Color Process Automatic Technology is revolutionizing how plastic color is produced, giving you the highest level of insight and control over both your products and processes. Image Source: Pexels user Pixabay

The plastics industry has always been at the forefront of innovation, creating remarkable new materials and products. From cars to computers, plastics have shaped our world in innumerable ways, opening up the door to ways of living previously unimaginable.[1] Indeed, the very device on which you are reading this now only exists due to plastics.

But while the plastics industry has undoubtedly driven tremendous *product* innovation, it must also look for opportunities for *process* innovation in order to enhance efficiency and keep up with market changes. For many plastics manufacturers, the integration of on-line spectrophotometric color measurement within the production line has been a critical step toward process innovation, allowing for a new level of color quality control. With HunterLab's Color Process Automation Technology, you are now able to take on-line color measurement and quality control to even greater heights.

HunterLab's cPAT system goes beyond measurement to give you color control. Image Source: Shuttestock user inxti

What is cPAT?

Color Process Automation Technology (cPAT) offers a fully integrated on-line color measurement and closed-loop color control system designed to meet the evolving needs of the plastics industry. The heart of this system is the SpectraTrend HT, a lab-grade non-contact spectrophotometer with integrated height measurement technology to allow for accurate color analysis of a broad range of surfaces. The SpectraTrend HT is renowned for its color measurement reliability as well as the ease with which it fits into production lines in even harsh factory environments.

However, cPAT doesn't simply *measure* color within the production line, it *controls* it by triggering automatic feeder adjustments based on real-time color data. In doing so, cPAT can account for feed screw wear, bulk density variation, and other process variables that impact color in order to create more consistent products. When out-of-spec product is detected, operators are notified immediately and defective product can be automatically contained downstream. In all, cPAT is the most comprehensive color quality control system available today, offering plastics manufacturers unprecedented benefits.

cPAT can help plastics manufacturers increase use of recycled materials, helping you meet green initiatives and reduce your carbon footprint. Image Source: Unsplash user Gary Chan

The Benefits of cPAT

The cPAT helps plastics manufacturers realize a number of important benefits:

- **Enhancing Quality and Efficiency**: cPAT facilitates the production of correctly colored plastics while simultaneously providing continuous monitoring to detect out-of-spec product. This gives you the advantage of improving the overall quality of your products while preventing the release of incorrectly colored materials into the marketplace, ensuring that your customers receive only the highest quality goods. At the same time, continuous color monitoring allows you to minimize color changeover time, rework time, and scrap while giving you the data you need to refine your processing methods both in the immediate and long terms. As result of this improved efficiency, you can realize both meaningful yield improvements and material savings.
- **Increasing Use of Recycled Product**: Recycled materials present special challenges for plastics manufacturers using time interval-based QC checks, as such checks may leave you vulnerable to capstock color inconsistencies. As Ken Phillips writes, "Color Process Automation Technology can resolve this by automatically varying the feeder along with the material to keep capstock in spec as the percent of recycled constant on the backside is increased." As such, cPAT can help plastics manufacturers more reliably use recycled materials while also potentially reducing the per unit cost due to improved efficiency.

- **Adapting to Changing Workforce Dynamics**: Over the past several decades, the workforce within the plastics industry has changed drastically. While operators were once highly specialized, today operators tend to take on more generalist roles focused largely on solving problems rather than performing repetitive tasks. By eliminating the human variable from roles such as time interval-based QC, you minimize the risk of operator variation and subsequent error in color monitoring, a risk that is heightened in a heterogeneous workforce. At the same time, the real-time color feedback made possible by cPAT technology allows operators to take action as needed, allowing human the talents of operators to be spent on more complex and engaging work.

HunterLab Innovation

HunterLab has been a pioneer in color measurement technologies for over 60 years. Today, we offer a comprehensive range of portable, benchtop, and on-line spectrophotometers to meet the diverse needs of our customers. Our Color Process Automation Technology represents the highest level of color quality control available to the plastics industry today, helping our customers create the best products and processes. Contact us to learn more about our renowned products and let us help you select the right instruments for your color measurement needs.

1. "A Brief History of Plastic's Conquest of the World", May 29, 2011, https://www.scientificamerican.com/article/a-brief-history-of-plastic-world-conquest/