



# EPP

## EUROPE

### Electronics Production and Test



**INTERVIEW**

**C. E. Strangio,**  
**Cami Research**

CableEye is so simple to use,  
that most people begin testing  
within about 10 minutes

**COVER**

## A complete 3D inspection solution



**CONTENT**

Trade shows + events  
**40 years of productronica**

PCB + Assembly  
**Screen and stencil  
printing goes 3D**

Test + Quality Assurance  
**Detection analysis  
with AOI system**



**Productronica**

Visit us at  
Booth A2-281

# KOHYOUNG

First in the inspection world: The shifting industry paradigm with 3D measurement

## A complete 3D inspection solution

Koh Young Technology, the leading supplier in the SMT inspection market, now offers a total 3D inspection and process optimization solution. It has been developed after more than 13 years' experience, along with extensive knowledge gained by working with industry leaders around the world.





Source: Koh Young Technology

Not terribly long ago, we began considering 3D imaging as the vital and indispensable specification in selecting our inspection systems. For many years we have relied on our skills and experience to control the process and maintain high quality, even in light of the shortcomings of inspection tools. These shortcomings had occasionally created more problems than providing solutions. The discussion has now progressed beyond process control and defect detection to such issues as industry 4.0 and big data analysis for process optimization. All the while, we have always had 3D measurement and inspection systems in mind as the indispensable assistant, providing reliable information that we can utilize.

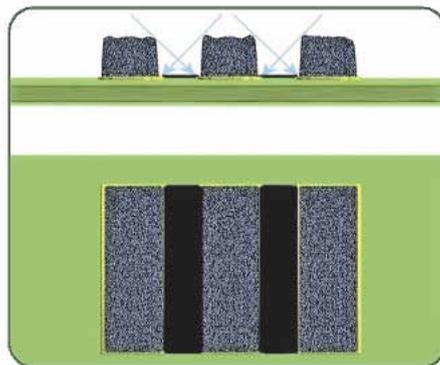
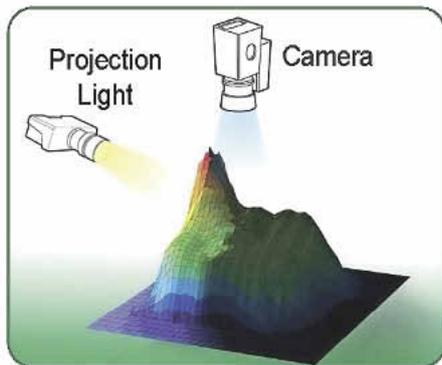
Koh Young Technology, known as the leading 3D SPI (Solder Paste Inspection) systems provider for SMT, has a relatively short yet impressive history. The KY-3030 series that was introduced to the market in 2004 was a game changer in terms of accuracy and repeatability when it was introduced. It was (and is) also easy to use and program, featuring fully-functional SPC software. It offered a whole new concept of utilizing the SPI system as a process optimization tool instead of merely a defect finder; it was a new approach, where process experts could finally realize what they had intended to achieve. It simply had not been offered by any other OEM in the inspection industry, although there had been high expectations.

Behind the scenes in this new company were ten engineers led by Dr. Kwangill Koh. Surprisingly, none of the members of this team of engineers were experts in optics; most of them were mechatronics experts who had experience in developing SMD mounters. Dr. Koh took an innovative approach, however. As the inventor of the world first high-speed gantry type mounters at his previous work in Mirae, he and his team of engineers began developing a 3D inspection system, the starting point being to eliminate the ambiguity of template matching as an inspection approach. They wanted to provide customers with reliable measurement values, which they could utilize, to understand and control printing process quality

**Koh Young Technology now offers a total 3D inspection and process optimization solution.**



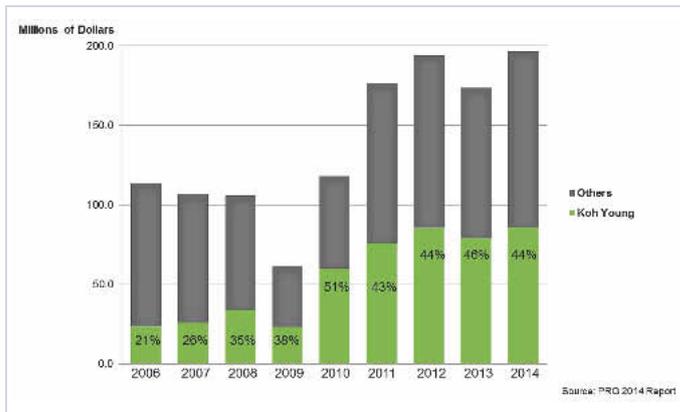
The KY-3030 system.  
Source: Koh Young Technology



Shadow problem.  
Source: Koh Young Technology



Dr. Koh, the man behind technology.  
Source: Koh Young Technology



Koh Young's SPI market share graph, based on PRG (Prime Research Group) report, 2006–2014.

