

# ELECTRIC & ELECTRONICS

## Glue Height Inspection



### Problem Identified

In precision assembly processes, the accurate measurement of glue height is critical to ensure proper bonding strength and product reliability. The industry requires maintaining glue height within strict tolerance, but the existing inspection system failed to meet this standard. This limitation resulted in potential quality issues, including weak adhesion and inconsistent product performance.

Visual checks were insufficient to detect micro-level height deviations, leading to a higher risk of defective output. A more advanced inspection method was needed to meet these stringent requirements.

### Solution Provided

A high-resolution sensor system was proposed to enhance the accuracy of glue height measurements. Using the ECCO 95.025G sensor, the system achieved lateral resolutions between  $13\mu\text{m}$  to  $14.5\mu\text{m}$ , offering sharper and more visible detection of glue edges. This solution allowed for both 2D and 3D visualization of glue applications, enabling detailed analysis and verification.

The improved detection capability significantly reduced the likelihood of undetected height deviations. This approach surpassed traditional inspection methods by providing precise, repeatable, and data-driven quality control.

### Results & Summary

The implementation of the sensor enabled accurate glue height measurements, with clear visual representation in both 2D and 3D formats. The sharper image resolution improved defect detection rates, ensuring that glue application met the tolerance requirement. Process reliability increased, leading to consistent product quality output. This upgrade also reduced inspection time while improving operator's confidence in measurement accuracy.

Overall, the new system achieved the required precision standard, eliminating a major source of quality risk. This study demonstrates how precision manufacturing can benefit from advanced optical inspection systems to meet demanding quality standards.

