

SIKORA EXTRA

Your magazine for Inspection | Sorting | Analysis



SIKORA
PURITY CONCEPT X

SIKORA
PURITY SCANNER

- Dual inspection X-ray and optical cameras
- Detection of metallic and organic contamination down to 50 µm on the surface and inside the tablet
- Automatic sorting



Special Topic:

SIKORA at the wire 2018

04

Discover inspection and analysis systems

Interview: Lee Weng Kian

09

Director SIKORA SOUTHEAST ASIA

Dear readers,

SIKORA AG is celebrating. 45 years ago, on November 11th, 1973, Harald Sikora founded the company, initially as a one-man operation. After the beginning in the wire and cable market, SIKORA is nowadays also active in the plastics as well as hose and tube sectors. Today, we have more than 250 employees working for the SIKORA Group worldwide. As a competent partner, we provide future-oriented technologies to optimize your production processes. See for yourself, for example, at the wire in Düsseldorf this year.

Visit us at our exhibition booth in hall 9, booth A41. We are looking forward to welcoming you. Innovative systems for online inspection and sorting as well as for offline inspection and analysis of plastic materials for an optimized material quality and the highest process efficiency are awaiting you. Learn more on page 04.

As a result of constant growth, a state-of-the-art production building is currently under construction at SIKORA headquarters in Bremen, Germany. The new building offers more space for an efficient production and logistics as well as additional communication areas for creative ideas. Last December, we laid the foundation stone for the building. Read more on page 07.

With our comprehensive sales network, we guarantee that our worldwide customers are always well-advised. Mr. Lee Weng Kian, Director SIKORA SOUTHEAST ASIA, talks about the current development of the plastics market in Malaysia on page 09.

Enjoy reading!

Sincerely,



Dr. Christian Frank
CEO SIKORA AG



Harry Prunk
Managing board SIKORA AG



f. l.: Dr. Christian Frank, Harry Prunk

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and analysis 04

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**FOR 45 YEARS, WE HAVE
BEEN THERE FOR YOU!**

INNOVATIVE SYSTEMS FOR INSPECTION, SORTING & ANALYSIS

SIKORA at the wire 2018 – visit us at booth 9A41

From April 16 to 20, 2018, wire 2018 will be held in Düsseldorf, Germany – once again, SIKORA presents innovative inspection, sorting and analysis systems from the comprehensive product portfolio. At the exhibition booth 9A41, with an area of 200 m², visitors can discover the most current technological innovations for quality control and process optimization within the plastics industry.

PURITY SCANNER – Online inspection and sorting

The PURITY SCANNER is an impressive system that intelligently combines the advantages of an X-ray measuring system with an optical system that detects contamination inside a pellet as well as on the pellet surface and automatically sorts them out.

The usage of both technologies is unique and offers the industry excellent new perspectives. With the especially developed X-ray technology, the PURITY SCANNER is the first system that inspects even colored (e.g. black) pellets for contamination.

Therefore, the PURITY SCANNER the optimal online inspection and sorting device that is used during manufacturing of material and granulate, during compounding, for masterbatches, and further plastics processing as well as during extrusion and outsourced sorting.

PURITY SCANNER ADVANCED

The PURITY SCANNER ADVANCED offers a flexible, adaptive camera concept that is equipped with different cameras according to the expected contamination and application. In addition to the X-ray and optical cameras of the PURITY SCANNER, the PURITY SCANNER ADVANCED provides the detection of cross contamination with infrared and color cameras. Up to five cameras can be used in the PURITY SCANNER ADVANCED, and therefore, adapt to the respective requirements.

Competitive advantage

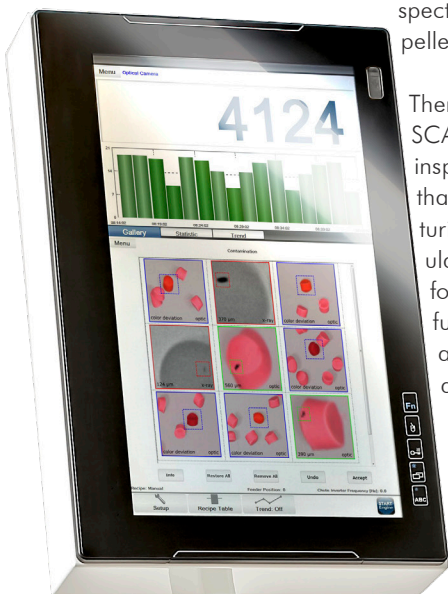
The PURITY SCANNER as well as the PURITY SCANNER ADVANCED ensure a constant material quality, minimize the risk of possible complaints and prevent returns due to contaminated material. A strong competitive advantage as well as a fast amortization are the result of these inspection and sorting devices, especially tailored for the requirements of the plastics market.