Source: Koh Young Technology

paste deposits. Later, Koh Young Technology developed their innovative Multi-Projection Phase Shift Moiré technology further to invent the world's first 3D AOI (Automated Optical Inspection) system, capable of inspecting everything on an assembled PCB. After its introduction in 2004, Koh Young's KY-3030 series SPI quickly gained significant attention from top electronics manufacturers for its unique concept of process optimization based on highly accurate 3D measurement. In 2006, Koh Young Technology was reported to have the No.1 global market share in the SPI (after

better. Dr. Koh applied his strong philosophy regarding making decisions for any new business or application, that his team must be the first one in the marketplace; else we should have a game-changing solution that can change or stimulate the market. Since the goal is high, one does not fear taking on challenges to solve the most difficult problems. The company still adheres to his motto. Dr. Koh and his team developed and engineered the best solution to overcome the common inspection bottlenecks at the time, including shadowing problems, when inspecting irregularly-shaped solder

FULL 3D AOI



**Zenith LiTE**  
• Best value AOI  
• 4way Projection



**Zenith (4M)**  
• High Speed AOI  
• 8way Projection



**Zenith (8M)**  
• Pre/Post-reflow 3D AOI  
• Fastest Speed + 8way Projection

Koh Young product lineup.

Source: Koh Young Technology

FULL 3D SPI



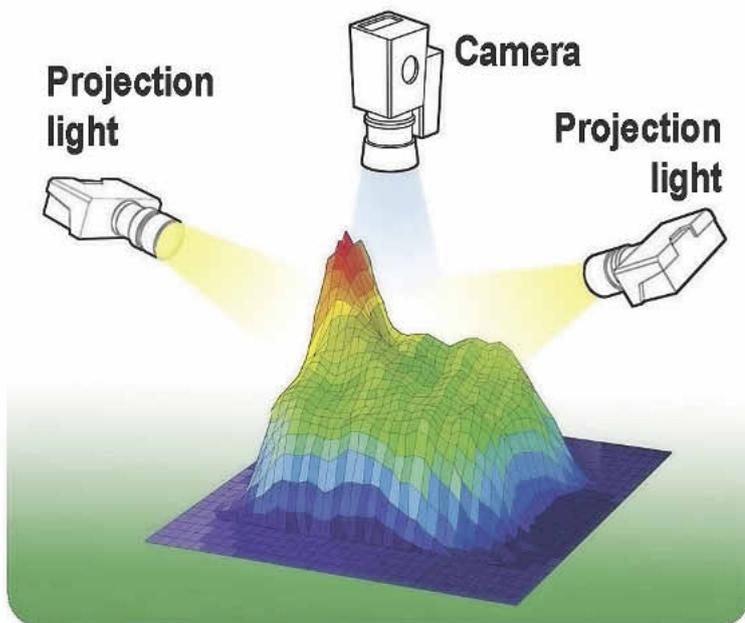
**KY8030-2**  
• Best value SPI in class  
• 01005 ready



**KY8030-3**  
• Fastest & Scalable SPI  
• 01005 / 03015 ready



**aSPIre 2**  
• Ultimate Accuracy with High Speed  
• 03015 / 008004 ready



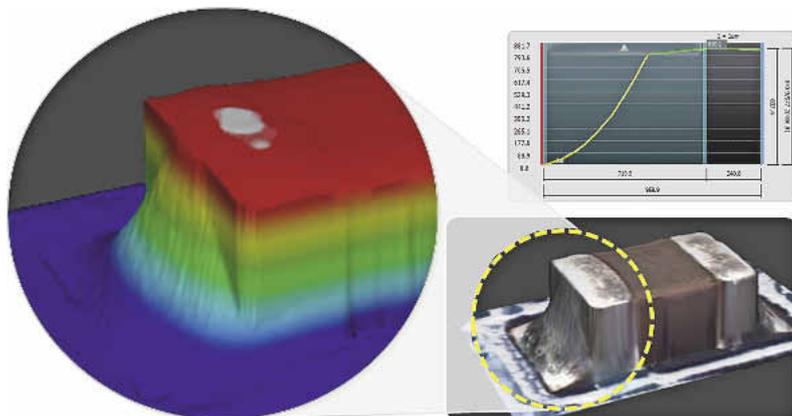
Source: Koh Young Technology

Dual projection.



Source: Koh Young Technology

Quad projection.



3D solder joint inspection by Zenith AOI.

