repeat the above steps as many times as required

Unfortunately, offline color measurement provides information about past deeds (an hour ago, a shift ago, a day ago!) but only about little else. (Fig. 1)

The delay between sampling and obtaining the results from the laboratory can be time-consuming. A significant disadvantage is that only a single measurement is generated in this period, and the quality of the color before and after the sampling point is unknown. In short, laboratory spectrophotometers work like rear-view mirrors. They measure the *yesterday of things*.

With the advent of Industry 4.0, the Industrial Internet of Things (IIoT), machine learning, automation, and artificial intelligence, modern quality control systems must migrate from snail-pace laboratory analysis to real-time quality assurance that provides not only today's information but could also offer insights into the future using predictive analytics.

THE COST OF ONE OUT-OF-SPEC LOT (that you don't want to absorb)

- A costly return (reprocessing, energy, time)
- A lost customer
- A lawsuit

FIG 1. MASTERBATCH STANDARD & SAMPLE

THE VALUE OF PROCESS INFORMATION

When color is measured in real-time, it conveys more than just a hue value; it delivers a plethora of information about the process with which the product is being manufactured and provides operators with crucial information so they can take immediate intervention when process fluctuations occur. For example, operators can calculate residence time distribution (RTD).

In-line color measurement can, for example, determine process fluctuations caused by feeding and feedstock inconsistencies, drifting processes, uncontrolled startup phases, and blending homogenization issues, to mention a few.

Real-time color values are critical for optimizing many process variables and reassuring the operator that the extruded plastic, the paint formula, the food mix, etc., has a consistent color that indicates the product has been adequately formulated and mixed.

In addition, the EquiSpec can provide customers with documentation showing chemical concentration values at every step during the production schedule.

FIG. 2 EQUISPEC IPS

ADVANTAGES OF EQUIPMENT RENTING

- No upfront capital
- Fixed payments
- Flexible terms
- No maintenance costs
- Improved cash flow
- Easier to upgrade equipment
- Protection against obsolete equipment
- Tax advantages

UNIQUE FEATURES	SAMPLE TYPES
Reflectance & Transmission	Opaque, translucent & transparent
Full spectrum every 5 seconds	Solids, liquids, pastes, slurries, gels, yarns, fibers
Highest wavelength resolution in the industry	Molten polymers, water solutions, wastewater

RENTING AN EQUISPEC IPS

Until now, the cost of in-line color measurement has been a barrier to those companies that have a need to implement Equitech's technology in their production lines. Conscious of this situation, Equitech adjusted its sales policy and introduced RENTING to the market to provide access to affordable real-time color information.

The RENTING advantage is obvious: you can now access Equitech's in-line UV-Vis measurement technology by allocating a few *dollars per month* without needing capital expenditures and a lengthy internal budgeting process.

RENTING also lets you respond quickly to the advances in technology equipment without the concern of holding obsolete assets. Finally, RENTING offers many tax advantages.

Equitech offers RENTING with terms starting at 24 months at a very competitive cost.

FIG. 3 DIFFUSE REFLECTANCE PROBE

CONTACT US

Equitech Int'l Corporation
7711 Idlewild Road
Indian Trail, NC 28079
Tel (704) 882-4624
info@equitechintl.com
equitechintl.com