PURITY CONCEPT Systems

Quality requires transparency for stable processes – the application of the PURITY CONCEPT Systems is wide-ranged. Sample testing analysis during manufacturing and incoming goods inspection is typical. Our customers may choose from X-ray technology (X) or optical sensors (V).

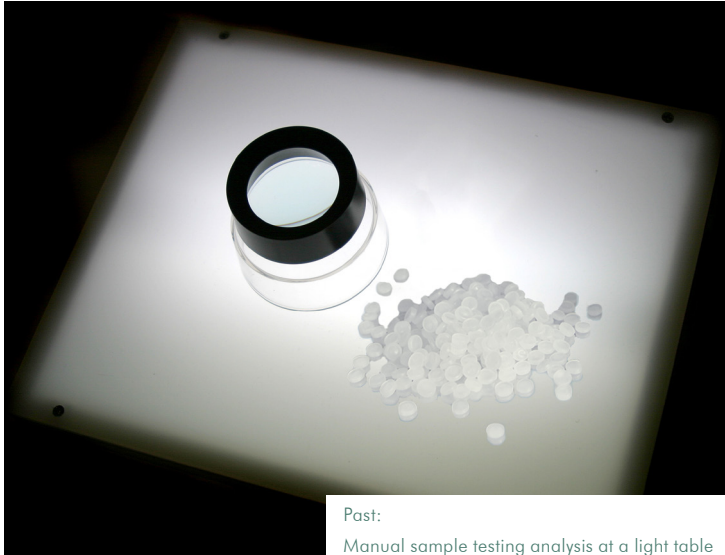
Combination of online and offline inspection and analysis

SIKORA recommends the combination of PURITY SCANNER/ADVANCED and PURITY CONCEPT Systems for a comprehensive inspection and analysis of pellets. Pellets that have been detected and sorted out online by the PURITY SCANNER/ADVANCED are subsequently inspected offline with an analysis device of the PURITY CONCEPT Systems. This device identifies individual contaminated pellets and determines the cause of the contamination. Due to the collected data, future contamination will be prevented.



Display of detected contamination by a color camera –
PURITY SCANNER ADVANCED

Optical offline inspection and analysis system PURITY CONCEPT V



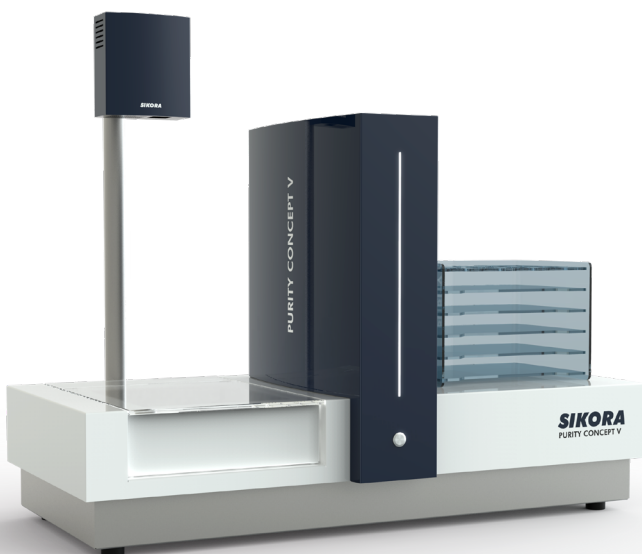
Past:
Manual sample testing analysis at a light table

Intelligent combination of light table and automatic material inspection

The PURITY CONCEPT V (Visual) by SIKORA is a modern offline system for optical inspection and analysis of transparent and colored plastic pellets with an intelligent light table. The test material is automatically moved through the system and contamination, for example Black Specs, are visualized. The system is suitable for sample testing of produced material or incoming goods inspection.

