

SIKORAEXTRA

Your magazine for Inspection | Sorting | Analysis



Welcome to the Fakuma 2021

04

How Sortco and SIKORA
work together

09



Dear readers,

Finally, it's time to breathe the air of the trade fair again! We are delighted that the long wait is now over and Fakuma is just around the corner. From October 12 to 16, 2021, the renowned trade fair for plastics processing opens its doors in Friedrichshafen. SIKORA will be on site. We cordially invite you to visit us at our booth A6-6110.

Convince yourself personally of our trendsetting technologies for quality control during plastics production and processing. In advance we already show you in this issue which highlights you can expect at our booth.

Dr. Christian Frank
CEO SIKORA AG



Ralf Kulenkampff has been responsible for our Plastics business unit since the beginning of the year. In an interview, we introduce him to you and also look at the detection of color deviations with the PURITY CONCEPT V. You can also find out about the advantages of a vibratory feeder for transporting plastic pellets.

We look forward to a personal exchange and interesting technical discussions with you and hope you enjoy reading this issue!

Sincerely,

Dr. Jörg Wissdorf
Executive Board Member SIKORA AG

Welcome
to the



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SIKORA AT THE FAKUMA 2021

Visit our booth A6-6110

From October 12 to 16, 2021 the Fakuma will take place in Friedrichshafen. SIKORA will be there again and present innovative online and offline systems for the inspection, sorting and analysis of plastic pellets. Look forward to the following highlights:

PURITY SCANNER ADVANCED

In the field of online inspection and sorting of plastic pellets SIKORA presents the PURITY SCANNER ADVANCED. The system combines in a unique way an X-ray camera with up to three optical cameras. Thus, even smallest metal inclusions in the raw material from a size of 50 µm can be detected. In addition, the optical cameras detect black specks and burns on the pellet surface. Defective pellets are separated immediately after detection by means of compressed air. The integrated software provides the operator with a statistical evaluation with information on the size, area and number of detected contaminants in the production process.

PURITY CONCEPT V

For offline inspection and further analysis SIKORA presents the PURITY CONCEPT V. The automated light table automatically inspects the plastic pellets placed on a sample tray within a few seconds and evaluates the image recordings. The system detects black specks and color deviations from a size of 50 µm and marks the contamination in color on the monitor image and in parallel via projector on the sample carrier. A clear assignment of the contamination and a follow-up control are thus possible at any time.

Furthermore, SIKORA presents a wide portfolio in the field of quality control during the extrusion of tubes, pipes, hoses and sheets.



Test your pellets with the PURITY CONCEPT V!

You want to know how SIKORA's PURITY CONCEPT V works?! Then why not try it out!

In the context of the Fakuma SIKORA offers customers free live material tests. Just bring your pellet sample (approx. 100 g) that you want to test and contact us. We will perform the test together with you and discuss the results directly on site. If you wish, you can also make an appointment for this in advance.

Visit our booth

For your visit to Fakuma we offer you a limited contingent of e-tickets. Use the QR code to go directly to registration.

Or feel free to write to us without obligation:
sales@sikora.net



„THE MANY APPLICATIONS OF OUR SYSTEMS ARE FASCINATING “

Interview with Ralf Kulenkampff, Head of Sales Plastics SIKORA AG



Ralf Kulenkampff, Head of Sales Plastics, during the interview

Mr. Kulenkampff, you have been working for SIKORA since 2017. Since this year you are responsible for the business segment plastics. What do you like about your new job?

I am delighted to have taken over such a dynamic business area. For me, this is not a "new" area. We have been on the market since 2013 and have already made a name for ourselves with our inspection and sorting technologies. As a result, we have built up a solid customer base with whom we work in partnership and now not only implement initial projects, but increasingly also follow-up orders. The many applications of our systems are fascinating. In addition, I see the technical advantages that our products offer our customers.

What solutions do you have for your customers?

