

Automated Optical Inspection for Processing Defects on Agricultural Goods at the Example of the Potato Processing

The quality of the final products is crucial in industrial processing of agricultural product (indicating mainly food). In order to avoid health risk to consumers without however big influences to productivity, agricultural products are always required to be automatic optically inspected before coming to the end products.

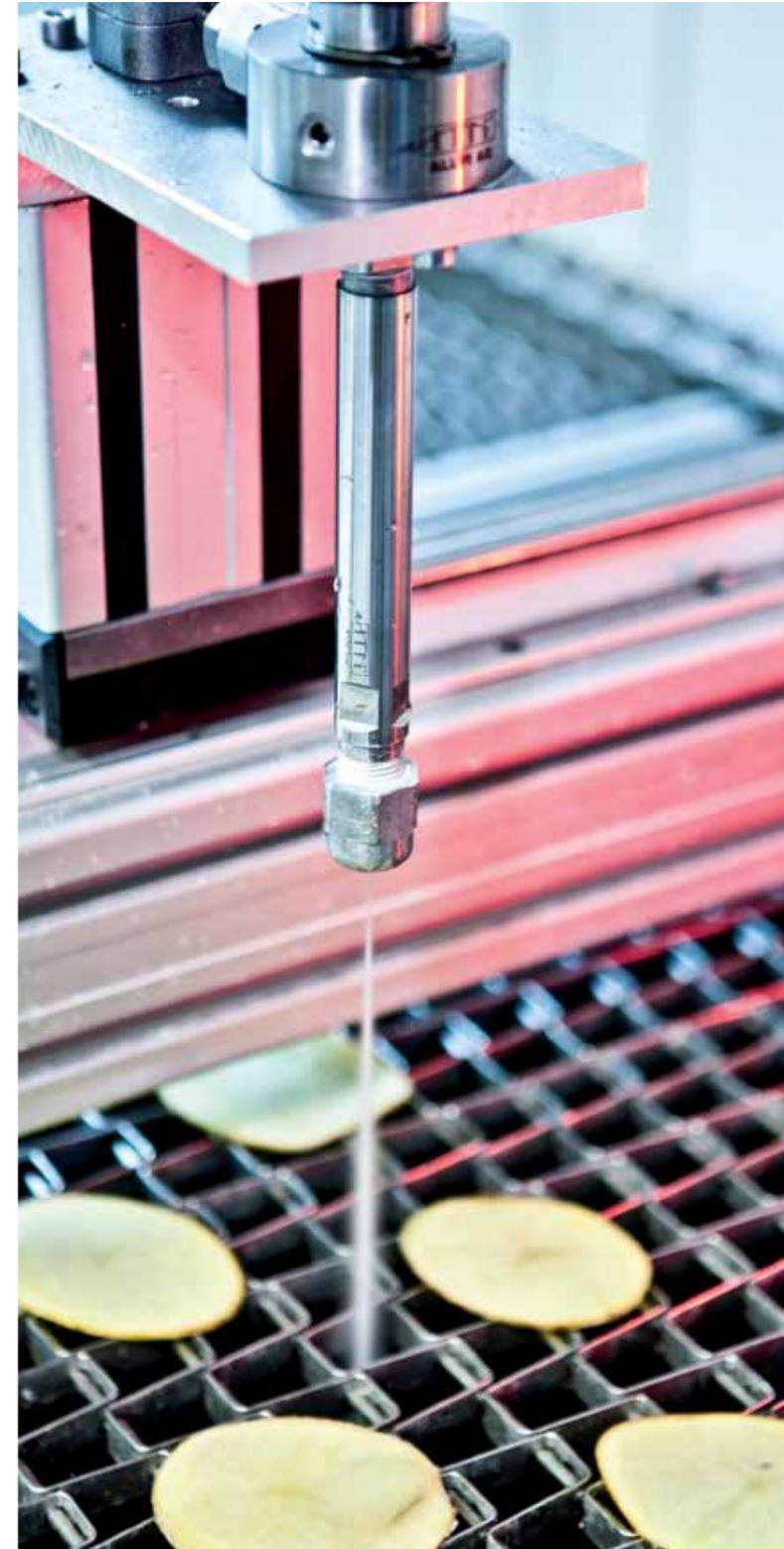
An automatic optical inspection system ensures a consistent quality and appearance of products. Nowadays, automatic optical inspection systems are able to sort out whole, defective objects. These objects are disposed or further processed into low-quality products. To classify processed product into high-quality products, is either a considerable expense of economy, processing time or it is not feasible in technique. The specific challenges to automatic optical inspection of industrially processed foods are:

- the high volumes,
- the production environment in relation to Hygiene, climate, etc.,
- the natural variations in shape, color and quality of agricultural products.

The natural variation can be caused by storage, transport or process-related buffering time.

Even such agricultural products are lost by the sorting out of whole objects that can be recovered by post-processing. The avoidance of this waste of the used products provides a large savings potential for the food processing industry. An automatic post-processing optimizes the efficient use of agricultural products in industrial production. The rejected products can be at least partially processed to high-quality end products through a targeted cutting off the defects.

Sensors, control and processing are combined for a specific processing of defective agricultural products. A secure, robust and fast solution must be found for all three technologies for industrial applications. The analysis of image information of the optical sensor will be configurable to react to the natural variability of the product. An appropriate processing strategy and method is selected in the process based on the results of this evaluation. The most efficient use of the products should be allowed depending on the input quality through a quick or precise processing process in addition to the specific conditions.



Test facility for water jet cutting and automated optical inspection

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