Sample testing of pellets have, hitherto, been carried out primarily with light tables. For that, the test material was optically illuminated and manually inspected by the operator. This method depends on the respective operator and offers restricted repeatability. Limits of the procedure are detectable sizes of the contamination for the human eye as well as their classification into size classes. Alternative optical offline inspection devices feed the test material through a hopper and a channel into the inspection area. Thereby, pictures of the material are taken successively and contaminated material is sorted out. Due to the blending of the sorted material, distinct allocations of contamination to the graphic material as well as a follow-up inspection are not possible.

Future:
Professional inspection and analysis of plastic material with an optical camera – PURITY CONCEPT V



The PURITY CONCEPT V combines the advantages of a light table and complements them with an automatic offline material control. The intelligent system moves material samples on a tray through the inspection area. Within seconds, the material is automatically inspected by a color camera and contaminated material is highlighted by a projector directly on the tray. By evaluating the image recordings, contamination on the surface of transparent or colored material are automatically detected, visualized, and evaluated. A clear classification of contamination and follow-up inspection are always possible. Therefore, the system significantly contributes to quality control and process optimization.

X-ray based offline inspection and analysis system PURITY CONCEPT X

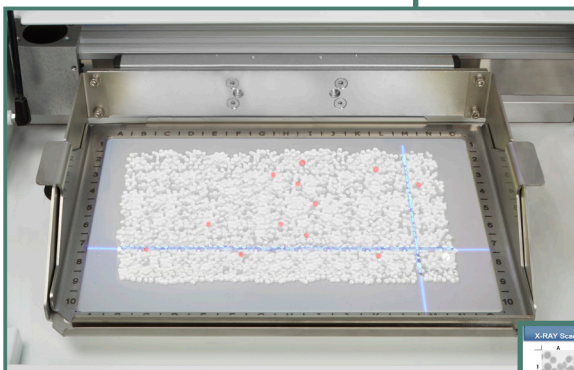
PURITY CONCEPT X

The PURITY CONCEPT X is based on X-ray technology. It detects and analyzes for example metallic contamination inside of transparent and non-transparent pellets and flakes. The different attenuation performance of plastics and contamination helps to detect contaminated pellets.

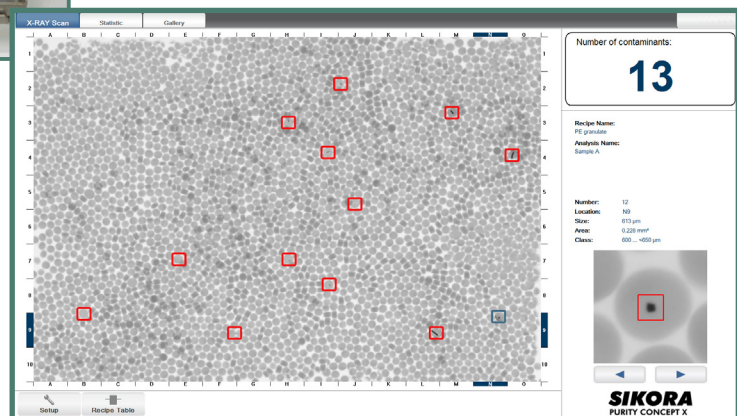
The same principle enables users to identify organic or cross contamination of different plastic materials – even if the plastic pellets have the same color.

For the inspection, the pellets are positioned on a tray. The tray is loaded with up to 200 ml of pellets (approx. 3,000 pieces), which are examined for contamination within seconds and subsequently optically highlighted. Quality control could not be more perfect.

PURITY
CONCEPT X
with analysis tray



Visualization of detected contamination on the monitor of the connected PC as well as on the device tray



STRATEGIC INVESTMENT IN THE FUTURE

Laying of the foundation stone for the new SIKORA production building in Bremen, Germany



Laying of the foundation stone at SIKORA: f. l. Jürgen Menke and Fikret Egi (Zechbau GmbH), Harald and Bernadette Sikora (SIKORA HOLDING), Jürgen Keil (Gruppe GME), Dr. Christian Frank and Harry Prunk (SIKORA AG)

On December 12, 2017, at 12:12 p.m., SIKORA laid the foundation stone for the new production building at their headquarters in Bremen-Mahndorf, Germany, in the presence of employees and business partners. The expansion of the headquarters offers more space for a more efficient production and logistics as well as good conditions for communication, creativity, and innovations. The completion of the building is planned for November 2018.

