



REDWAVE XRF: new sorting possibilities for a multitude of materials

Austrian sensor-based separation and sorting equipment specialist REDWAVE has introduced a new sorting system - the REDWAVE XRF - which analyses and evaluates materials according to chemical composition.

The new REDWAVE XRF sorting system was initially used in the field of glass sorting, more precisely for the separation of heat-resistant and leaded glass from waste glass cullet. Soon it became apparent that potential application fields extended far beyond the glass sector.

The use of this innovative technology, in combination with the development of a new machine design, set new standards in metal sorting, in particular the sorting of non-ferrous metals. Using this technology, it is also possible to separate material which, until now, was considered impossible to sort.

The REDWAVE XRF-M analyses and evaluates materials according to their chemical composition. Unwanted parts are reliably detected and sorted. In contrast to other technologies, moisture, colour and surface impurities have no negative effect on the detection ability. This technology can be used in sorting

processes to recognise an accumulation of element characteristics, including detection of undesired materials.

Multi-faceted

Besides high throughput and purity, the flexible and versatile X-ray fluorescence sorting technology offers great advantages over other sorting techniques such as camera or X-ray transmission. The applicability of XRF technology is multi-faceted and not limited

SPECIFICATIONS

Unit name	REDWAVE XRF-M
Sensor system	EDXRF energy dispersive X-ray fluorescence spectrometer
Sorting width	450-1370 mm
Throughput rate	Dependent on material and grain size
Benefits	A high level of detection is guaranteed even in the presence of material which is dirty or otherwise contaminated. Elemental analysis of the feed material. Colour-independent recognition is possible (for example, for the sorting of aluminium, zinc, stainless steel). Sorting of alloys.

COMPANY HIGHLIGHTS

Company

REDWAVE, a division of BT-Wolfgang Binder GmbH

Expertise

REDWAVE specialises in sophisticated, fully-automated separation and sorting technologies for the recovery of recyclable materials such as glass, plastics, scrap metal, paper, mixed household and municipal solid waste, RDF, WEEE, commercial & industrial waste, minerals and wood.

Technology

A sensor-based sorting technology: depending on the requirements, different materials or colours will be identified (NIR, XRF, camera or combined systems)

to one material class or application. Owing to the sorting processes employed, high-purity metal fractions are produced which can be sold directly and profitably.

Assuming current revenues for the recovered metals from the sorting of Zorba, the payback period of the machine – including labour and operating costs – should be reached in less than a year. The flexibility of the XRF technique and the sophisticated sorting logic make it possible to respond to changes in the sorting processes as quickly as possible. Furthermore, a wide variety of sorting steps can be carried out with the same machine and different pre-set sorting programs.

This innovative sorting solution has already been successfully implemented in various sorting lines and plants worldwide, bringing the sorting of Zorba, Zurik and non-ferrous metals to a new level.

Applications

The XRF spectrometer can be used for material recognition, separation and quality control. In general, solid materials containing a specific and characteristic element can be analysed and separated; this element is used as the sorting criterion.

As previously noted, XRF technology is not limited to one material class or application but can be used in a wide variety of fields. Some of the many application areas are: glass (lead glass, glass ceramics, ceramics, screen glass); minerals (arsenic and mercury minerals, separation of ore with different contents of accepted materials, sorting of different minerals according to grade purity); metals (brass, copper, stainless steel, ferrous, chrome, zinc, vanadium, several varnished metals, several aluminium groups).

More information at www.redwave.at