We supply a complete package for both online applications and offline systems – depending on what the customer requires. Our portfolio includes an inline system, which combines X-ray and optical technologies to inspect plastic pellets of any kind and to sort out impurities. Furthermore, SIKORA offers two laboratory systems, e.g. for incoming goods inspection or for material release before delivery. Depending on the requirements, the customer can choose between an optical system, which detects black specks and color contamination and color deviations, or an X-ray based system, for metallic impurities in the pellets.

Are there any technological innovations that you would like to present to us?

Over the past years, we have grown with the different applications and customer requirements. This is made possible, for example, by the modular design of our inline inspection and sorting system. Depending on what needs to be detected, different camera types can be installed in the PURITY SCANNER ADVANCED. Due to the open exchange with customers, we have added another camera setting to the standard

portfolio of the system. This allows us to offer three cameras that are directly aligned to look at a spot. With this setting, we achieve a high detection rate that has already proven itself with numerous customers.

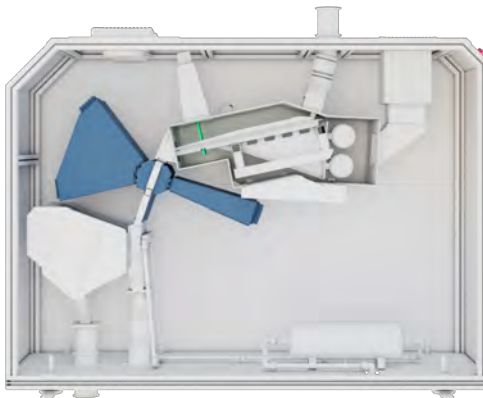
That sounds interesting. And what does the customer gain from the higher detection rate?

A significantly higher detection rate makes it possible to detect more contaminants. With three cameras, you naturally see more and thus also have the chance to remove more contaminants from the material. Unfortunately, the 2-camera solutions currently on the market still leave a lot of room for "overlooking" contamination – this is always the case when the defective areas are outside the field of view of the installed cameras.

You also mentioned the laboratory testing. What solutions does SIKORA offer here?

Our PURITY CONCEPT Systems – especially the PURITY CONCEPT V offers many advantages as an all-rounder for small pellet quantities in the laboratory in the fast and simple detection of contamination. The automated light table detects typical contamination such as black specks on pellets. In addition, contamination and color deviations on test plates and flakes can also be displayed. In contrast to manual testing, which depends on the individual tester and his or her daily form, the system offers reproducible processes. These points alone make the system a valuable, reliable and fast aid for laboratories.

Herr Kulenkampff, thank you very much for the interview.



3-camera solution of the PURITY SCANNER ADVANCED (marked in blue)

SORTCO RELIES ON SIKORA'S PURITY CONCEPT V FOR CONTRACT SORTING

Fast and reproducible sample testing of plastic pellets

SORTCO GmbH & Co. KG is a specialist for optical and mechanical sorting of shape and color deviations in plastic pellets. In March 2021, the company opened a new, state-of-the-art sorting service center in Niederzissen/Rhineland-Palatinate. The PURITY CONCEPT V is used there after sorting for final sample inspection.

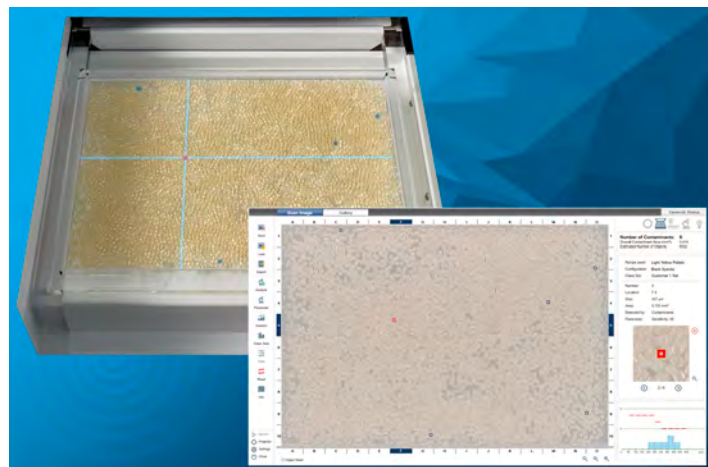
The highest purity of engineering plastics is a decisive feature for the quality of the end products, especially for use in the automotive, aerospace as well as medical and information technology industries. The requirements for the purity of the materials are correspondingly high. Since 2015, SORTCO has been active as a contract sorter and professionally prepares plastic pellets according to customer requirements. For the optical inline inspection and automatic sorting, two PURITY SCANNER ADVANCED from SIKORA are used at SORTCO.