The new production building, with an effective area of 7,000 m² on three floors, offers more than additional space for employees and production. Planned are also areas for communication and creativity to create room for new ideas and innovations. Furthermore, the expansion will be used to make existing processes more efficient and innovative. The inclusion of current lean production concepts is a central element in order to increase productivity. The result is a more efficient and innovative production for the assurance of highest product quality as well as delivery reliability.

“The expansion at our production headquarters in Bremen, Germany, is a strategic investment in the future”, says Dr. Christian Frank, CEO of SIKORA AG. “We invest in further growth and global competitiveness.” Strong growth as well as diversification of the company to new markets and accompanying new and further development of technologies and devices were the reasons for the expansion. “With our large product portfolio for the segment cable as well as for the area optical fiber measuring technology and the hose and tube, sheet and plastics industries, which grew strongly over the last years, we reached our capacity limit with the old production building”, says Dr. Christian Frank. The new building offers 350 % more space for the growing business.

The architectural implementation of the production building is carried out by Gruppe GME, who also realized the three previous SIKORA buildings. “We have found an optimal solution to combine modernity with tradition. That is reflected in the design of the façade and the inventory planning”, explains Jürgen Keil, Shareholder at Gruppe GME.

During the construction phase, the production has been moved to a building only 400 m from SIKORA headquarters, ensuring a very short connection to management, administration and the research and development team.



Design of the new
SIKORA production building

SIKORA SERVICE: SMART ASSISTANCE MANAGER (SAM)

SIKORA service competence in your hand

Fast, competent and reliable support for our customers all over the world – SIKORA meets these requirements with the Smart Assistance Manager (SAM). For our customers, this means a significantly more efficient support and therefore, optimized service processes.

The device for professional service

SIKORA's Smart Assistance Manager, short SAM, is a 13.3" tablet, optimized for the rough industrial environment.

With the Smart Assistance Manager, you are able to establish a direct connection with a SIKORA support engineer to receive instructions for all maintenance, support and diagnosis tasks via the integrated video chat feature (5 MP camera). SIKORA's support engineer uses the SAM for a direct connection to your SIKORA device to receive an immediate diagnosis in real-time or to upload software updates.

The assignment of the Smart Assistance Manager already starts with the installation of an inspection or analysis device. With the SAM, you can show us the environmental conditions as well as the line layout. The SIKORA support is happy to assist you, starting with information on the best possible positioning of the equipment.

Due to diverse connection possibilities, such as USB 3.0, RJ 45 Ethernet, Bluetooth 4.0, and the LTE/UMTS module, as well as various application possibilities, the Smart Assistance Manager is an important tool for modern production lines, for example to support maintenance and diagnosis tasks, as well as every Smart Factory in the era of Industry 4.0.

Our individually designed license module always guarantees the most current version of the SIKORA diagnosis software for a live session for support or as an offline diagnosis system for all SIKORA measuring, control, inspection, analysis and sorting systems.



SIKORA Smart Assistance Manager –
direct connection to SIKORA service



STRONG GROWTH EXPECTED FOR THE MALAYSIAN PLASTICS MARKET

Interview with Lee Weng Kian, Director SIKORA SOUTHEAST ASIA

Mr. Kian, with the opening of the Malaysian office last year, SIKORA has now 14 subsidiaries worldwide. Why Malaysia?

The foundation of SIKORA SOUTHEAST ASIA enables the fast and efficient support of our customers in Malaysia, Indonesia, Laos, and Cambodia. Southeast Asia and especially Malaysia show great potential for the plastics market.

A growth rate of 10 % for the Malaysian plastics market was merely predicted for the year 2017. That fits the increase of investments in 2015 from 190 million to 320 million Euro.* Another important factor is the constant increase of requirements regarding the quality of plastic materials.

We see a clear trend of players in the industry placing their focus on innovative technologies for the optimization of their products and components. With the subsidiary in Malaysia, we want to fascinate local customers with the advantages of our products and professional support and lead the way to process stability.

In your opinion, what is the reason for increasing quality requirements in the plastics area?

