

Dynamic Imaging Particle Analysis Application Focus: Particle Differentiation in a Heterogeneous Sample- Wash Water

The FlowCAM® really shines is when looking at samples that are heterogeneous in nature, where multiple particle types are present. In these situations, using imaging particle analysis and pattern recognition techniques can provide an automated method for characterizing the types and quantities of particles present.

In this example, a wash water sample from a manufacturing process for electronic devices was analyzed. These devices are washed to remove traces of fibers, metals and plastics from the manufacturing process. It is important that the wash water contains less than a certain number of each of these particle types, as too many leftover particles could cause failures. In addition, the types and numbers of particles washed off can serve as an indicator for any problems arising in the actual production process itself.

A diversity of the particle types was found: long, skinny fiber particles, semi-transparent metal shavings, and more opaque plastic particles.

By creating libraries based on particle characteristics, each run was automatically filtered into the different types desired, and the corresponding volume percent, particles/ml, and PPM was calculated in real time.

Using the FlowCAM allowed the customer to quickly determine if there was an issue with their manufacturing process.

