



SORTING BULK MATERIALS

Bulk materials are conveyed goods in bulk form, which must be supplied to industrial processing as purely as possible. Different sort criteria are applied to the various bulk materials. Examples of such inspection tasks include sorting plastic granules, detecting foreign bodies in tobacco stems, teas, herbs or dried vegetables and also the sorting of minerals (e.g. calcite, diamonds etc.) or waste glass shards.

Our technology

The bulk material is whisked off a conveyor belt at a speed of about 3 m/s with a line camera taking continuously snapshots of the action. Behind the camera line of sight the unwanted objects are ejected from the material flow by individually controlled air jets.

Partners in the industrial implementation of our technique include the companies Petkus GmbH, Reemtsma GmbH and Binder+Co AG, for example. Each company requires a different technological product specialization for the industrial implementation. Please contact us if there is not a product specialist yet for your specific application.

We will find the right technical solution for you.

CONTACT



Dr. Kai-Uwe Vieth
Visual Inspection Systems (SPR)
Phone +49 721 6091-279
Fax +49 721 6091-413

kai-uwe.vieth@iosb.fraunhofer.de
www.iosb.fraunhofer.de/SPR



Dipl.-Ing., Dipl.-Wirt.-Ing. Henning Schulte
Business Unit Development Automated Visual
Inspection
Phone +49 721 6091-275
Fax +49 721 6091-413

henning.schulte@iosb.fraunhofer.de
www.iosb.fraunhofer.de/Business Units



Fraunhofer Institute of Optronics, System
Technologies and Image Exploitation IOSB
Fraunhoferstraße 1
76131 Karlsruhe, Germany

FOODSTUFFS

With excellent quality
Inspected, sorted, cleaned





© Kurt F. Dornik / pixelio



© Lupo / pixelio



© Joujou / pixelio

HIGHER FOOD QUALITY

OPTICAL SORTING SYSTEMS FROM UV TO NIR

We expect our food to be of the highest quality and purity. This means that the inspection technology and methods used during manufacturing must meet these demands as well.

Previously established inspection techniques:

- R-G-B camera technology
- Laser technology
- X-ray technology.

New technology of the Fraunhofer IOSB:

Camera technology in the **ultraviolet or infrared wavelength** range. Within this spectrum, many products exhibit differences that are not detectable in the visible wavelength range.

The IOSB has a multispectral workbench for analytical technology from 240 nm to 2500 nm used for preliminary inspections. A spectral database is currently being established at IOSB for different foods and their critical foreign objects.

TEA SORTING

HIGH GRADE BULK MATERIALS IN THEIR PUREST

Tea promises enjoyment and well-being as attested by consumers in Germany who consume about 50,000 tons of tea a year. (Source: Die ZEIT 39/2012)

An important quality feature is the purity of the tea. Foreign particles that end up in the tea on its long road from the producer in distant countries to the processor must be removed. The new opto-electronic sorting system FoodControl removes various foreign bodies from a variety of dried foods. The system is also used successfully with dried vegetables and fruits; industrial application is thus planned to be expanded to this product area, among others.

FoodControl offers:

- Continuous quality control and sorting
- Process chain integration through PLC linking
- Retrofitted into existing plants
- Successfully in use since 2005, for example, at SALUS-Haus.

And of course, the system works equally well with **rice, corn and other cereals**.

GRAPE SORTING

EXPANDING THE PREMIUM SECTOR

A new grape sorting module offered in the Future by the Fraunhofer IOSB can be integrated as a component into the existing destemming machine of a winery.

- First tests were carried out with the varieties Viognier, Riesling, Pinot Blanc, Lemberger, Trollinger and Cabernet Dorsa.
- All of the sorting results were assessed as »very good« without reservation by the co-operation partner (Cleebronn & Güglingen) and the cellar master.

The goal is to divide the entire scale into two different »Oechsle fractions« (high/low) as well as to:

- harvest all grapes from vines,
- achieve top wines with a higher yield and expand premium batches,
- optimally utilise the short time span of the harvest through high-tech support.