Fluctuating prices of raw materials as well as a constantly growing environmental awareness are only some examples for higher quality requirements. The more repeatable high quality is, the more stable prices for end-products become and the lower the scrap rate is, which is leading to an improved economy. Further-



Lee Weng Kian,
Director SIKORA SOUTHEAST ASIA

more, new areas of application and innovative technologies are constantly being developed for the plastics production and processing, such as in the area of injection molding, that entail higher purity standards.

How do you support customers to keep and optimize these standards?

SIKORA's inspection and sorting devices PURITY SCANNER and PURITY SCANNER ADVANCED enable a continuous control of material quality. Furthermore, the flexible analysis devices of the PURITY CONCEPT Systems help to detect and eliminate causes of contamination. I advise my customers individually and together we find fitting solutions for quality control and process optimization in every line.

Mr. Kian, thank you very much for the interview!

*Syed Rashid Ali: "MALASIA: More growth expected for Malaysian plastics industry", under <https://www.gupta-verlag.com/news/industry/19986/malaysia-more-growth-expected-for-malaysian-plastics-industry> (retrieved Feb 15, 2018).

INDUSTRY 4.0 AND IIOT*

Shape the future with SIKORA devices

The term "Industry 4.0" – together with the "Industrial Internet of Things" (IIoT) – shapes the discourse on sustainability and competitiveness of the industry. The interaction between human, machine, and production during the running production process enables an independent production control via intelligent machines. SIKORA's online inspection and sorting devices PURITY SCANNER and PURITY SCANNER ADVANCED are equipped with interfaces for Industry 4.0. How the customer benefits from it, shows the following overview.

Data transmission

In production lines, SIKORA's PURITY SCANNER respectively PURITY SCANNER ADVANCED receives nominal values from a programmable logic controller (PLC) of the customer and in return transmits process data. The received information are the basis of process optimization.

Visualization of process data

With the integration of SIKORA's ECOCONTROL processor system into the production line, the customer gains various new networking and control possibilities in the area of Industry 4.0. The PURITY SCANNER/ADVANCED is connected to the ECOCONTROL. It visualizes the transmitted data and creates trend and statistical data. Furthermore, the ECOCONTROL is able to mirror the recorded production data to any desired display systems in the line where it can be further processed.

Data exchange with IT systems

The SIKORA processor devices provide the industrial network protocol OPC UA, which increasingly prevails as standard language of the IIoT and allows a comprehensive data exchange with IT systems. The PURITY SCANNER/ADVANCED is equipped with all standard interfaces, and therefore, fit for Industry 4.0 and with regard to the hardware optimally designed for future developments.