Following the sorting, the random sample inspection of the pellets for final quality control is performed with SIKORA's laboratory testing system PURITY CONCEPT V (pic 1). "With the system, we inspect a pellet quantity defined with the customer and agree on the inspection frequency. For 1,000 kg of pellets, for example, between 1 and 3 samples of approximately 100 g each are inspected", says Hilger Groß, Head of Sales & QM at SORTCO. The test material is distributed on the sample tray, automatically guided through the inspection area and inspected by a camera within a few seconds. A projector marks contaminated material in color directly on the sample tray. At the same time, the contaminated material is displayed and marked on the monitor, indicating the size of the contamination. Individual contaminated pellets can be selected and magnified. On the sample tray, these are simultaneously visualized optically by crosshairs (pic 2).

There are several inspection methods for the random inspection of plastic pellets on the market.

However, according to SORTCO, the inspection and analysis system from SIKORA has proven to be the leader in this field due to its functionality, reliability and speed. "Only with SIKORA, the test material lies on a sample tray without any movement. Thus, the analysis image shows an unsurpassed image quality. With alternative systems, the specimen is in motion, whereby blurring of the image makes an unambiguous evaluation more difficult," explains Groß and continues, "With the PURITY CONCEPT V, we can make reliable statements about the product quality very quickly, very easily and, above all, reproducibly. A clear competitive advantage is the projector. All detected contamination is precisely marked via a light spot or colored crosshairs and can be easily removed from the sample tray. These can be further examined and analyzed to draw a conclusion about the cause of the defect." Clear assignment of contamination and follow-up checks are possible at any time and do not have to be carried out manually by the operator. Groß also cites the clearly structured test report as a quality inspection certificate for the customer that complies with the requirements of ISO 9001:2015, as well as the testing speed of only about 15 seconds per sample inspection as clear advantages of the system. "Including all handling, we have a representative test result within 2 minutes. That is unbeatable on the market."

There is hardly any type of contamination that the system cannot detect. The PURITY CONCEPT V is far superior than the human eye. Humans initially recognize only large contrasts;



Picture 1: Hilger Groß, Head of Sales and QM at SORTCO, presents the PURITY CONCEPT V from SIKORA for inspection and analysis of plastic pellets.

smaller and lighter defects are overlooked. The system immediately identifies all color deviations from a size of 50 μm . These are often burns of the polymer in varying intensity, the so-called black specks, specks, burns or also brown or yellow specks. The size and number of all colored defects and contamination in the pellets are recorded. An unlimited number of individual tests or alternatively serial tests can be performed. Up to 100 individual tests can be combined into one overall result. The test results are documented and automatically made available to the customer together with the sorting results and the quantity balance after completion of the order. Usually, test samples are stored for 12 months. However, the test data is also available at SORTCO beyond this period so that customers can refer to it, for example, in the event of a complaint from the end user.

Innovative and reliable inspection systems for purity testing are essential for sorting at SORTCO. Inspection and sorting systems will continue to gain importance in the industry in the future. According to Groß, this is due to the increasing visual demands placed on products, but also to the high costs associated with machine

downtime and repairs to hot runner systems and injection molds. At the same time, sorting reduces injection molding waste, which, in addition to the economic benefits, also helps protecting the environment. "With the opening of our sorting service center in Niederzissen, we will install more inspection and sorting machines," Gross reveals. The creation of new sorting capacities is only one aspect of this. In the future, the main focus will be to reliably detect defects from a minimum edge length of 50 μm and to separate them in the best possible way. "With SIKORA, we have found a partner whose systems meet these requirements not only for the random sample inspection, but also for the sorting."