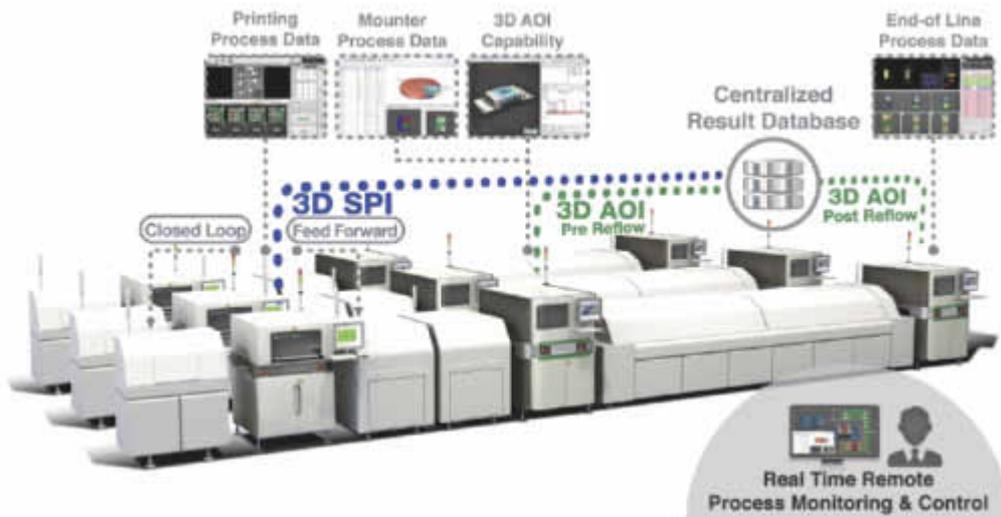
Source: Koh Young Technology

printing) market, with 20.7% market share (PRG report, 2006–2014). The company's share in 2014 was close to 50% in the global SPI market, with more than 1,600 industry leaders and 8,000 systems installed worldwide. Koh Young has introduced a number of award-winning SPI systems with advanced capabilities and solutions including the aSPiRe and KY8030 series, and an automated tabletop system.

A major innovation that the company brought to the market was the Zenith 3D AOI system. This revolutionary system completely changed the mindset of the 25 year old AOI industry. For a long time it had been common consensus that one had to spend a significant amount of time programming and tuning when running new product. One also needed to be a true expert in illumination and process parameters in order to find the optimal set of conditions to inspect each component type, even when dealing with new components that are added every day. By having parametric approach, Zenith made using AOI system as simple as learning one's ABCs. Lifted leads can be detected now by measuring lead height, missing components are easy to detect since the system knows component dimension and height; and the solder joint profile is also measured using standard top-view optics.

## Koh Young Technology

Koh Young Technology, Inc., a leading 3D measurement, inspection equipment, and solutions provider, serves wide range of industry leaders' needs in the global PCB assembly and semiconductor markets, where technology and the markets are driving innovations in diversified fields including smart devices, automotive electronics, telecommunications, military, medical, industrial controls and semi-conductors. The headquarters are located in Seoul, Korea; the company maintains offices in Germany, the United States, Japan, Singapore and China for close communications with our customers. Our networked sales and support partners cover all continents, countries and states.



Total solution of centralized process management.

Source: Koh Young Technology



Furthermore, Koh Young Technology has taken steps to support the industry 4.0 production environment goal. Its vision to connect all process-related information gathered from the Koh Young inspection systems (3D SPI, pre-reflow 3D AOI, post-reflow 3D AOI) is in line with the ongoing dream of the industry, i.e., fully automated production lines. Working with peer groups and customers with similar vision, the company is drawing closer to providing the total process optimization solution with full traceability to defects and their root causes. Enabling tools include process dashboards to visualize the current status of all production lines, a centralized measurement value database, on top of the full line of 3D measurement-based inspection systems.

The company aims to maintain its venture spirit to break through the most challenging technical problems to help users benefit from their innovative inspection technologies. At productronica 2015, Koh Young Technology will exhibit its continuing innovation through upgraded products and new features for the high mix, low volume production environment. Some of these include faster 3D AOI with a wider measurement range at the same accuracy, an embedded rework tool for SPI, active process control by machine to machine communications, and more.

**productronica, booth A2-377**

[www.kohyoung.com](http://www.kohyoung.com)

## Zusammenfassung

Der Artikel zeigt auf, welchen beeindruckenden Weg Koh Young Technology als Hersteller von Inspektionssystemen nach 13 Jahren Erfahrung zurück gelegt hat. Zur productronica in München werden wieder Innovationen präsentiert: Weiterentwickelte Lösungen und neue Features für die high-mix, low-volume Produktionsumgebung.

## Résumé

L'article montre l'impressionnant chemin parcouru par Koh Young Technology tant que fabricant de systèmes d'inspection après 13 ans d'expérience. De nouvelles solutions seront présentées à la productronica à Munich : des perfectionnements et de nouvelles fonctionnalités pour un environnement de production high-mix, low-volume.

## Резюме

Статья показывает, какой впечатляющий путь проделала технология Koh Young как производителя контрольных систем за 13 лет экспериментов. К выставке Productronica в Мюнхене будут представлены еще инновации: усовершенствованные решения и новые возможности для производства разнообразных мелкообъемных изделий.