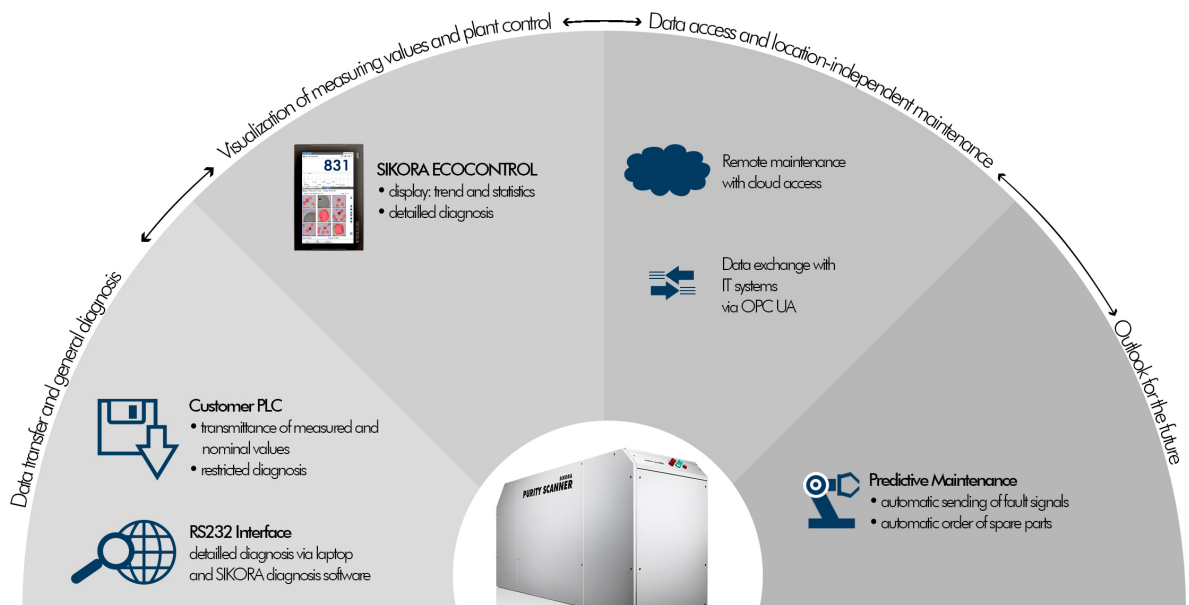
SIKORA service

SIKORA service offers customers comprehensive services regarding the area of Industry 4.0. This includes remote maintenance via safe cloud accesses for customers that is increasingly gaining importance. The PURITY SCANNER/ADVANCED, in combination with the ECOCONTROL, also enables remote maintenance via an Ethernet interface, so that SIKORA employees may access the system location-independent if needed. The development of special maintenance software tailored to individual customer requirements that enables predictive product maintenance will also be possible in the future.

*Industrial Internet of Things

OFFLINE LABORATORY DEVICES

The PURITY CONCEPT Systems, as classic laboratory devices, dispose of all common PC interfaces like LAN or USB, and therefore, benefit from the expected developments of the IT technology.



RAFFLE

H	A	R	C	V	Ö	X	W	G	K	N	F	T	K	A
C	H	I	L	A	S	E	R	M	K	Ö	D	Ü	E	S
H	S	T	J	C	A	O	K	A	Q	F	P	M	F	U
H	L	O	D	F	L	H	Z	W	S	L	E	J	S	V
U	Ö	D	P	Ü	F	A	C	M	F	T	R	H	S	Y
Q	U	A	L	I	T	Y	T	B	Z	J	F	A	J	I
Ö	F	S	T	V	M	S	A	W	H	G	E	X	L	Z
Z	S	B	A	R	J	K	C	S	W	L	C	Ä	R	X
A	W	I	J	Z	R	C	H	L	G	V	T	X	D	L
H	D	T	K	L	G	N	D	C	L	O	I	Ä	G	B
L	D	Ü	N	O	S	W	H	N	M	S	O	J	Y	A
K	R	L	P	S	R	Ä	C	Q	N	Q	N	J	K	C
K	V	B	S	K	L	A	J	D	X	V	T	L	G	Ö
V	R	J	K	A	W	K	L	V	D	T	G	J	A	K
L	W	G	H	E	B	L	O	R	T	N	O	C	V	A

Find the hidden SIKORA terms

This alphabetical jumble hides 5 SIKORA terms in total that are written in all directions.

Find these 5 terms and send us a picture of your solution.

LASER
CONTROL
PERFECTION
SIKORA
QUALITY

Send us an email with your solution by May 31st, 2018, to: extra@sikora.net

Win one of three **Creative Sound Blaster Play!3** (USB-DAC-amplifier/external sound card)

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 e-mail, all subsequent emails will be considered invalid. The legal process is excluded.

GOOD LUCK!

Congratulations to the winners of the selfie raffle of the Fakuma!

- Marius Kantoich
- Susanne Sauer
- Iris Brisbois



NEXT EVENTS



- wire | Apr 16-20, 2018 | Düsseldorf, Germany | Booth 9A41



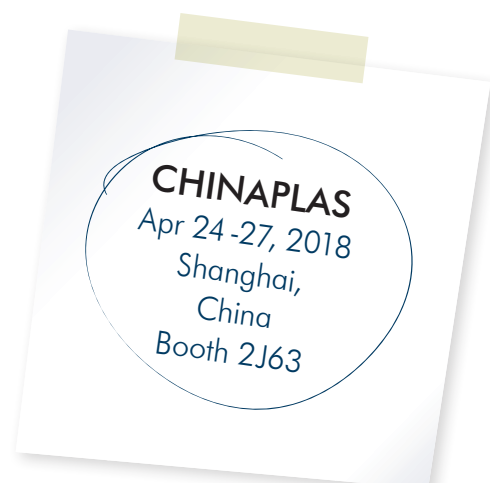
- Tube | Apr 16-20, 2018 | Düsseldorf, Germany | Booth 6J32