Picture 2: Detected contamination is highlighted in color on the sample tray as well as in the software, for an easy extraction.

COLOR DEVIATIONS ANALYZED WITHIN SECONDS

Offline inspection and analysis with the PURITY CONCEPT V

Whether black specks, color deviations or cross contamination – SIKORA's PURITY CONCEPT V impresses with its versatile analysis options. In addition, the enhanced color detection and evaluation feature now offers customers new useful evaluation options.

The SIKORA PURITY CONCEPT V is used as a laboratory testing device for quality assurance, e.g. in the incoming goods inspection or for material release before delivery to the customer. The test material is placed on a sample tray and automatically guided through the inspection area. Within a few seconds, a line-scan color camera inspects the material so that impurities from 50 µm are automatically detected and analyzed.

The system detects typical impurities such as:

- Black specks
- White spots
- Color contamination
- Discolorations (e.g. yellowish, greyish)
- Cross contamination

With the aid of the PURITY LAB PRO software developed in-house, the detected contaminants are visualized on a monitor image. In parallel, they are also color-marked on the sample tray

by laser projector, which simplifies identification and removal of the material. The functionality of the software has now been extended for all applications to include a package for color detection and evaluation. Thus, color deviations are now evaluated both from whole pellets and from small burns or defects. In addition, the mean value of the color of the examined material is determined and output.

The color circle in particular is a practical analysis tool for users to specifically evaluate the color deviations that occur. It shows at a glance which color deviations occur and which color value, for example, the contamination currently selected on the monitor image has. In addition, the mean value of the color of the examined material is determined, which enables, for example, a color comparison with other batches. The user has the option at any time to dynamically change the threshold values for the good and bad areas during detection and thus adapt them to his particular requirements. The information obtained in this way helps the user to better understand the impurities that occur and to draw conclusions about possible causes of the impurities.



Discoloration in flakes
(yellowish, bluish)



White spot



Black speck



Color contamination



Discoloration (greyish)

INDIVIDUAL TRAININGS FOR YOUR PRODUCTION LINE

Prepared for everything – with SIKORA trainings

SIKORA offers device trainings for maintenance, servicing and troubleshooting. In a few days, technical employees are trained on theoretical and practical topics – individually for all SIKORA devices in your production line.

In groups of maximum six, the training participants can expect not only theoretical instruction and presentation of all assemblies, but also an intensive practical part, in which what has been learned can be directly applied, practiced and deepened. The training content is aimed primarily at technical staff who are responsible for servicing and maintaining the equipment. Training courses for other target groups can also be created and carried out individually on request.

The trainings exclusively take place at the "SIKORA Training Center" in Bremen, Germany.

And this for a good reason, knows Jörg Hischer, Service Sales at SIKORA. "As a Service department, nothing would be further from our minds than to deliberately introduce errors into real customer devices. Therefore, we exclusively use special training devices in the trainings, on which the technical knowledge acquired in the theoretical part can immediately be put into practice."

If you also want to provide your employees with useful technical knowledge, please contact us. We will be happy to work out an individual training concept to suit your line, your products and your employees, and provide you with a non-binding offer. "Because nobody is faster at the line and nobody knows the production better than your own employees", Jörg Hischer summarizes the best argument for SIKORA's device trainings.



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VIBRATORY FEEDER VS. CONVEYOR BELT

3 reasons why you should shake your pellets

The PURITY SCANNER ADVANCED from SIKORA transports your pellets on a 70 cm long and 21 cm wide stainless steel vibrating chute from the material infeed, past the X-ray inspection, to the optical inspection and the sorting unit. Why did the SIKORA engineers choose this transport system instead of a conveyor belt? Here are the three most important reasons:

1. Purity

The SIKORA vibratory feeder is made of high-quality polished stainless steel, which does not introduce any additional impurities into the sorting process and enables easy, fast and effective cleaning. Conventional mechanical conveying technology consists of conveyor belts made of rubber material. The continuous mechanical movement inevitably causes abrasion of this rubber material and thus contamination of the complete pellet throughput. Such a problem does not exist with the vibratory feeder.

2. Long life time

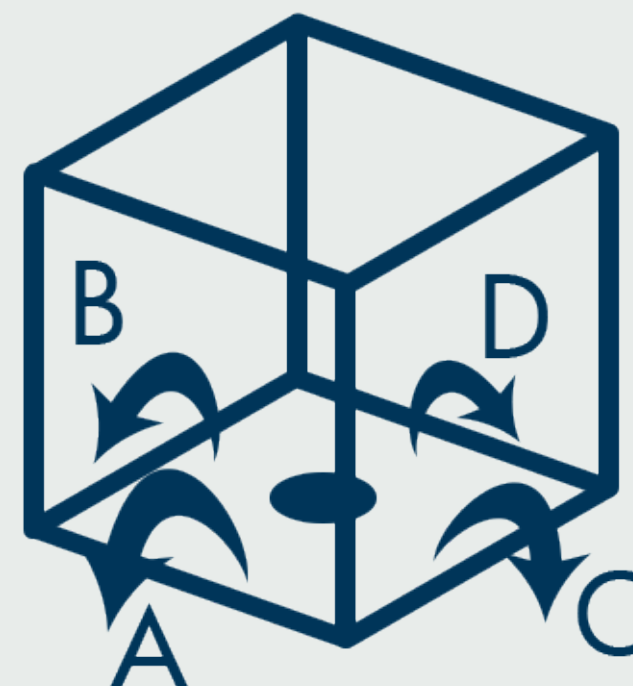
Stainless steel has a durability of up to 100 years, it hardly gets scratches – less than gold – and is very resistant. Thus, the SIKORA vibratory feeder of the PURITY SCANNER ADVANCED is designed for an almost unlimited service life. Rubber material, on the other hand, develops such a strong abrasion in the course of time that the conveyor technology has to be replaced. This means not only additional, recurring costs, but also interruptions to production for the necessary maintenance work.



3. Advantages using TPU as an example

There is a wide variety of plastics on the market that can be analyzed and sorted with the PURITY SCANNER ADVANCED. Each material has its own challenges. Thermoplastic polyurethane (TPU), for example, which is also used in automotive fittings, is a very elastic plastic, which makes controlled conveying difficult. Here, the conveying trough of the PURITY SCANNER ADVANCED offers an ideal approach due to the principle of minimal vibration conveying. On the vibratory feeder, the pellets settle faster than they would on a mechanical conveyor belt. Shorter conveying distances and consistently high throughputs are a clear advantage thanks to the vibration as well as the comprehensive detection range provided by the X-ray and optical cameras of the PURITY SCANNER ADVANCED.

RAFFLE



Where is the dot?

Imagine a dice. This dice can roll in four different directions (A to D). On the bottom of the dice is a dot.

Roll the dice in your mind in the following directions:

A, B, B, A, C, D, C

Where is the dot now?

Send us your solution via email by Dec 31, 2021 to:
extra@sikora.net

Win one of three Sennheiser SC 165 headsets in black.



Your contact details will not be passed on to third parties. Each correct answer takes part in the raffle. Employees of SIKORA AG and SIKORA Holding GmbH & Co. KG and their relatives are excluded from participation. Each player can only participate once. We value the first email, all subsequent emails will be considered invalid. The legal process is excluded. GOOD LUCK!