- NPE | May 7-11, 2018 | Orlando, FL, USA



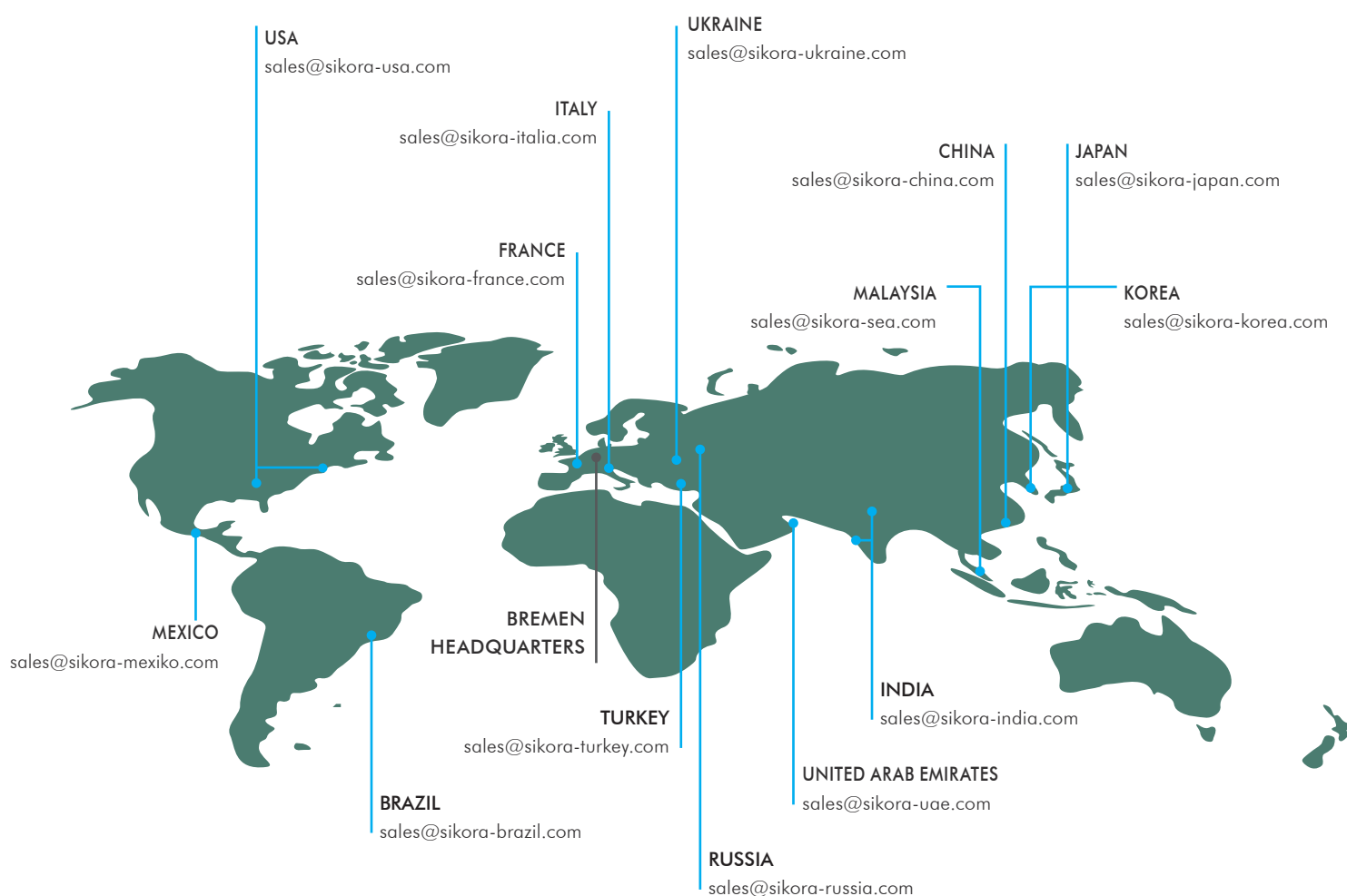
- PLAST | May 29 - Jun 1, 2018 | Milan, Italy



SIKORA

Technology To Perfection

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