Congratulations to the winner of our last raffle – SIKORA EXTRA 1/20:

- Sonja Granith
- Philipp Rechberger
- Christian Meitner

NEXT EVENTS



• Compounding World Expo | Sep 29-30, 2021 | Essen, Germany



• FAKUMA | Oct 12-16, 2021 | Friedrichshafen, Germany



• Compounding World Expo | Nov 3-4, 2021 | Cleveland, OH, USA

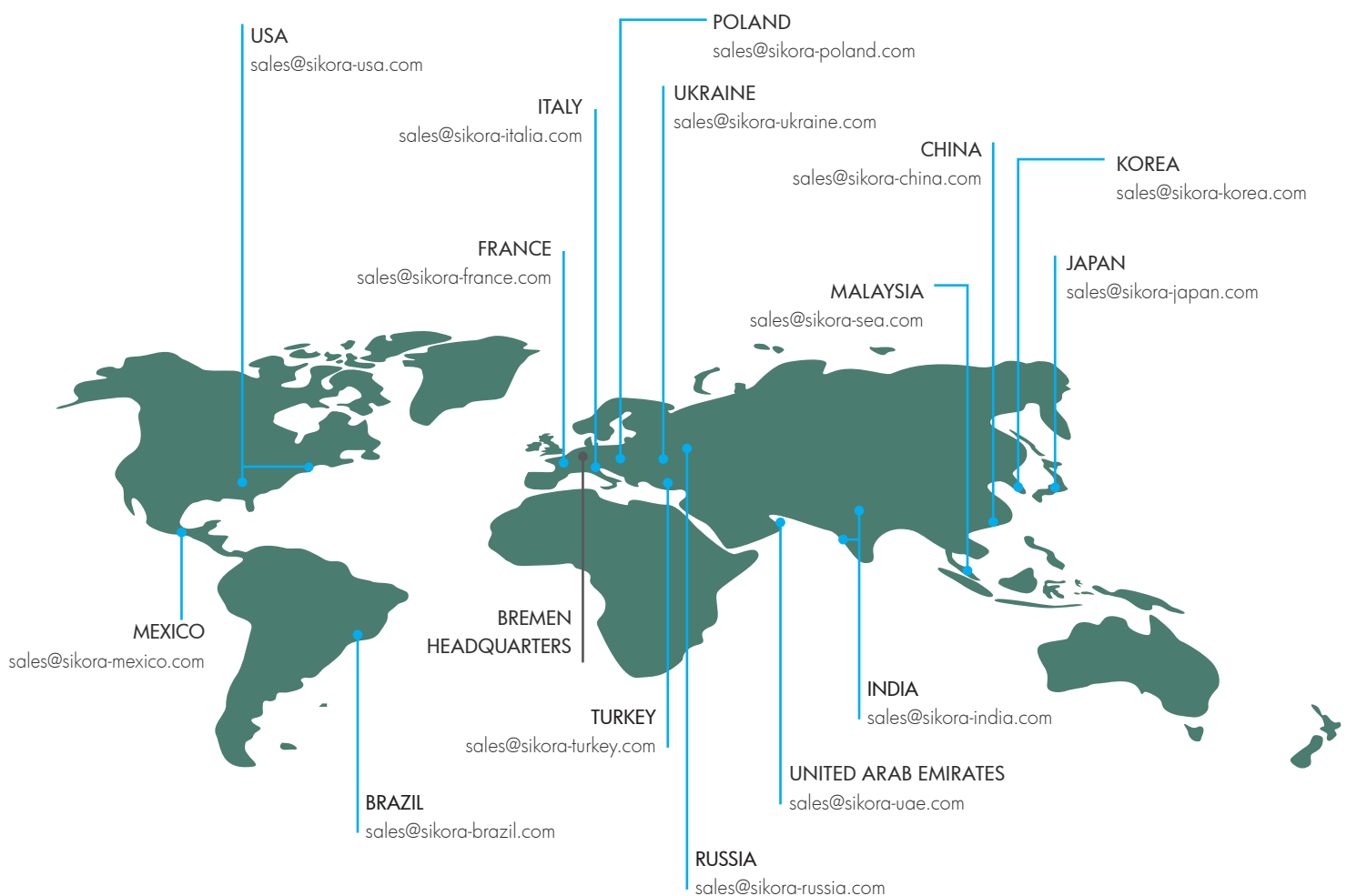
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